NORTH CAROLINA BENCHMARKING PROJECT

Final Report on City Services for Fiscal Year 2012–2013

PERFORMANCE AND COST DATA

FEBRUARY 2014

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PREFACE

North Carolina municipalities are continually looking for ways to improve the efficiency and effectiveness of service delivery. As part of this effort, a group of municipalities joined together with the School of Government and the North Carolina Local Government Budget Association to create an ongoing project to compare performance and cost data for selected governmental services. This joint undertaking is known as the North Carolina Local Government Performance Measurement Project or, more commonly, as the North Carolina Benchmarking Project. This report presents performance and cost data for the fiscal year ending June 30, 2013, for the fifteen North Carolina municipalities participating in the benchmarking project—Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem. Seventeen previous reports have been published regarding municipal services. All of these reports are available through the Publications Sales Office of the School of Government (919.966.5381). The previous four reports may be purchased online by using the following URL:
http://shopping.netsuite.com/s.nl?c=433425&sc=7&category=107&search=final%20report

The benchmarking project is a collaborative effort. Officials from the participating local governments have made vital contributions to the success of the project, including budget and finance staff, program and service staff, and city and town managers. Special thanks are owed to the members of the steering committee, who provide the necessary leadership demanded by such a project: Suzanne Parmentier, Accounting and Budget Manager of Apex; Tony McDowell, Budget Manager, and John Sanchez, Budget Analyst of Asheville; Aaron Noble, Human Resources Director of Burlington; Kathy Lleras, Budget Analyst, and Josh Edwards, Budget Analyst of Cary; Sarah Richards, Budget and Evaluation Analyst of Charlotte; Robin Barham, Budget and Performance Manager, and Lesley Reder, Management Analyst of Concord; Jon Decker, Budget Analyst of Greensboro; Kim Branch, Financial Services Manager, and Rupal Patel, Financial Analyst of Greenville; Karen Hurley, Budget Analyst of Hickory; Laura Altizer, Budget Analyst, and Glenda Barnes, Budget Analyst of High Point; Evans C. Ballard, Budget and Benchmarking Analyst of Salisbury; Kathy Mann, Senior Budget Analyst of Wilmington; Lanette Pridgen, Budget Analyst of Wilson; and Ben Rowe, Budget and Evaluation Director of Winston-Salem.

The benchmarking project receives contributions from other individuals who strongly support benchmarking and performance measurement. William C. Rivenbark, David N. Ammons, and A. John Vogt, faculty members with the School of Government, serve as project advisors. Special thanks go to Michael R. Smith, dean of the School of Government, and Thomas H. Thornburg, senior associate dean of the School of Government, for their leadership and support of the benchmarking project. The author wishes to acknowledge other School of Government staff who have contributed many hours to the benchmarking project, including Melissa Twomey and Dan Soileau in the Publications Division and Megan Dale, who worked on this report as a research assistant.

Dale J. Roenigk
February 2014

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Performance and Cost Data

INTRODUCTION

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INTRODUCTION

Can local governments measure their performance and cost in a meaningful way? Can performance measures in one local government be legitimately compared to the performance of another? In the fall of 1995, fourteen large municipalities and counties in North Carolina agreed to participate in a collaborative project to answer these and other questions relating to benchmarking. Seven of the jurisdictions were municipalities, forming Phase I of what is now known as the North Carolina Local Government Performance Measurement Project or, more commonly, the North Carolina Benchmarking Project. The other seven jurisdictions were counties, constituting Phase II of the benchmarking project. A third phase of the benchmarking project began in January 1997, consisting of fourteen municipal and county, small- and medium-size North Carolina jurisdictions. These phases represented the pilot stage of the benchmarking project.

Since that beginning, the benchmarking project has proceeded with an ongoing agreement to collect, clean, and report comparative performance and cost data from the participating municipalities. Listed below are the fifteen municipalities that are included in this report:

- Apex
- Asheville
- Burlington
- Cary
- Charlotte
- Concord
- Durham
- Greensboro
- Greenville
- Hickory
- High Point
- Salisbury
- Wilmington
- Wilson
- Winston-Salem

This report is the result of a joint undertaking of the participating municipalities, the School of Government, and the North Carolina Local Government Budget Association. The North Carolina League of Municipalities and the Local Government Commission also have contributed to the development of this report. The goals of the benchmarking project are as follows:

1. To develop/expand the use of performance measurement in local government
2. To produce reliable performance and cost data for comparison
3. To facilitate the use of performance and cost data for service improvement

SERVICES

This report presents performance and cost data and accompanying explanatory information for the following service areas:

- Residential Refuse Collection
- Household Recycling
- Yard Waste/Leaf Collection
- Police Services
- Emergency Communications
- Asphalt Maintenance and Repair
- Fire Services
- Building Inspections
- Fleet Maintenance
- Central Human Resources
- Water Services
- Wastewater Services
- Core Parks and Recreation

The participating units did not agree to continue the benchmarking project to endure the challenges of data collection and "data cleaning" simply to produce a report. They continue with the belief that performance measurement and benchmarking are catalysts to service improvement. No jurisdiction can be the best in every service that it provides, highlighting the notion that even outstanding performers can learn from the practices of others. Performance measurement and benchmarking are about tracking performance and cost data and making changes based on both internal and external comparisons over time.

This report is the eighteenth publication representing municipal services. The previous seventeen reports are listed below along with their publication dates:

- *Performance and Cost Data: Phase I City Services* (October 1997)
- *Performance and Cost Data: Phase III City Services* (March 1999)
- *Final Report on City Services for Fiscal Year 1997–98* (March 1999)
- *Final Report on City Services for Fiscal Year 1998–99* (February 2000)
- *Final Report on City Services for Fiscal Year 1999–2000* (February 2001)
- *Final Report on City Services for Fiscal Year 2000–2001* (February 2002)
- *Final Report on City Services for Fiscal Year 2001–2002* (February 2003)
- *Final Report on City Services for Fiscal Year 2002–2003* (February 2004)
- *Final Report on City Services for Fiscal Year 2003–2004* (February 2005)
- *Final Report on City Services for Fiscal Year 2004–2005* (February 2006)
- *Final Report on City Services for Fiscal Year 2005–2006* (February 2007)
- *Final Report on City Services for Fiscal Year 2006–2007* (February 2008)
- *Final Report on City Services for Fiscal Year 2007–2008* (February 2009)
- *Final Report on City Services for Fiscal Year 2008–2009* (February 2010)
- *Final Report on City Services for Fiscal Year 2009–2010* (February 2011)
- *Final Report on City Services for Fiscal Year 2010–2011* (February 2012)
- *Final Report on City Services for Fiscal Year 2011–2012* (February 2013)

REPORTING FORMAT

This is primarily a data report. It incorporates graphs, summary tables, and explanatory information to present the performance and cost results for each service area under study. The results of each service area by municipality are displayed with a standard, two-page format. The following information is contained in this report:

1. **Explanatory Information.** This segment of the report describes how the service is provided and identifies conditions or dimensions that affect performance and cost data of service delivery.
2. **Municipal Profile.** This includes a limited number of characteristics of each municipality, such as population density and median family income, which may affect service performance and cost. Some of the general characteristics, such as population, appear in the municipal profiles for all of the service areas. Others, such as weather and tax base served, appear only in selected profiles.
3. **Service Profile.** This area provides input and output data and identifies important dimensions of service delivery.
4. **Full Cost Profile.** A cost accounting model is used to calculate full or total cost of providing each service area under study. Although the cost data were collected in detail, using a collection instrument with more than seventy specific line items, the reporting format aggregates the detailed cost data into three general categories for the purpose of presentation: personal services for the direct expenses of salaries, wages, and related fringe benefits; operating costs that include direct operating expenses and indirect cost allocations; and capital costs that represent depreciation for equipment and facilities.
5. **Resource Measures.** These measures gauge the amount of resources or inputs municipalities allocate for the provision of a given service.
6. **Performance Measures.** Three types of performance measures are used and reported—workload, efficiency, and effectiveness. A municipality's performance is compared to the performance average, noting that the average is based on services with numerous variations and should be viewed with caution. The measures used in this report do not assess total service performance. They gauge certain service dimensions and should be approached with an understanding of the service being provided.

SUMMARY OF OVERALL RESULTS

What the project has achieved

1. The project's methodology, consisting of service profiles, performance measures, cost accounting, and explanation of results, works extremely well for data consistency and comparability. The project's accounting model is especially effective in producing reliable and materially accurate cost data.
2. The performance data have been used in numerous jurisdictions for service improvement, especially in the areas of residential refuse collection, household recycling, police services, and fleet services.

3. The project's success is directly correlated with consensus about service definitions and measurement formulas, involving numerous local government officials from the participating units.

What we have learned

1. Local governments can produce accurate, reliable, and comparable performance and cost data, which can then be used for service improvement.
2. Specific service definitions are vital to performance measurement, including explanatory information.
3. Data availability and quality are very important to performance measurement.
4. Performance measurement and cost accounting are time consuming. However, performance measures provide valuable feedback when the goal is to deliver quality services at reasonable cost.

READING THE REPORT

This report presents the performance and cost data for the fifteen North Carolina municipalities participating in the benchmarking project for the fiscal year ending June 30, 2013. It also presents multiyear data for participants based on the number of fiscal years that each municipality has participated in the benchmarking project. The following table provides the five fiscal years of performance measures (by final report) contained within the present report and the corresponding municipalities by fiscal year of participation.

Final Report	Jurisdictions
Final Report on City Services for Fiscal Year 2008–2009	Asheville, Burlington, Carrboro, Cary, Charlotte, Concord, Durham, Gastonia, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilmington, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2009–2010	Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2010–2011	Apex, Burlington, Cary, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2011–2012	Apex, Burlington, Cary, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2012–2013	Apex, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem

The municipal profile, full cost profile, service profile, and explanatory information for each municipality are based solely on performance and cost data for the fiscal year ending June 30, 2013. Readers should be extremely careful when interpreting the performance and cost data for municipalities with multiyear data. Municipal profiles, full cost profiles, service profiles, and explanatory information that support performance measures for the fiscal years ending June 30, 2009, through June 30,

2012, are located in prior year performance and cost data reports and can be obtained from the School of Government.

The benchmarking project considers new service areas and service changes on an annual basis under the guidance of the steering committee. Asphalt Maintenance and Repair represented a new service area for the fiscal year ending June 30, 2000. This service was previously reported as Street Pavement Maintenance. Police Services represented a new service area for the fiscal year ending June 30, 2001. This service was presented as Police Patrol and Police Investigations in prior reports. Fleet Maintenance represented a new service area for the fiscal year ending June 30, 2002. Central Human Resources represented a new service area for the fiscal year ending June 30, 2004. Water Services represented a new service area added in the fiscal year ending June 30, 2007. Wastewater Services was added in the fiscal year ending June, 30, 2012. Finally, Core Parks and Recreation Services was added this year using data starting with the fiscal year ending June 30, 2013.

Municipalities do not participate in every service area for a variety of reasons. Certain ones do not participate in Emergency Communications and Building Inspections because those services are often county functions. In some cases, a municipality may not participate due to organizational structures or other issues. The following table provides the jurisdictions participating in each service area contained in this report.

Service Area	Jurisdictions
Residential Refuse Collection	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Household Recycling	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Yard Waste/Leaf Collection	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Police Services	Apex, Asheville, Burlington, Cary, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Emergency Communications	Apex, Asheville, Burlington, Cary, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, and Winston-Salem
Asphalt Maintenance and Repair	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Fire Services	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Building Inspections	Apex, Asheville, Burlington, Cary, Durham, Greensboro, Greenville, High Point, Wilson, and Winston-Salem
Fleet Maintenance	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem

Service Area	Jurisdictions
Central Human Resources	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem
Water Services	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Durham, Greensboro, Hickory, High Point, Salisbury, Wilson, and Winston-Salem
Wastewater Services	Apex, Cary, Charlotte, Concord, Durham, Greensboro, Hickory, High Point, Salisbury, Wilson, and Winston-Salem
Core Parks and Recreation	Apex, Asheville, Burlington, Cary, Concord, Durham, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilmington, Wilson, and Winston-Salem

It also should be noted that not all municipalities submit performance and cost data for each performance measure contained within the respective service area. Therefore, data are missing for selected performance measures regardless of service participation.

Performance and Cost Data

RESIDENTIAL REFUSE COLLECTION

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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 Cost per Residential Collection Point

These are the project's principal measures of efficiency for this service. Because of differences in the number 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 in 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)	City FTE Collection Positions	Main Equipment		Landfill/Transfer	
								Packers	Automated	Trips per Day	Distance
Apex	Curbside	12,036	10,896	na	100%	Contracted	na	na		na	na
Asheville	Curbside	30,590	22,184	33	0%	1 & 3 person	14	1	7	2	6 miles
Burlington	Curbside	17,466	12,142	20	0%	1 & 2 person	6	2	4	2	17 miles
Cary	Curbside	45,091	29,206	48	0%	1 & 4 person	28	2	10	1	20 miles
Charlotte	Curbside	214,016	171,182	320	0%	1 & 2 person	80	7	57	1.5	13 miles
Concord	Curbside	28,524	22,298	25	100%	Contracted	0.5	0	5	1	8 miles
Durham	Curbside	70,287	46,840	72	0%	1 & 3 person	70	10	22	2	11 miles
Greensboro	Curbside	81,102	54,871	68	0%	1 & 2 person	27	3	23	1.8	8 miles
Greenville	Curbside and backyard	38,806	27,888	32	0%	3 person	24	8	0	1	5 miles
Hickory	Curbside	12,100	8,982	15	0%	1 & 2 person	3.75	1	4	2	5 miles
High Point	Curbside	35,936	27,235	40	0%	1 & 2 person	23	0	9	2	8 miles
Salisbury	Curbside	11,878	7,736	15	0%	2 person	7	6	0	1	9 miles
Wilmington	Curbside	31,395	22,475	36	0%	2 & 3 person	32	15	0	2	10 miles
Wilson	Curbside	17,650	18,000	17	0%	1 & 3 person	11	2	5	2	10 miles
Winston-Salem	Curbside	76,240	50,413	100	0%	1 & 3 person	94.15	16	9	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 affected 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)

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Apex contracts with Waste Industries for refuse collection, disposal, and recycling. Only the refuse collection is reflected on this page.

Residents pay $9.78 per month for collection. Refuse is collected once a week curbside, although backyard collection is provided for disabled customers at no additional charge. Residents receiving service are provided with one ninety-six-gallon container.

The contractor collects five days a week from different routes. Trash is trucked to the landfill.

The contractor collected 10,896 tons of residential refuse during FY 2012–13, at a cost of $87 per ton. The cost per ton does not include the disposal cost at the landfill.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Type of Equipment	Contractor
Size of Crews (most commonly used)	Contractor
Weekly Routes	NA
Average Distance to Disposal Site	NA
Average Daily Trips to Disposal Site	NA
Percentage of Service Contracted	100%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	12,036
Tons Collected	10,896.0
Monthly Service Fee	$9.78

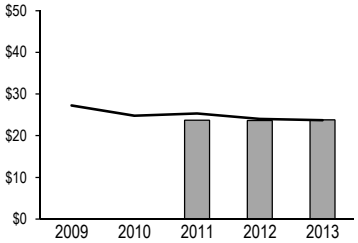
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$947,555
Capital Costs	$0
TOTAL	$947,555

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

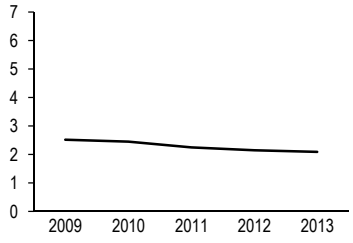
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Apex			$23.68	$23.63	$23.83
Average	$27.23	$24.79	$25.34	$23.99	$23.72

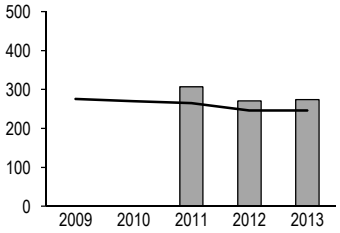
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex					
Average	2.52	2.46	2.25	2.16	2.09

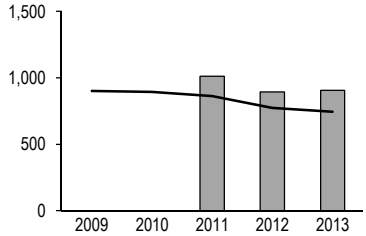
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Apex			307	271	274
Average	276	269	265	246	246

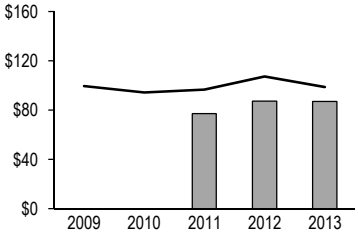
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Apex			1013	894	905
Average	902	894	862	773	744

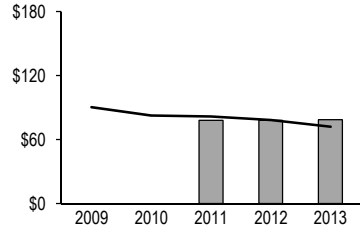
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



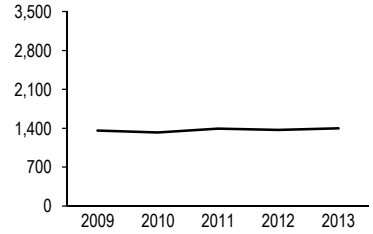
	2009	2010	2011	2012	2013
Apex			$77	$87	$87
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Apex			$78	$78	$79
Average	$90	$83	$82	$78	$72

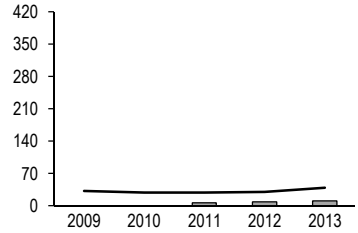
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Apex					
Average	1,362	1,325	1,392	1,372	1,401

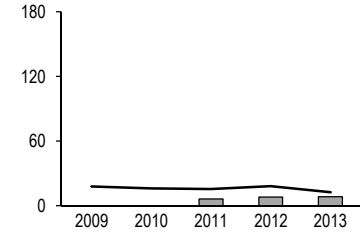
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Apex			6.8	8.6	10.4
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Apex			6.5	8.1	8.3
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Asheville collects residential refuse once a week at curbside, although backyard collection is provided for disabled customers at no charge and for other customers for a fee.

The city uses seven automated trucks, each with one driver, from Monday to Thursday working ten-hour days. Two rear packers with two- and three-person crews are used from Monday to Friday for the collection of bulky items, clean-ups, and streets not accessible by automated trucks.

There are thirty-three 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.

The city collected 22,184 tons of residential refuse during FY 2012–13, at a cost of $111 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. The transfer station is the primary disposal point for Asheville's trucks.

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.

Conditions Affecting Service, Performance, and Costs
Asheville is highly automated in the area of residential refuse collection.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Collection	14.0
FTE Positions—Other	3.0
Type of Equipment	7 automated packers 2 packer
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	33
Average Distance to Disposal Site	6 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	30,590
Tons Collected	22,184.0
Monthly Service Fee	No

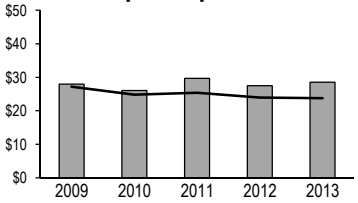
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	38.9%
Operating Costs	44.6%
Capital Costs	16.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$956,979
Operating Costs	$1,098,022
Capital Costs	$408,072
TOTAL	$2,463,073

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

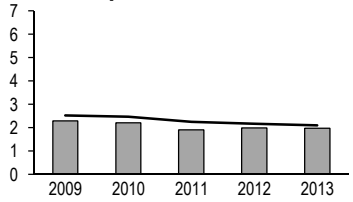
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Asheville	$27.93	$26.08	$29.67	$27.49	$28.57
Average	$27.23	$24.79	$25.34	$23.99	$23.72

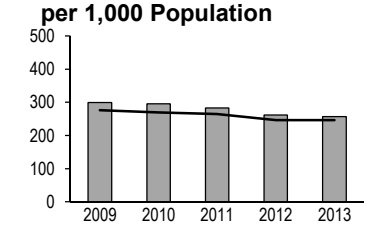
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	2.28	2.20	1.91	1.98	1.97
Average	2.52	2.46	2.25	2.16	2.09

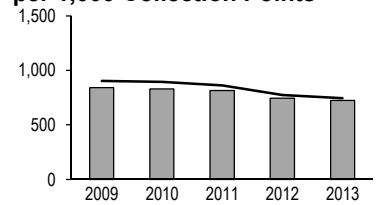
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	299.23	296	283	262	257
Average	276	269	265	246	246

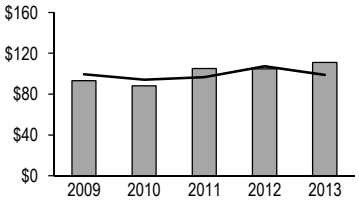
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Asheville	842	831	814	744	725
Average	902	894	862	773	744

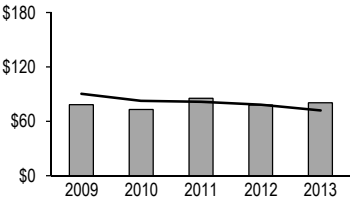
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



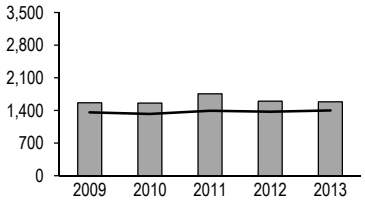
	2009	2010	2011	2012	2013
Asheville	$93	$88	$105	$105	$111
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Asheville	$79	$73	$85	$78	$81
Average	$90	$83	$82	$78	$72

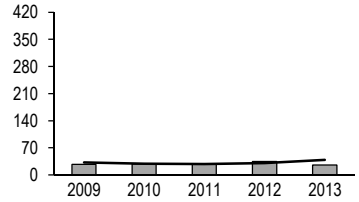
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Asheville	1,566	1,562	1,758	1,603	1,585
Average	1,362	1,325	1,392	1,372	1,401

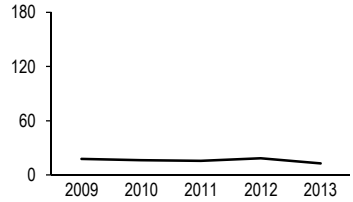
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Asheville	27.3	28.2	29.2	34.4	25.3
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Asheville					
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Burlington collects residential refuse once a week at curbside, although backyard collection is provided if it is medically necessary.

The city uses four automated trucks, each 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.

The city collected 12,142 tons of residential refuse during FY 2012–13, at a cost of $102 per ton. The cost per ton does not include the disposal cost per ton of $38 at the landfill.

Residents receiving automated service are provided with one container. Residents pay a monthly fee of $6 for refuse collection.

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.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Collection	6.0
FTE Positions—Other	1.0
Type of Equipment	4 automated packers 3 packers
Size of Crews (most commonly used)	1 person
Weekly Routes	20
Average Distance to Disposal Site	17 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	17,466
Tons Collected	12,142.0
Monthly Service Fee	$6.00

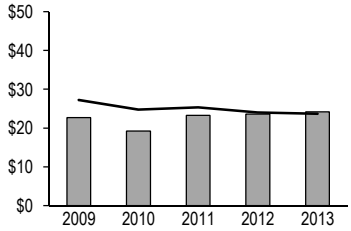
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	38.6%
Operating Costs	39.8%
Capital Costs	21.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$478,783
Operating Costs	$493,783
Capital Costs	$266,781
TOTAL	$1,239,347

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

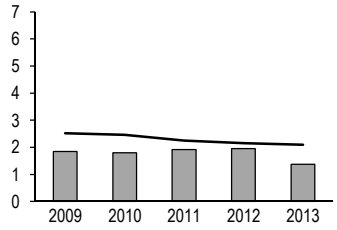
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Burlington	$22.74	$19.28	$23.27	$23.60	$24.21
Average	$27.23	$24.79	$25.34	$23.99	$23.72

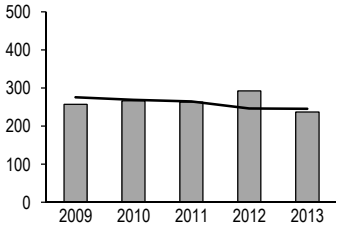
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	1.85	1.80	1.91	1.95	1.37
Average	2.52	2.46	2.25	2.16	2.09

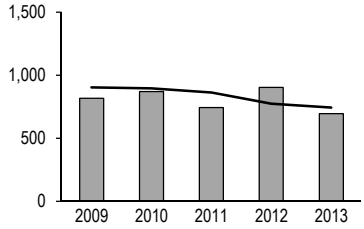
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	258	267	263	293	237
Average	276	269	265	246	246

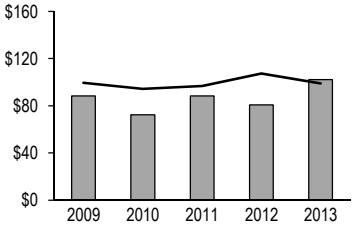
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Burlington	816	869	744	902	695
Average	902	894	862	773	744

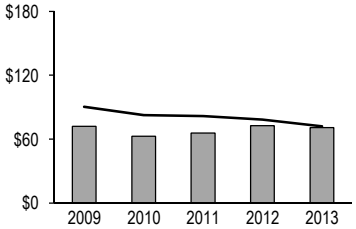
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



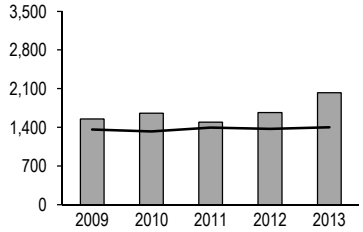
	2009	2010	2011	2012	2013
Burlington	$88	$72	$88	$81	$102
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Burlington	$72	$63	$66	$73	$71
Average	$90	$83	$82	$78	$72

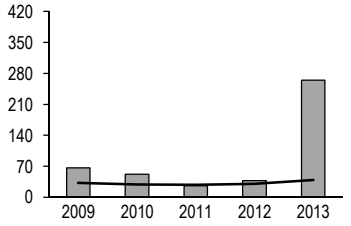
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Burlington	1,552	1,658	1,493	1,667	2,024
Average	1,362	1,325	1,392	1,372	1,401

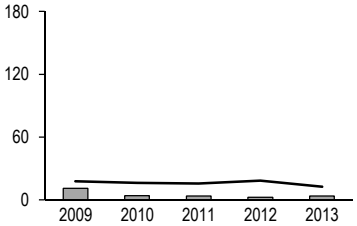
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Burlington	66.3	52.2	26.2	37.3	264.5
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Burlington	10.8	4.1	3.6	2.4	3.6
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Cary residential refuse collection began making major changes during FY 2005–06, moving from backyard collection to curbside and transitioning to automation by the start of FY 2006–07. The town charges a fee of $15.00 per month, covering both solid waste and recycling services.

Cary used ten automated trucks, each with one driver, and two rear loaders, each with one driver and three collectors. A total of forty-eight collection routes were used during FY 2012–13. The average distance to the landfill was twenty miles, with each route averaging one trip per day.

The town collected 29,206 tons of residential refuse during FY 2012–13, at a cost of $150 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

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Collection	28.0
FTE Positions—Other	1.2
Type of Equipment	10 automated packers 2 packers
Size of Crews (most commonly used)	1 & 4 person
Weekly Routes	48
Average Distance to Disposal Site	20 miles
Average Daily Trips to Disposal Site	1
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	45,091
Tons Collected	29,206.0
Monthly Service Fee	$15.00

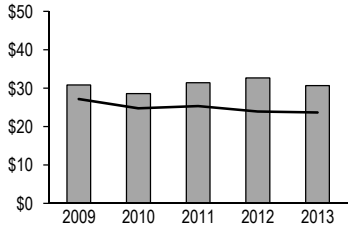
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	44.8%
Operating Costs	39.0%
Capital Costs	16.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,956,528
Operating Costs	$1,705,852
Capital Costs	$706,324
TOTAL	$4,368,704

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

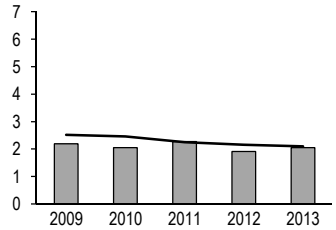
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Cary	$30.88	$28.61	$31.46	$32.69	$30.68
Average	$27.23	$24.79	$25.34	$23.99	$23.72

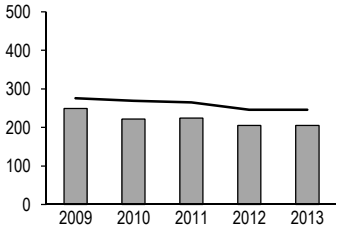
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	2.19	2.05	2.28	1.92	2.05
Average	2.52	2.46	2.25	2.16	2.09

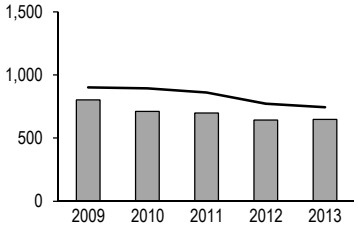
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Cary	249	222	224	205	205
Average	276	269	265	246	246

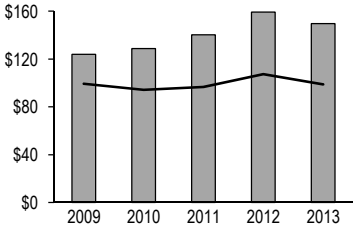
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Cary	803	711	700	642	648
Average	902	894	862	773	744

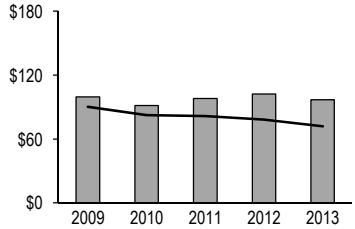
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



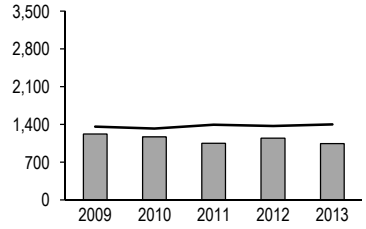
	2009	2010	2011	2012	2013
Cary	$124	$129	$140	$159	$150
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Cary	$100	$92	$98	$102	$97
Average	$90	$83	$82	$78	$72

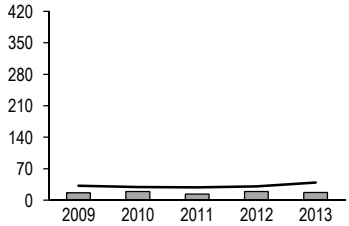
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Cary	1,223	1,168	1,054	1,143	1,043
Average	1,362	1,325	1,392	1,372	1,401

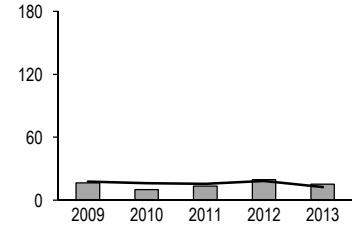
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Cary	16.3	19.3	13.4	19.6	17.1
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Cary	16.3	10.0	13.4	19.6	15.2
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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.

The city's residential refuse collection program was reorganized from its previous system of managed competition, which had some contracted collection and some city collection. Starting in FY 2010–11, all of Charlotte's residential refuse has been collected by city workers. The city's collection routes were changed so that in FY 2010–11 approximately 80 percent of the collection points had service day changes at the start of the year.

City crews are composed primarily of one driver each, operating an automated packer. There were fifty-seven of these crews for FY 2012–13. In addition, three crews, each 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, each composed of one driver and one laborer, using rear loaders. Costs include reserve crews that were used as needed throughout the year.

The city serviced 320 daily collection routes once each week during FY 2012–13, with an average of 1.5 trips to the landfill per day per route at an average one-way distance of thirteen 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 171,820 tons of residential refuse during the fiscal year, at a cost of $86 per ton. The cost per ton does not include the disposal cost of $29, representing the landfill tipping fee.

Conditions Affecting Service, Performance, and Costs
Charlotte is highly automated in the area of residential refuse collection. It considers all complaints to be valid complaints.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	80.0
FTE Positions—Other	6.0
Type of Equipment	57 automated packers 7 packers
Size of Crews (most commonly used)	1 & 2 person
Weekly Routes	320
Average Distance to Disposal Site	13 miles
Average Daily Trips to Disposal Site	1.5
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	214,016
Tons Collected	171,182.0
Monthly Service Fee	No

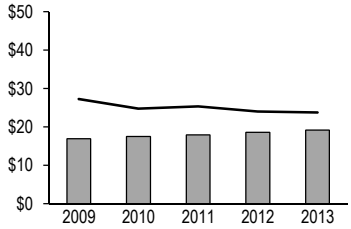
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	32.1%
Operating Costs	50.1%
Capital Costs	17.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,710,055
Operating Costs	$7,345,024
Capital Costs	$2,613,664
TOTAL	$14,668,743

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

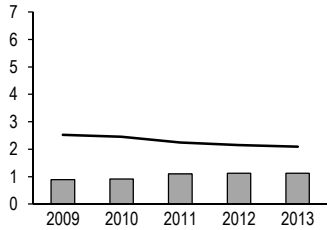
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Charlotte	$16.89	$17.53	$17.96	$18.60	$19.16
Average	$27.23	$24.79	$25.34	$23.99	$23.72

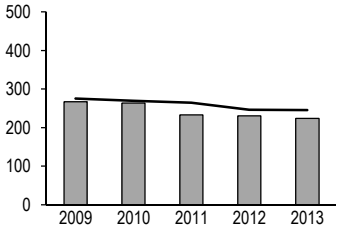
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	0.89	0.91	1.10	1.12	1.12
Average	2.52	2.46	2.25	2.16	2.09

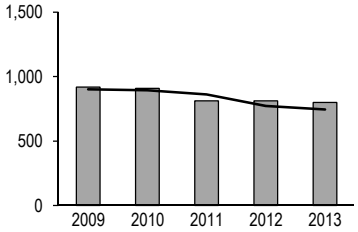
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Charlotte	267	264	233	230	224
Average	276	269	265	246	246

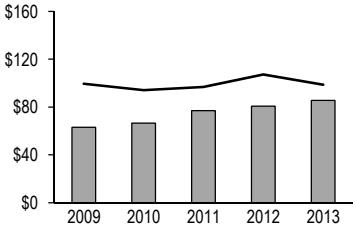
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	919	910	813	813	800
Average	902	894	862	773	744

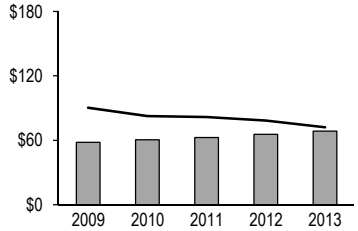
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



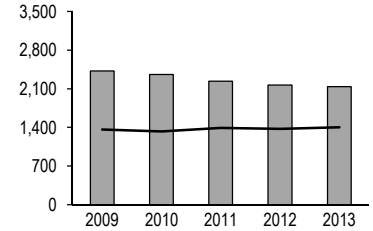
	2009	2010	2011	2012	2013
Charlotte	$63	$66	$77	$81	$86
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Charlotte	$58	$60	$63	$66	$69
Average	$90	$83	$82	$78	$72

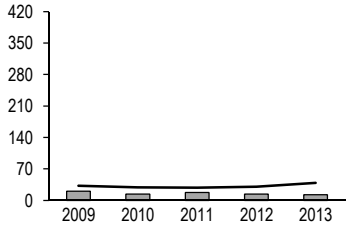
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Charlotte	2,423	2,359	2,235	2,165	2,140
Average	1,362	1,325	1,392	1,372	1,401

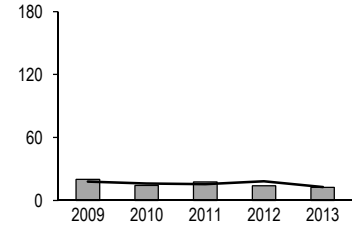
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	20.1	14.3	17.7	13.9	12.4
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	20.1	14.3	17.7	13.9	12.4
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 has provided residential refuse collection service under contract for many years, but it changed the contractor used in FY 2010–11. The cost of the contract for the year was approximately $1.73 million.

The contractor primarily used five automated packers, each with one person. Residents used one ninety-five-gallon cart, with extra carts available for larger families or unusual circumstances.

The city serviced twenty-five collection routes each week during FY 2012–13, with an average distance per route per day to the landfill of eight miles. The packers made an average of one trip to the landfill per day per route.

The contractor collected 22,298 tons of residential refuse during the fiscal year, at a cost of $89 per ton.

Conditions Affecting Service, Performance, and Costs
During FY 2011–2012, Concord switched contractors. This change in Concord's refuse collection process produced serveral challenges during the startup and transition periods. Complaints were up in the first three months due to errors by the contractor and because of customer actions. Valid complaints in the startup period were also notably up, as the contractor was not able to close complaints with proper notation. These problems were largely fixed after the initial three months.

Concord is one of only two jurisdictions participating in the benchmarking 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, as this reflects only municipal workers.

Concord's "total tons collected" includes bulk trash, which is collected along with residential refuse and cannot be separated for reporting purposes.

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.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	1.6
Type of Equipment	5 automated packers
Size of Crews (most commonly used)	1 person
Weekly Routes	25
Average Distance to Disposal Site	8 miles
Average Daily Trips to Disposal Site	1
Percentage of Service Contracted	100%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	28,524
Tons Collected	22,298.0
Monthly Service Fee	No

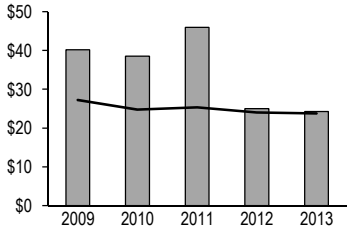
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	5.6%
Operating Costs	94.1%
Capital Costs	0.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$110,838
Operating Costs	$1,860,883
Capital Costs	$5,131
TOTAL	$1,976,852

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

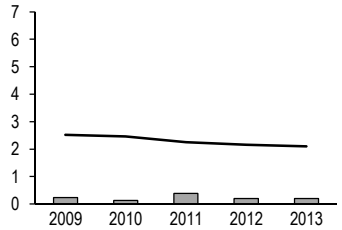
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Concord	$40.17	$38.54	$45.96	$25.02	$24.27
Average	$27.23	$24.79	$25.34	$23.99	$23.72

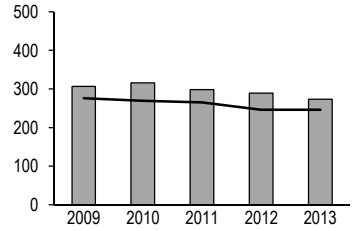
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	0.23	0.13	0.38	0.20	0.20
Average	2.52	2.46	2.25	2.16	2.09

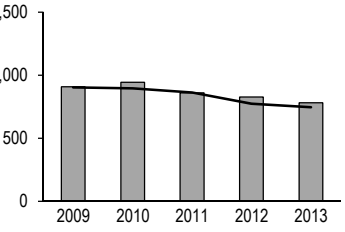
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Concord	307	316	299	289	274
Average	276	269	265	246	246

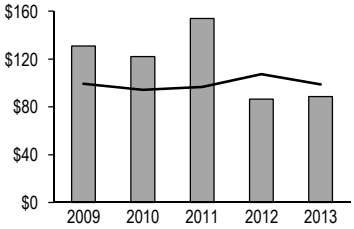
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Concord	908	942	858	825	782
Average	902	894	862	773	744

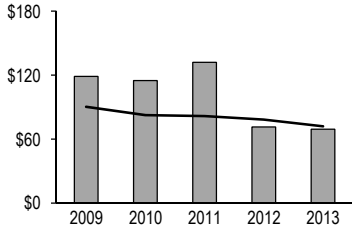
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



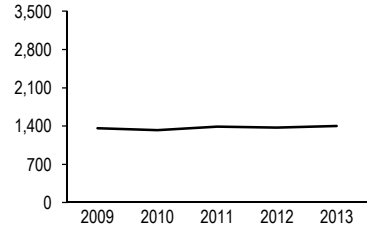
	2009	2010	2011	2012	2013
Concord	$131	$122	$154	$87	$89
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Concord	$119	$115	$132	$72	$69
Average	$90	$83	$82	$78	$72

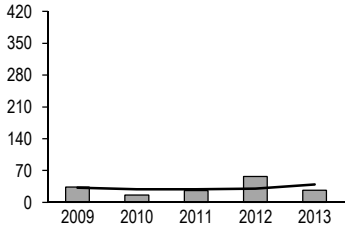
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Concord					
Average	1,362	1,325	1,392	1,372	1,401

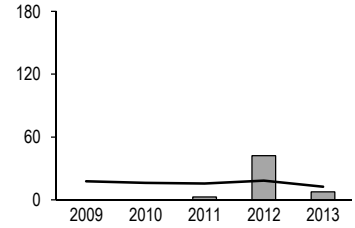
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Concord	33.4	15.9	25.8	56.9	26.7
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Concord			2.5	42.2	7.5
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 a monthly fee of $1.80 for residential refuse collecttion.

The city used eighteen crews during FY 2012–13. Five crews were composed of one driver and two collectors using rear-loading packers. Twelve one-person crews operated automated loaders. One two-person crew serviced the downtown route. Residents use one to four ninety-six-gallon rollout carts.

The city serviced seventy-two collection routes each week during FY 2012–13, with an average distance per residential refuse collection route per day to the landfill of eight miles. The packers made an average of one trip to the landfill per day per route.

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.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12 accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Positions—Collection	70.0
FTE Positions—Other	3.0
Type of Equipment	12 automated packers 6 packers
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	72
Average Distance to Disposal Site	11 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	70,287
Tons Collected	46,840.0
Monthly Service Fee	$1.80

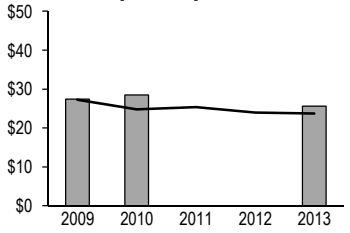
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	44.0%
Operating Costs	30.9%
Capital Costs	25.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,667,685
Operating Costs	$1,875,573
Capital Costs	$1,519,851
TOTAL	$6,063,109

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

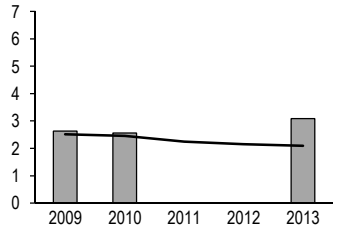
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Durham	$27.39	$28.51			$25.63
Average	$27.23	$24.79	$25.34	$23.99	$23.72

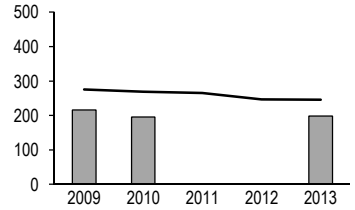
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	2.63	2.56			3.09
Average	2.52	2.46	2.25	2.16	2.09

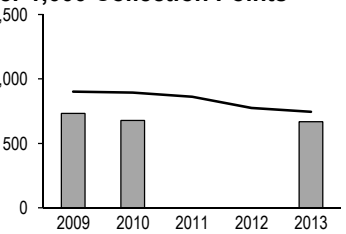
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Durham	216	195			198
Average	276	269	265	246	246

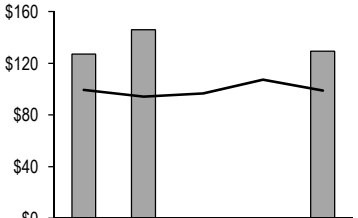
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Durham	732	677			666
Average	902	894	862	773	744

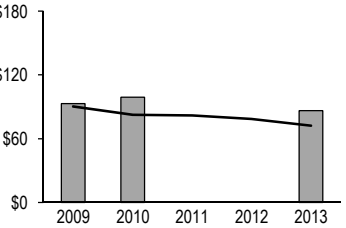
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Durham	$127	$146			$129
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



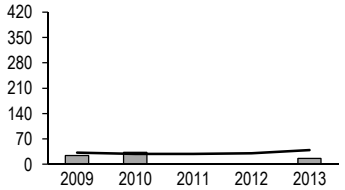
	2009	2010	2011	2012	2013
Durham	$93	$99			$86
Average	$90	$83	$82	$78	$72

Refuse Tons Collected per Municipal Collection FTE

	2009	2010	2011	2012	2013
Durham	865	802			669
Average	1,362	1,325	1,392	1,372	1,401

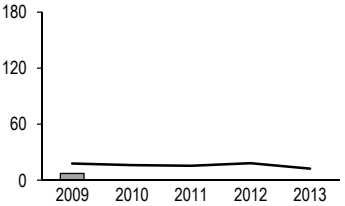
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Durham	24.1	33.0			15.9
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Durham	7.2				0.5
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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. Currently there is no fee for residential collection or refuse.

There were nineteen city crews for FY 2012–13. Sixteen crews each have one driver operating an automated packer. Three crews use rear loaders.

The city used sixty-eight collection routes during the fiscal year, with each packer making an average of 1.8 trips per day to a municipal solid waste transfer station and the travel distance averaging eight miles.

The city collected 54,871 tons of residential refuse during FY 2012–13, at a cost of $70 per ton.

Greensboro defines automated packers as one-armed automated-loading packers that are operated by one person. Rear loaders are rear-loading packer trucks.

Conditions Affecting Service, Performance, and Costs
Greensboro is highly automated in the area of residential refuse collection.

Prior to FY 2008–09, Greensboro's total tons collected included bulk trash, which was collected along with residential refuse and could not be separated for reporting purposes. However, these bulk collections have not been included in more recent years.

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Collection	27.0
FTE Positions—Other	4.0
Type of Equipment	16 automated packers 3 packers
Size of Crews (most commonly used)	1 & 2 person
Weekly Routes	68
Average Distance to Disposal Site	8 miles
Average Daily Trips to Disposal Site	1.8
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	81,102
Tons Collected	54,871.0
Monthly Service Fee	No

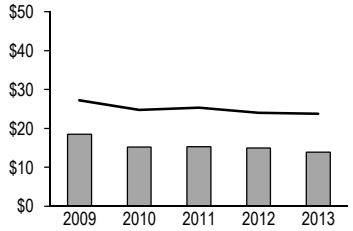
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	29.3%
Operating Costs	70.7%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,118,259
Operating Costs	$2,702,859
Capital Costs	$0
TOTAL	$3,821,118

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

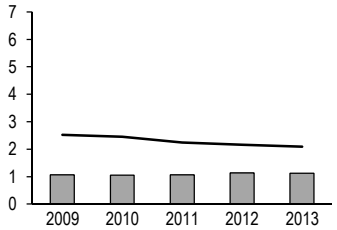
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Greensboro	$18.47	$15.18	$15.32	$14.92	$13.89
Average	$27.23	$24.79	$25.34	$23.99	$23.72

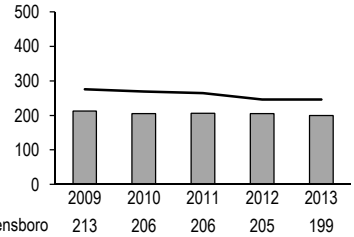
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.07	1.05	1.06	1.14	1.13
Average	2.52	2.46	2.25	2.16	2.09

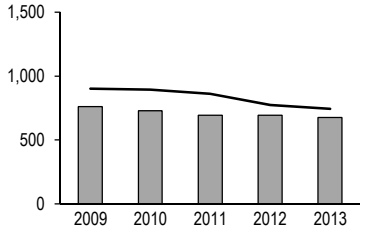
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	213	206	206	205	199
Average	276	269	265	246	246

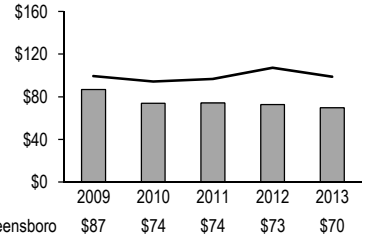
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	761	728	694	693	677
Average	902	894	862	773	744

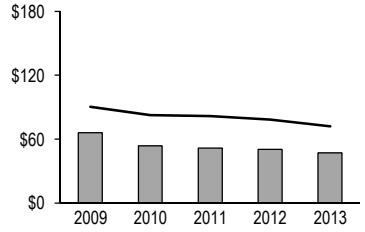
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



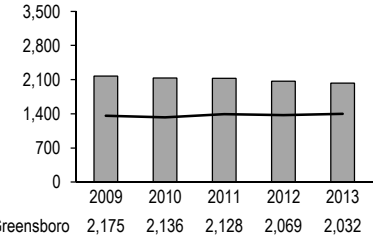
	2009	2010	2011	2012	2013
Greensboro	$87	$74	$74	$73	$70
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Greensboro	$66	$54	$52	$50	$47
Average	$90	$83	$82	$78	$72

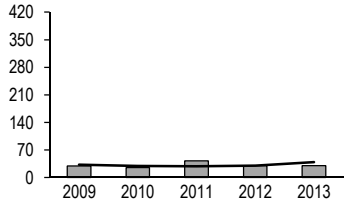
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Greensboro	2,175	2,136	2,128	2,069	2,032
Average	1,362	1,325	1,392	1,372	1,401

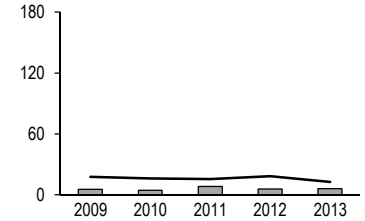
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	29.6	25.4	42.2	29.7	30.0
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	5.5	4.5	8.2	5.9	6.0
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 $42.30 per month, while curbside is priced at $13.25 per month. Most residents have chosen curbside. White goods and electronic reclying curbside is included in the residential refuse fee.

The city uses eight crews, each composed of one driver and two collection workers who work four days a week. The crews use rear-loading collection trucks.

Thirty-two collection routes were used during FY 2012–13, with an average of one trip to the transfer station per day per route. The average distance to the transfer station per route was five-and-a-half miles.

Greenville collected 27,888 tons of residential refuse during FY 2012–13, at a cost of $93 per ton. The cost per ton does not include the disposal cost of $33.26, representing the tipping fee at the transfer station.

Conditions Affecting Service, Performance, and Costs
Greenville joined the project with the first year of reporting for FY 2008–09.

The apparent drop in the data in the graphs which look at tons collected is due to reporting improvements. In earlier years, Greenville could not easily separate out refuse collected from multi-family units. Improvements in what the county landfill is able to track and report back to the city mean that the most recent year includes just single-family units.

Greenville was the only municipality participating in this benchmarking project that continues to collect residential refuse from the backyard for many customers. This is a relatively labor-intensive process and represents a high level of service.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Collection	24.0
FTE Positions—Other	1.0
Type of Equipment	8 packers
Size of Crews (most commonly used)	3 person
Weekly Routes	32
Average Distance to Disposal Site	5 miles
Average Daily Trips to Disposal Site	1
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside and backyard
Residential Customers (number represents collection points)	38,806
Tons Collected	27,888.0
Monthly Service Fee	$13.23 Curbside $42.30 Backyard

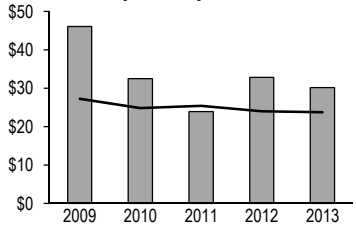
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	56.5%
Operating Costs	31.6%
Capital Costs	11.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,466,391
Operating Costs	$820,612
Capital Costs	$309,465
TOTAL	$2,596,468

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

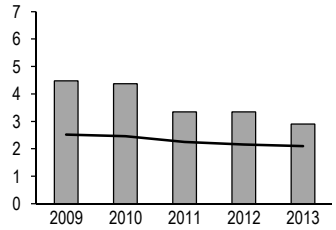
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Greenville	$46.03	$32.48	$23.86	$32.77	$30.14
Average	$27.23	$24.79	$25.34	$23.99	$23.72

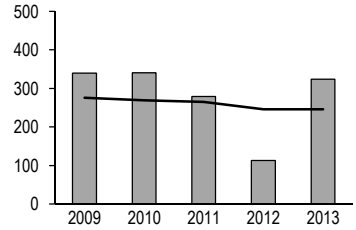
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	4.48	4.37	3.35	3.35	2.90
Average	2.52	2.46	2.25	2.16	2.09

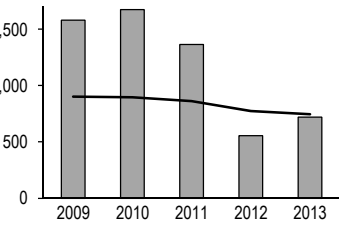
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	340	340	279	114	324
Average	276	269	265	246	246

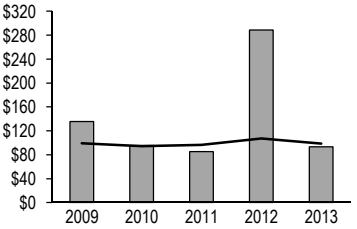
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greenville	1580	1673	1364	554	719
Average	902	894	862	773	744

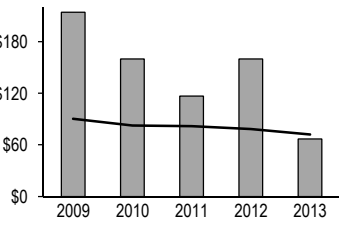
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



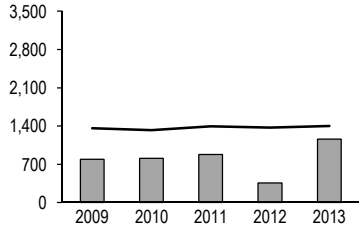
	2009	2010	2011	2012	2013
Greenville	$135	$95	$85	$288	$93
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Greenville	$214	$160	$117	$160	$67
Average	$90	$83	$82	$78	$72

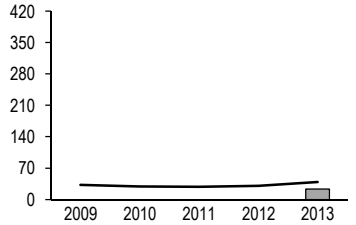
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Greenville	791	810	881	358	1,162
Average	1,362	1,325	1,392	1,372	1,401

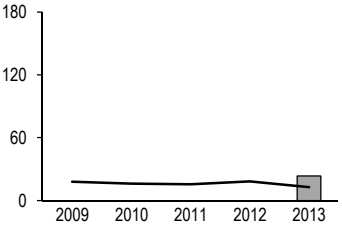
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greenville					23.6
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greenville					23.6
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 $14 per cart was charged for residential refuse collection service during FY 2012–13. 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.

The city used four one-person crews operating automated packers, with three of these trucks running full-time and one one-fourth of the time. A regular packer truck with one driver and one crew member works about half-time collecting on one-way streets and dead ends.

Fifteen collection routes were used during FY 2012–13, 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.

Hickory collected 8,982 tons of residential refuse during FY 2012–13, at a cost of $65 per ton. The cost per ton does not include the disposal cost of $33, representing the tipping fee at the Catawba County landfill.

Hickory defines automated packers as trucks with mechanical arms.

Conditions Affecting Service, Performance, and Costs
Hickory is highly automated in the area of residential refuse collection.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Positions—Collection	3.75
FTE Positions—Other	0.49
Type of Equipment	4 automated packers 1 packer
Size of Crews (most commonly used)	1 & 2 person
Weekly Routes	15
Average Distance to Disposal Site	5 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	12,100
Tons Collected	8,982.0
Monthly Service Fee	$14.00 per cart

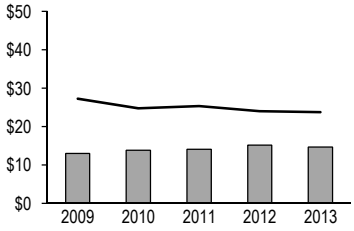
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	31.4%
Operating Costs	32.9%
Capital Costs	35.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$184,298
Operating Costs	$193,310
Capital Costs	$209,244
TOTAL	$586,852

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

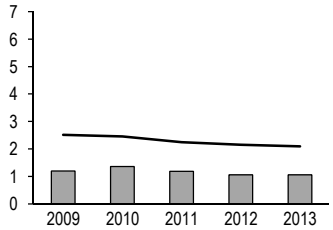
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Hickory	$13.01	$13.82	$14.12	$15.22	$14.66
Average	$27.23	$24.79	$25.34	$23.99	$23.72

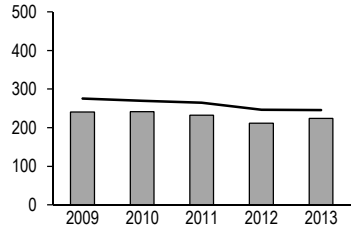
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	1.19	1.36	1.18	1.06	1.06
Average	2.52	2.46	2.25	2.16	2.09

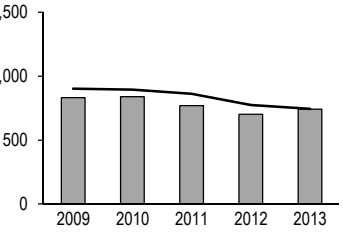
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	241	242	232	212	224
Average	276	269	265	246	246

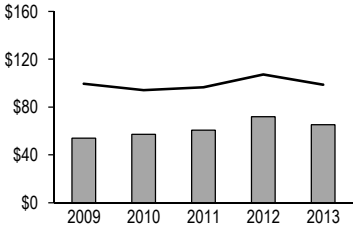
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Hickory	833	839	769	702	742
Average	902	894	862	773	744

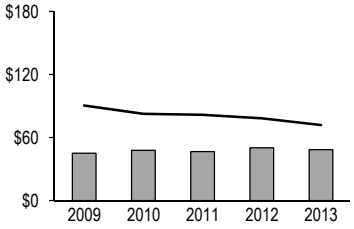
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



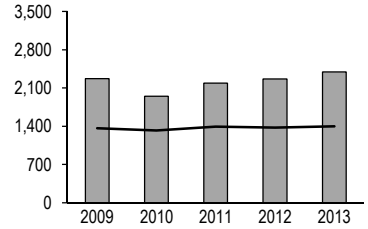
	2009	2010	2011	2012	2013
Hickory	$54	$57	$61	$72	$65
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Hickory	$45	$48	$47	$50	$49
Average	$90	$83	$82	$78	$72

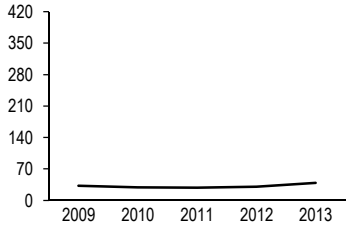
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Hickory	2,273	1,946	2,190	2,264	2,395
Average	1,362	1,325	1,392	1,372	1,401

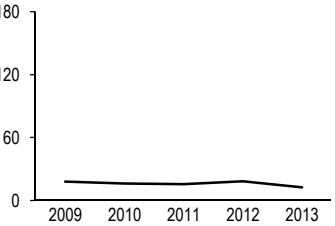
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Hickory					
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Hickory					
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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. There currently is no fee for residential refuse collection.

The city primarily collects residential refuse with nine automated trucks, each with one person. There are forty 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.

The city collected 27,235 tons of residential refuse during FY 2012–13, at a cost of $75 per ton. The cost per ton does not include the disposal cost of $26, representing the landfill tipping fee.

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.

Conditions Affecting Service, Performance, and Costs

High Point is now fully automated in its pickups, other than those involving special needs.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720

Service Profile

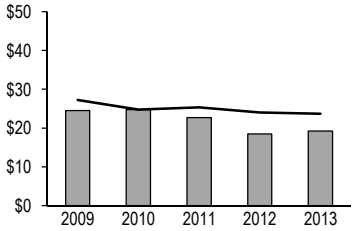
FTE Positions—Collection	23.0
FTE Positions—Other	3.0
Type of Equipment	9 automated packers 3 special
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	40
Average Distance to Disposal Site	8 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	35,936
Tons Collected	27,235.0
Monthly Service Fee	No

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	40.8%
Operating Costs	36.0%
Capital Costs	23.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$833,177
Operating Costs	$735,487
Capital Costs	$474,062
TOTAL	$2,042,726

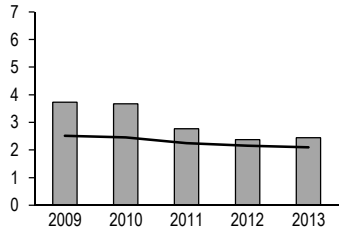
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
High Point	$24.55	$24.80	$22.73	$18.49	$19.20
Average	$27.23	$24.79	$25.34	$23.99	$23.72

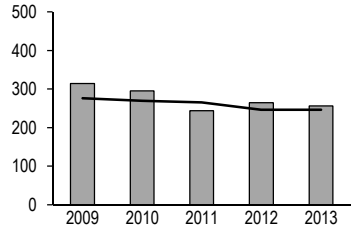
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	3.73	3.67	2.77	2.37	2.44
Average	2.52	2.46	2.25	2.16	2.09

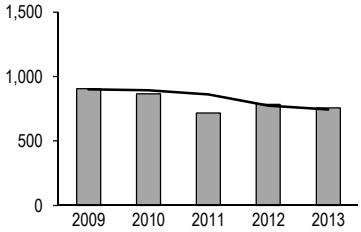
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
High Point	314	295	243	264	256
Average	276	269	265	246	246

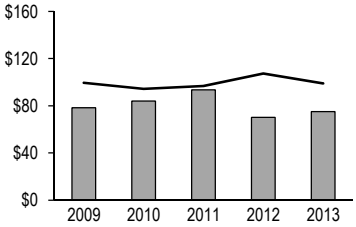
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
High Point	907	866	717	784	758
Average	902	894	862	773	744

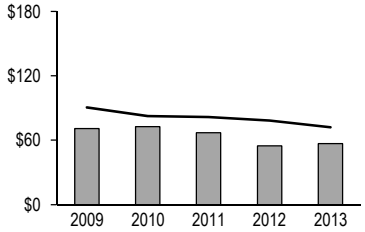
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



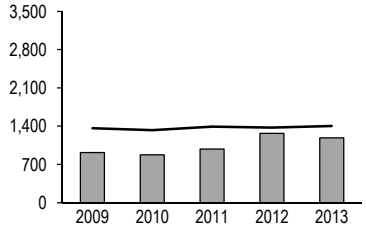
	2009	2010	2011	2012	2013
High Point	$78	$84	$93	$70	$75
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
High Point	$71	$73	$67	$55	$57
Average	$90	$83	$82	$78	$72

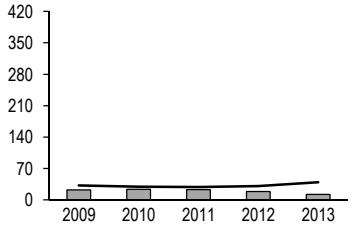
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
High Point	915	874	980	1,266	1,184
Average	1,362	1,325	1,392	1,372	1,401

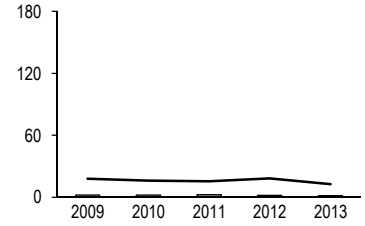
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
High Point	22.3	23.1	22.7	18.1	12.0
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
High Point	2.1	2.3	2.4	1.8	1.5
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 $7 for residential collection and $4.09 for disposal.

The city employed three crews during FY 2012–13 with two persons on each crew. Fifteen collection routes were used, with an average of one nine-mile trip per route per day to the landfill.

Each resident has one ninety-six-gallon roll-out cart provided and paid for by the city. A second cart may be obtained. The city collected 7,736 tons of residential refuse during FY 2012–13, at a cost per ton of $108. Not included in the cost per ton was a $34 landfill tipping fee.

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.

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.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Collection	7.0
FTE Positions—Other	1.0
Type of Equipment	6 packers
Size of Crews (most commonly used)	2 person
Weekly Routes	15
Average Distance to Disposal Site	9 miles
Average Daily Trips to Disposal Site	1
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	11,878
Tons Collected	7,736.0
Monthly Service Fee	$11.09

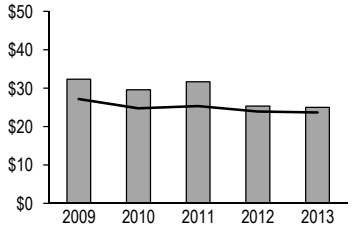
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	53.1%
Operating Costs	28.1%
Capital Costs	18.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$444,405
Operating Costs	$235,008
Capital Costs	$158,236
TOTAL	$837,649

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

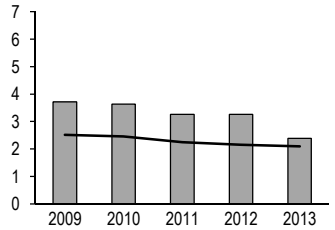
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Salisbury	$32.35	$29.66	$31.69	$25.34	$25.05
Average	$27.23	$24.79	$25.34	$23.99	$23.72

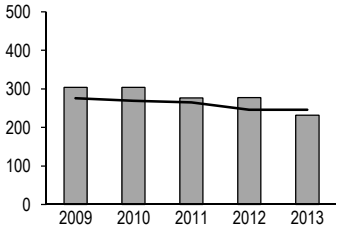
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	3.72	3.64	3.26	3.26	2.39
Average	2.52	2.46	2.25	2.16	2.09

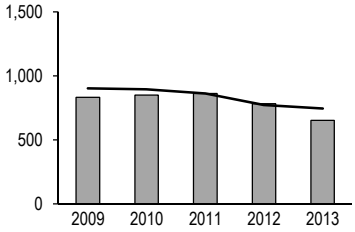
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	304	304	276	278	231
Average	276	269	265	246	246

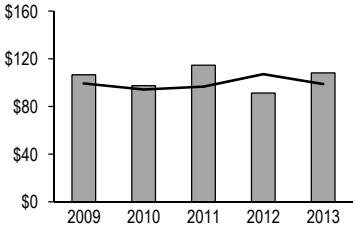
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	833	850	862	782	651
Average	902	894	862	773	744

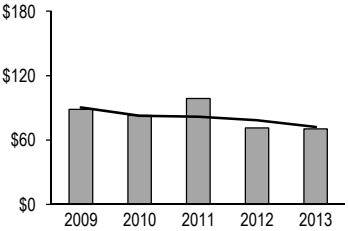
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



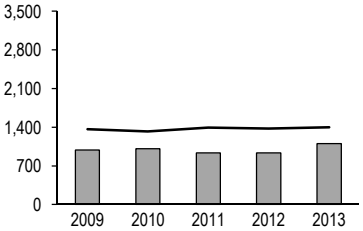
	2009	2010	2011	2012	2013
Salisbury	$107	$98	$115	$91	$108
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Salisbury	$89	$83	$99	$71	$71
Average	$90	$83	$82	$78	$72

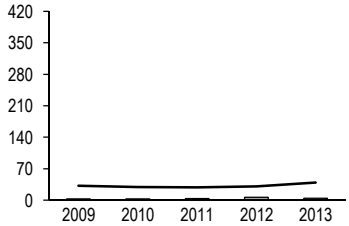
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Salisbury	987	1,011	932	935	1,105
Average	1,362	1,325	1,392	1,372	1,401

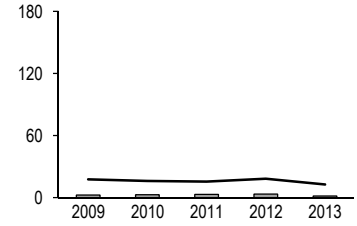
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	2.6	2.7	3.2	6.3	4.2
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	2.6	2.7	3.2	3.3	1.7
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

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 $24.80 for ninety-five-gallon carts and $20.15 for thirty-five-gallon carts during FY 2012–13.

During FY 2012–13, Wilmington used nine crews of one driver and two collectors each and four crews with one driver and one collector each. All crews use semi-automated packer trucks.

Thirty-six collection routes were used during FY 2012–13, with an average of two trips per route per day to the landfill. The average distance to the landfill was nine-and-one-half miles. The city collected 22,475 tons of residential refuse during FY 2012–13, at a cost of $130 per ton. The cost per ton does not include the disposal cost of $59 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.

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income U.S. Census 2010	$57,892

Service Profile

FTE Positions—Collection	32.0
FTE Positions—Other	1.0
Type of Equipment	13 packers
Size of Crews (most commonly used)	2 & 3 person
Weekly Routes	36
Average Distance to Disposal Site	10 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	31,395
Tons Collected	22,475.0
Monthly Service Fee	$24.80 for Maxi $20.15 for Mini

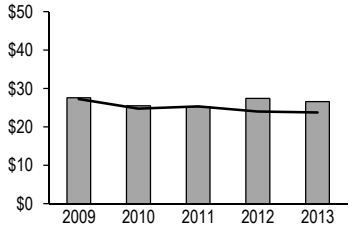
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	48.0%
Operating Costs	40.9%
Capital Costs	11.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,401,453
Operating Costs	$1,194,220
Capital Costs	$322,769
TOTAL	$2,918,442

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

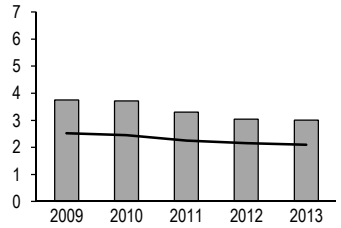
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Wilmington	$27.55	$25.49	$25.29	$27.41	$26.61
Average	$27.23	$24.79	$25.34	$23.99	$23.72

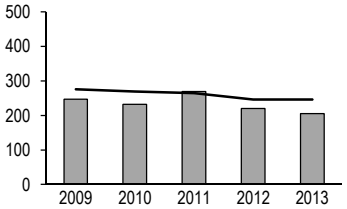
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	3.75	3.72	3.30	3.05	3.01
Average	2.52	2.46	2.25	2.16	2.09

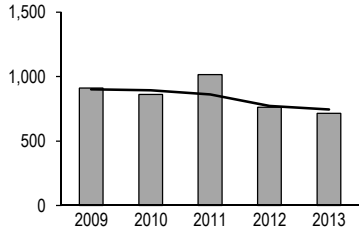
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	247	232	270	220	205
Average	276	269	265	246	246

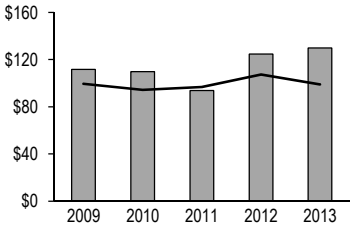
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	911	861	1016	762	716
Average	902	894	862	773	744

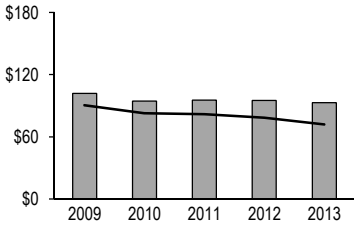
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



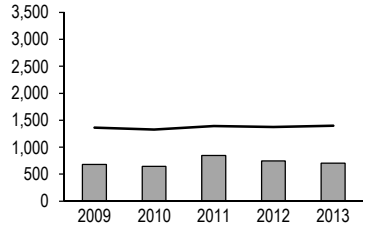
	2009	2010	2011	2012	2013
Wilmington	$112	$110	$94	$125	$130
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Wilmington	$102	$94	$95	$95	$93
Average	$90	$83	$82	$78	$72

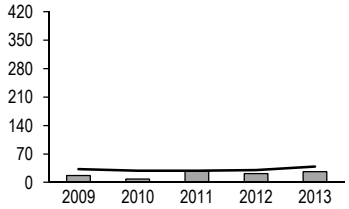
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Wilmington	680	645	848	744	702
Average	1,362	1,325	1,392	1,372	1,401

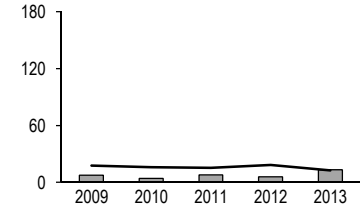
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	16.6	8.6	28.4	21.6	26.5
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	7.5	4.1	7.8	5.8	13.3
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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 $17.50 fee per household for residential refuse collection service.

During FY 2012–13, the city used five one-person crews working from automated packers. The city also used two three-person crews, each composed of one driver and two collectors working from semi-automated rear loaders. Residents are required to use ninety-six-gallon roll-out containers.

The city serviced seventeen collection routes each week during FY 2012–13. 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.

Wilson collected 18,000 tons of residential refuse during the fiscal year, at a cost of $64 per ton. The cost per ton does not include the disposal cost of $37.72, representing the tipping fee at the transfer station.

Wilson defines automated packers as fully automated trucks requiring one driver. Packers are rear-loading, semi-automated trucks requiring one driver and two collectors.

Conditions Affecting Service, Performance, and Costs
The city of Wilson considers all complaints to be valid complaints.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Collection	11.0
FTE Positions—Other	1.0
Type of Equipment	5 automated packers 2 packers
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	17
Average Distance to Disposal Site	10 miles
Average Daily Trips to Disposal Site	2
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	17,650
Tons Collected	18,000.0
Monthly Service Fee	$17.50

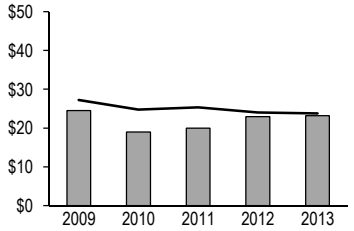
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	40.0%
Operating Costs	39.6%
Capital Costs	20.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$458,455
Operating Costs	$454,891
Capital Costs	$233,998
TOTAL	$1,147,344

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

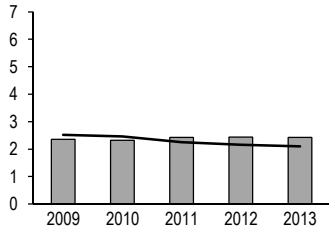
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Wilson	$24.51	$19.01	$20.00	$22.92	$23.21
Average	$27.23	$24.79	$25.34	$23.99	$23.72

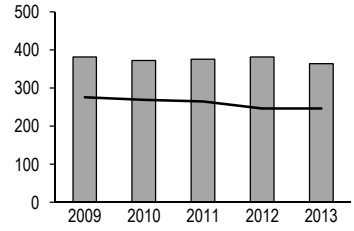
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	2.35	2.32	2.43	2.44	2.43
Average	2.52	2.46	2.25	2.16	2.09

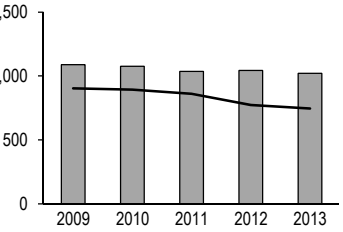
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	382	372	375	381	364
Average	276	269	265	246	246

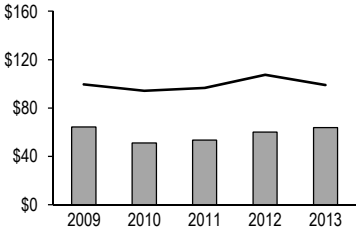
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	1089	1076	1036	1043	1020
Average	902	894	862	773	744

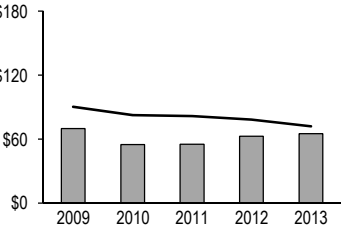
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



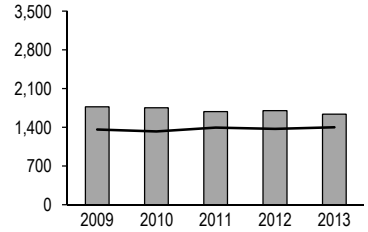
	2009	2010	2011	2012	2013
Wilson	$64	$51	$53	$60	$64
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Wilson	$70	$55	$55	$63	$65
Average	$90	$83	$82	$78	$72

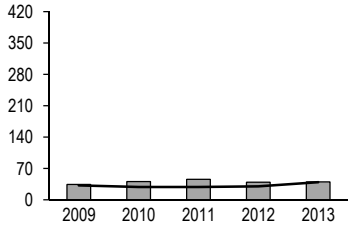
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Wilson	1,773	1,750	1,686	1,702	1,636
Average	1,362	1,325	1,392	1,372	1,401

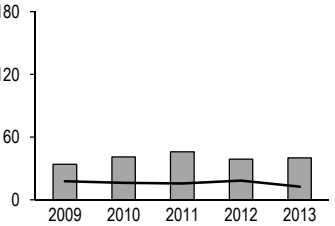
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	34.0	40.9	45.9	39.0	40.1
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	34.0	40.9	45.9	39.0	40.1
Average	17.8	16.2	15.5	18.3	12.6

Fiscal Year 2012–13

Explanatory Information

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. In October 2010, the city began the transition to mandatory curbside collection. The transition to a curbside only collection system was complete during FY 2011–2012.

The city uses sixteen three-person crews, each composed of a driver and two collectors equipped with rear-loading packers, to collect most of the residential refuse. In addition, there are nine automated trucks with one person each, one special collections truck with one person, and one central business district crew with one driver and one collector.

Residents may use three thirty-two-gallon containers or one ninety-six-gallon roll-out cart. There was no fee for the residential refuse service during FY 2012–13.

The city collected 50,413 tons of residential refuse during FY 2012–13 from 76,240 collection points. The cost per ton was $124, which does not include the tipping fee of $36 per ton. The city used 100 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.

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 is also located in the back of the truck.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	94.2
FTE Positions—Other	3.0
Type of Equipment	9 automated packers 16 packers
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	100
Average Distance to Disposal Site	10 miles
Average Daily Trips to Disposal Site	1
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	76,240
Tons Collected	50,413.0
Monthly Service Fee	No

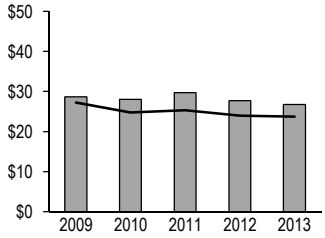
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	53.5%
Operating Costs	32.7%
Capital Costs	13.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,339,513
Operating Costs	$2,041,062
Capital Costs	$864,026
TOTAL	$6,244,601

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

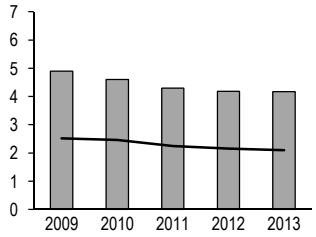
Resource Measures

Residential Refuse Collection Costs per Capita



	2009	2010	2011	2012	2013
Winston-Salem	$28.69	$28.01	$29.71	$27.72	$26.77
Average	$27.23	$24.79	$25.34	$23.99	$23.72

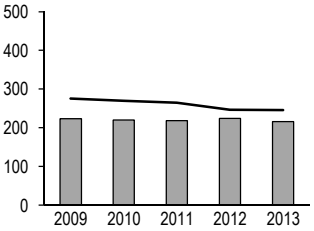
Residential Refuse FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	4.90	4.60	4.30	4.18	4.17
Average	2.52	2.46	2.25	2.16	2.09

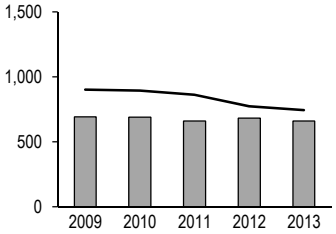
Workload Measures

Residential Refuse Tons per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	223	220	218	224	216
Average	276	269	265	246	246

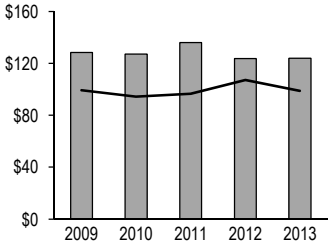
Residential Refuse Tons per 1,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	693	689	661	683	661
Average	902	894	862	773	744

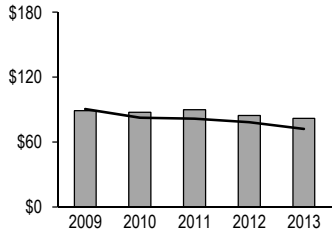
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



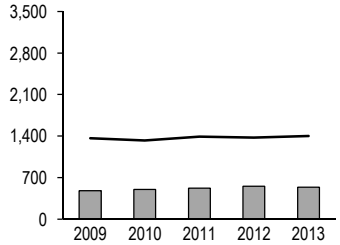
	2009	2010	2011	2012	2013
Winston-Salem	$128	$127	$136	$124	$124
Average	$99	$94	$97	$107	$99

Residential Refuse Collection Cost per Collection Point



	2009	2010	2011	2012	2013
Winston-Salem	$89	$88	$90	$84	$82
Average	$90	$83	$82	$78	$72

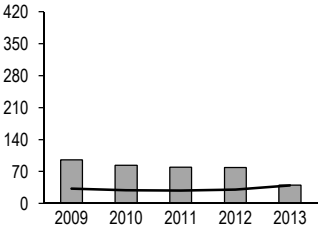
Refuse Tons Collected per Municipal Collection FTE



	2009	2010	2011	2012	2013
Winston-Salem	477	502	524	553	535
Average	1,362	1,325	1,392	1,372	1,401

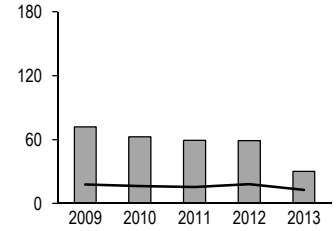
Effectiveness Measures

Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	95.7	83.6	79.1	78.4	40.0
Average	32.4	28.9	28.4	30.3	39.2

Valid Complaints per 1,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	71.8	62.7	59.3	58.8	30.0
Average	17.8	16.2	15.5	18.3	12.6

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Performance and Cost Data

HOUSEHOLD RECYCLING

PERFORMANCE MEASURES FOR HOUSEHOLD RECYCLING

SERVICE DEFINITION

This includes both curbside collection and processing of household recyclable materials from residences and certain other locations and the drop-off of such materials by citizens at recycling stations or centers. The recyclable materials collected are mainly aluminum and steel cans, plastics, glass bottles, newspapers, magazines, and cardboard. The curbside portion of this service involves regularly scheduled collection that utilizes containers small enough that residents and/or workers can move or lift them. Excluded are collection of yard waste, leaves, and commercial recycling.

NOTES ON PERFORMANCE MEASURES

1. Workload and Efficiency Measures

The same sorts of workload and efficiency measures are used for household recycling as for residential refuse collection. The project's workload measures for household recycling are tons of recyclable materials collected per 1,000 population and per 1,000 collection points, and the efficiency measures for this service are cost per ton of recyclable materials collected, cost per collection point, and tons of household recyclable materials collected per full-time equivalent (FTE) position directly involved in household recycling. FTEs for recycling are calculated in the same way as they are for residential refuse collection. Only those FTE positions that actually collect recyclables are used for the measure "tons collected per FTE."

2. Tons Solid Waste Landfilled per 1,000 Population

"Tons solid waste landfilled per 1,000 population" is used as a workload measure. Although not all residential refuse is recyclable, much more of it is likely to be recycled in the future as recycling technology improves and markets for recyclable materials grow. Thus, tons of solid waste landfilled per 1,000 population serves as a useful indicator of the need for household recycling.

3. Community Set-Out Rate in Household Recycling

The project uses this as a measure of household recycling effectiveness. Residents in municipalities with curbside recycling choose whether to participate in the program and decide the extent of their participation. As the portion of households participating in household recycling grows, the more effective recycling is likely to be in reducing the volume of residential refuse. This measure combines the set-out rate for those participating and the participation rate to estimate the percentage of potential households that are actually recycling.

4. Tons of Household Recyclable Materials Collected as a Percentage of the Sum of Tons of Residential Refuse Collected Plus Tons of Household Recyclable Materials Collected

This measure assesses the magnitude of household recycling in relation to residential refuse collected for disposal. A household recycling program is effective to the extent it diverts residential refuse from the disposal stream.

Household Recycling

Summary of Key Dimensions of Service

City or Town	Drop-Off Sites		Collection Frequency	Recyclables Sorted at Curb?	Collection Points	Community Set-Out Rate	Tons Collected	Percentage of Waste Stream Diverted from Landfill	Percentage Service Contracted	Municipal FTE Collection Positions
	City Owned	Other								
Apex	0	0	1 x week	No	12,408	75%	2,565	19%	100%	0
Asheville	0	2	1 x 2 weeks	Yes	28,204	84%	8,709	28%	99%	0
Burlington	0	3	1 x 2 weeks	Yes	16,723	56%	2,642	18%	100%	0
Cary	1	0	1 x 2 weeks	Yes	46,079	79%	11,398	28%	0%	12
Charlotte	0	13	1 x 2 weeks	Yes	210,781	50%	43,919	20%	100%	0
Concord	0	1	1 x 2 weeks	No	28,524	63%	5,732	20%	100%	0.5
Durham	1	0	1 x 2 weeks	Yes	70,287	85%	13,752	23%	0%	12
Greensboro	20	0	1 x 2 weeks	No	81,102	62%	18,163	25%	0%	15
Greenville	3	160	1 x week	No	15,708	na	5,101	15%	0%	12
Hickory	2	0	1 x week	Yes	12,100	78%	1,497	14%	80%	0.5
High Point	13	65	1 x 2 weeks	No	35,936	75%	9,018	25%	0%	4
Salisbury	0	10	1 x 2 weeks	No	10,500	52%	1,497	16%	100%	0
Wilmington	0	0	1 x 2 weeks	No	31,395	na	6,109	21%	0%	5
Wilson	0	0	1 x week	No	19,650	35%	1,485	8%	0%	6
Winston-Salem	11	0	1 x 2 weeks	Yes	76,064	45%	14,016	22%	100%	0

NOTES

Community Set-out Rate is a combination of the participation rate and the participant's set-out rate.

EXPLANATORY FACTORS

These are factors that the project found affected household recycling collection performance and cost in one or more of the municipalities:

Types of items eligible for recycling
Landfill tipping fees for solid waste
Commitment of city officials to recycling
Number of drop-off centers
Community education
Market prices for recyclable materials
Demographic makeup of community

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Apex contracts with Waste Industries for refuse collection, disposal, and recycling. Only the recycling collection is reflected on this page. The town offers curbside recycling to all residents. Residents pay a $2.37 fee per container per month.

The following materials are collected:

- plastics
- paperboard
- chipboard
- paper tubes
- corrugated cardboard
- aluminum
- tin and steel cans
- glass
- newspaper
- magazines and catelogs
- phone books.

Residents living within Apex are encouraged to participate in the curbside recycling program. The program serves 12,408 residences.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income	$97,201
U.S. Census 2010	

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Number of City Drop-Off Centers	0
Other Drop-Off Centers	0
Percentage of Service Contracted	100%
Collection Frequency	1 x week
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	12,408
Tons of Recyclables Collected	
Curbside	2,565
City Drop-Off Centers	0
Total Tons Collected	2,565
Monthly Service Fee	$2.37
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	NA

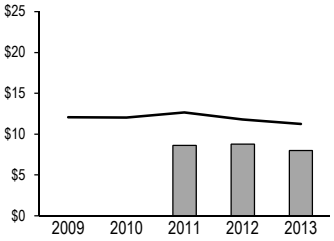
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$318,017
Capital Costs	$0
TOTAL	$318,017

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

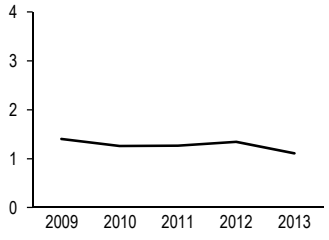
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Apex			$8.64	$8.76	$8.00
Average	$12.06	$12.04	$12.67	$11.78	$11.25

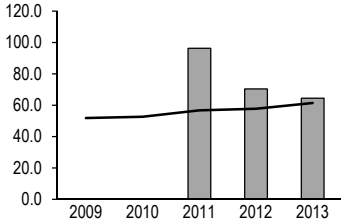
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex					
Average	1.40	1.26	1.26	1.34	1.11

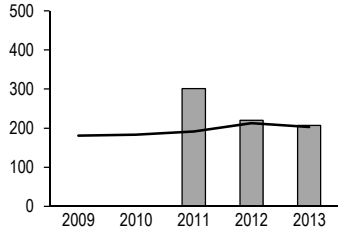
Workload Measures

Tons Recyclables Collected per 1,000 Population



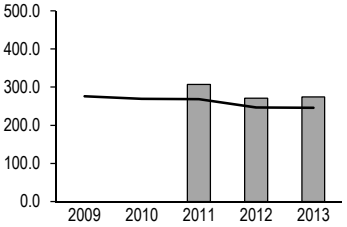
	2009	2010	2011	2012	2013
Apex			96.3	70.4	64.5
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Apex			301	220	207
Average	181	183	192	213	203

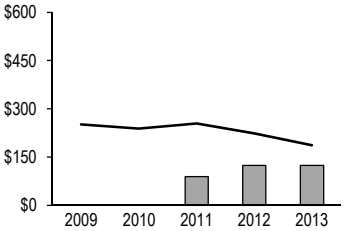
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Apex			306.8	270.8	274.0
Average	275.7	269.4	268.7	246.2	245.9

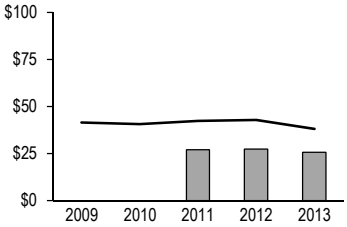
Efficiency Measures

Recycling Services Cost per Ton Collected



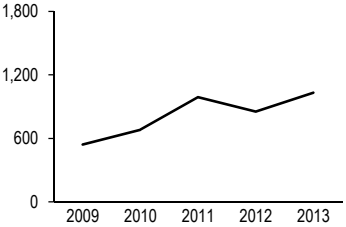
	2009	2010	2011	2012	2013
Apex			$90	$124	$124
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Apex			$26.98	$27.41	$25.63
Average	$41.41	$40.64	$42.23	$42.87	$37.97

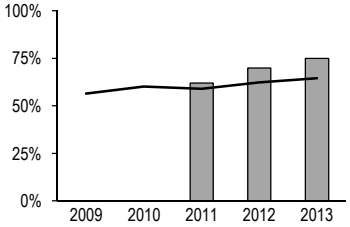
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Apex					
Average	541	681	991	854	1033

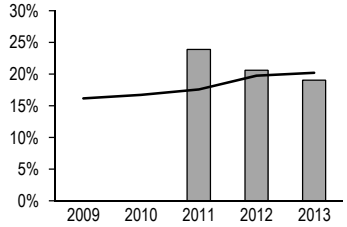
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Apex			62.0%	70.0%	75.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Apex			23.9%	20.6%	19.1%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The city offers curbside recycling service to all residential customers. The service was provided by contract during FY 2012–13 by Curbside Management Incorporated.

Asheville charged a $3.50 monthly fee for its recycling service. Recyclables are collected using a two-bin system, with curbside sorting from the collection vehicle. The following materials are collected:

- mixed paper
- newspaper
- corrugated cardboard
- clear, green, and brown glass bottles
- all platstic bottles
- aluminum and steel cans
- telephone books (seasonal)
- aerosol cans.

Residents living within the city of Asheville are encouraged to participate in the curbside recycling program. The program serves 28,204 residences, with each residence receiving two recycling bins at no charge. One green bin is used for mixed paper (e.g., office paper, cereal boxes, magazines, and junk mail). The other bin is used for newspaper, metal cans, plastic bottles, and glass bottles and jars. Cardboard needs to be flattened and placed under the green bin. Recycling is collected every other week on the regular trash day. A curbside recycling truck comes to each neighborhood on a predetermined schedule and separates the recyclables at the curb.

There are two drop-off centers within Asheville. One is serviced by the curbside contractor, and the second is operated by Buncombe County. These centers are set up for people who do not have curbside recycling pickup at their homes or businesses. Anyone can use these centers to drop off their recycling twenty-four hours a day, seven days a week.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Number of City Drop-Off Centers	0
Other Drop-Off Centers	2
Percentage of Service Contracted	99%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	28,204
Tons of Recyclables Collected	
Curbside	7,818
City Drop-Off Centers	890
Total Tons Collected	8,708
Monthly Service Fee	$3.50
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	NA

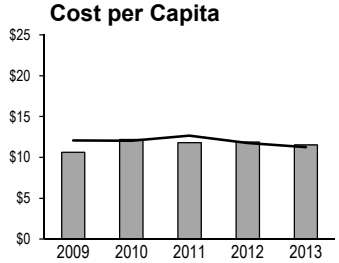
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$994,896
Capital Costs	$0
TOTAL	$994,896

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

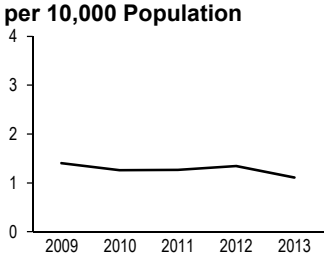
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Asheville	$10.61	$12.19	$11.81	$11.90	$11.54
Average	$12.06	$12.04	$12.67	$11.78	$11.25

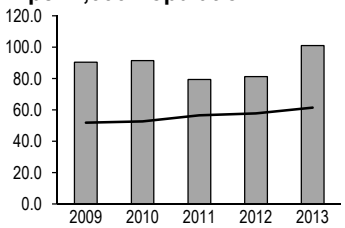
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville					
Average	1.40	1.26	1.26	1.34	1.11

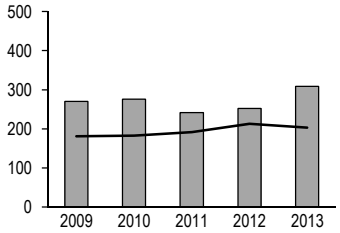
Workload Measures

Tons Recyclables Collected per 1,000 Population



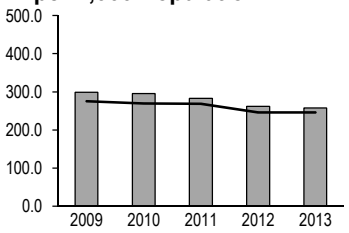
	2009	2010	2011	2012	2013
Asheville	90.5	91.4	79.3	81.2	101.0
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Asheville	270	276	241	252	309
Average	181	183	192	213	203

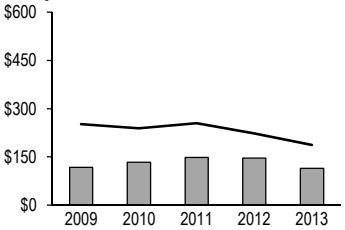
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	299.2	295.8	282.6	262.1	257.3
Average	275.7	269.4	268.7	246.2	245.9

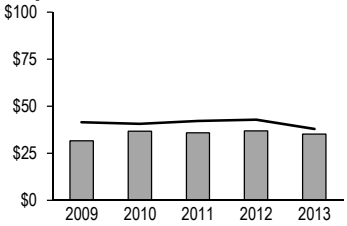
Efficiency Measures

Recycling Services Cost per Ton Collected



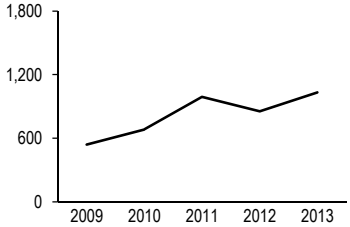
	2009	2010	2011	2012	2013
Asheville	$117	$133	$149	$147	$114
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Asheville	$31.70	$36.76	$35.94	$36.92	$35.27
Average	$41.41	$40.64	$42.23	$42.87	$37.97

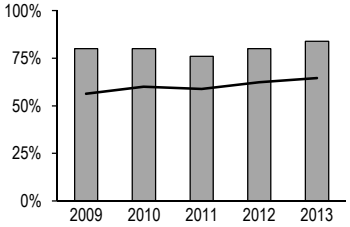
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Asheville					
Average	541	681	991	854	1033

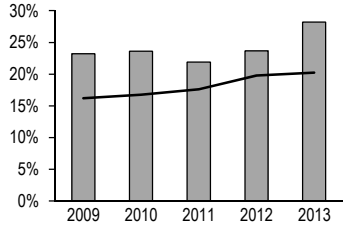
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Asheville	80.0%	80.0%	76.0%	80.0%	84.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Asheville	23.2%	23.6%	21.9%	23.6%	28.2%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Burlington Household Recycling

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Burlington offers curbside recycling to all city residents. The service was contracted through Waste Industries in FY 2012–13.

The city charges a monthly fee of $2.29 for recycling, which is included in the solid waste fee. Collection of recyclables is done every two weeks. Residents are provided with twenty-two-gallon size bins. Items collected include:

- plastic jugs and bottles, No. 1 and No. 2
- aluminum cans
- steel cans
- corrugated cardboard
- chipboard
- newspaper and inserts
- phone books
- mixed paper
- magazines
- clear, green, amber, and brown glass bottles and jars.

Alamance County provides three drop-off recycling sites.

Conditions Affecting Service, Performance, and Costs

The set-out rate is provided annually by the contractor.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Number of City Drop-Off Centers	0
Other Drop-Off Centers	3
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	16,723
Tons of Recyclables Collected	
Curbside	2,642
City Drop-Off Centers	0
Total Tons Collected	2,642
Monthly Service Fee	$2.29
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	NA

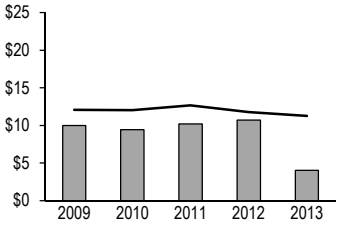
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$207,133
Capital Costs	$0
TOTAL	$207,133

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

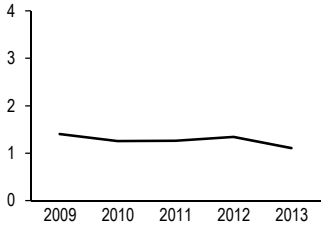
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Burlington	$10.01	$9.45	$10.20	$10.73	$4.05
Average	$12.06	$12.04	$12.67	$11.78	$11.25

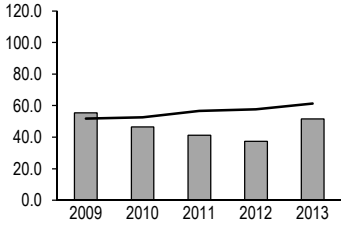
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington					
Average	1.40	1.26	1.26	1.34	1.11

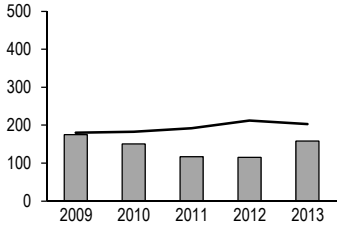
Workload Measures

Tons Recyclables Collected per 1,000 Population



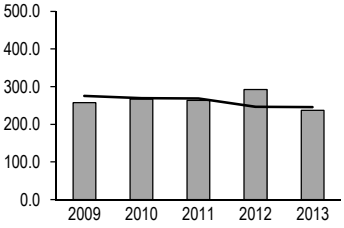
	2009	2010	2011	2012	2013
Burlington	55.4	46.4	41.3	37.4	51.6
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Burlington	175	151	117	115	158
Average	181	183	192	213	203

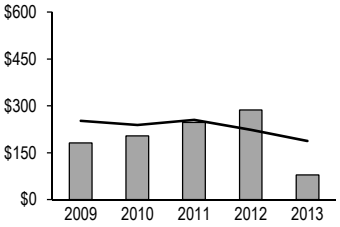
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	257.6	267.0	263.2	292.6	237.2
Average	275.7	269.4	268.7	246.2	245.9

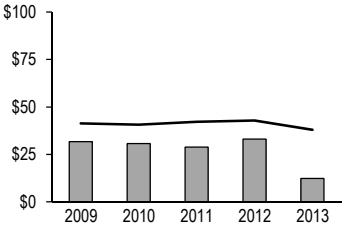
Efficiency Measures

Recycling Services Cost per Ton Collected



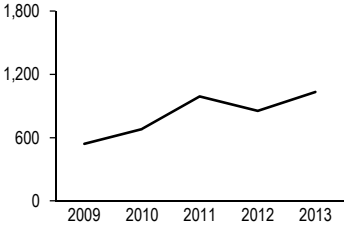
	2009	2010	2011	2012	2013
Burlington	$181	$204	$247	$287	$78
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Burlington	$31.73	$30.77	$28.83	$33.06	$12.39
Average	$41.41	$40.64	$42.23	$42.87	$37.97

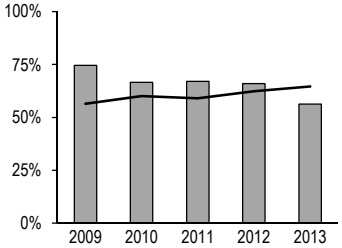
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Burlington					
Average	541	681	991	854	1033

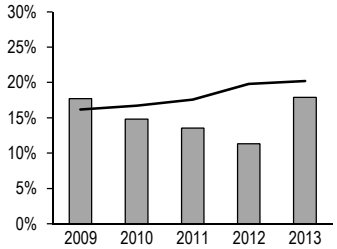
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Burlington	74.6%	66.6%	67.0%	66.0%	56.3%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Burlington	17.7%	14.8%	13.6%	11.3%	17.9%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Cary provides biweekly curbside collection of recyclable materials and maintains one drop-off recycling center. The town changed from weekly to biweekly collection in July 2010. There is a monthly $14 fee which covers both recycling and solid waste pickup.

Materials collected in the curbside program and at the drop-off recycling center include the following:

- newspaper
- chipboard
- phone books
- junk mail
- glossy white paper
- glossy magazines and catalogs
- corrugated cardboard
- milk/juice gable-top cartons
- aluminum cans and foil
- steel and tin food cans
- clear, green, and brown glass bottles and jars
- plastic materials, such as No. 1, 2, 5, and 7 bottles
- used motor oil, electronics, and appliances on request.

The town collected 10,850 tons from the curbside collection and gathered 548 tons at its drop-off site. The town changed to commingled recycling at the curb during FY 2006–07, eliminating curbside sorting. The town collected $208,343 for the sale of recyclables duing the year.

Conditions Affecting Service, Performance, and Costs
The set-out rate is calculated annually.

Cary defines a valid complaint as a complaint that has been verified in the field by a supervisor.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Collection	12.0
FTE Positions—Other	1.5
Number of City Drop-Off Centers	1
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	46,079
Tons of Recyclables Collected	
Curbside	10,850
City Drop-Off Centers	548
Total Tons Collected	11,398
Monthly Service Fee	$14
Revenue from Sale of Recyclables	$208,343
Revenue as Percentage of Cost	10.5%

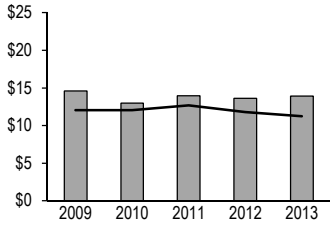
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	41.6%
Operating Costs	43.6%
Capital Costs	14.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$823,476
Operating Costs	$862,974
Capital Costs	$292,614
TOTAL	$1,979,064

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

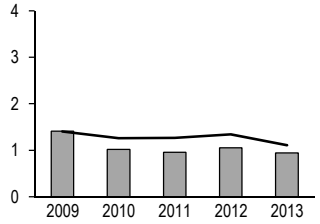
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Cary	$14.61	$13.00	$13.95	$13.64	$13.90
Average	$12.06	$12.04	$12.67	$11.78	$11.25

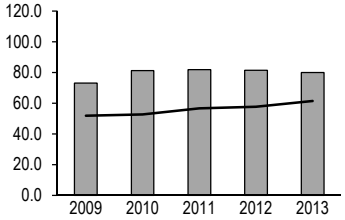
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	1.41	1.02	0.95	1.05	0.94
Average	1.40	1.26	1.26	1.34	1.11

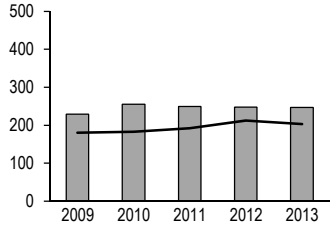
Workload Measures

Tons Recyclables Collected per 1,000 Population



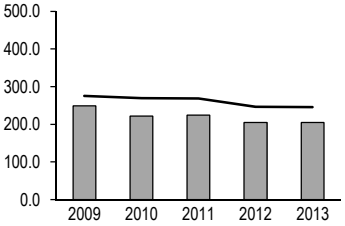
	2009	2010	2011	2012	2013
Cary	73.1	81.2	81.9	81.4	80.0
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Cary	230	255	249	248	247
Average	181	183	192	213	203

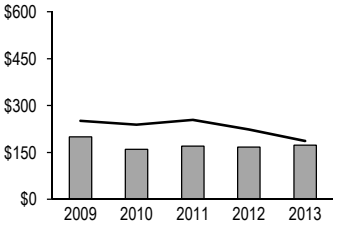
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Cary	249.3	222.2	224.4	205.4	205.1
Average	275.7	269.4	268.7	246.2	245.9

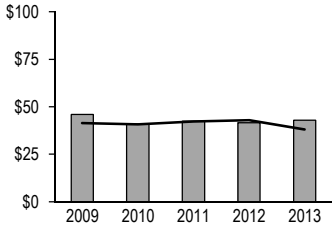
Efficiency Measures

Recycling Services Cost per Ton Collected



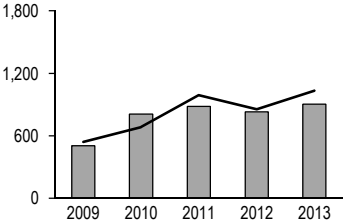
	2009	2010	2011	2012	2013
Cary	$200	$160	$170	$168	$174
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Cary	$45.91	$40.83	$42.45	$41.50	$42.95
Average	$41.41	$40.64	$42.23	$42.87	$37.97

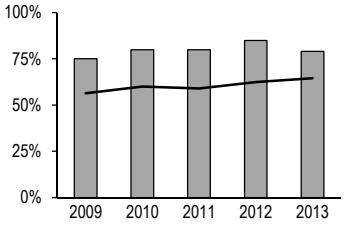
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Cary	504	810	882	832	904
Average	541	681	991	854	1033

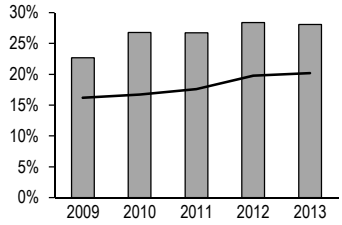
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Cary	75.0%	80.0%	80.0%	85.0%	79.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Cary	22.7%	26.8%	26.7%	28.4%	28.1%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Charlotte provides curbside recycling collection to single-family residential customers once every two weeks. In FY 2010–11, the service went from being provided by both city staff and contractors under a managed competition system to now being completely contracted out. Materials collected in the recycling program include the following:

- glass
- plastic
- aluminum
- newspaper
- magazines
- catalogs
- phone books
- cardboard
- milk cartons
- aerosol cans
- juice boxes.

Recycling was changed to a single stream in FY 2010–11. The majority of users were switched to ninety-five or ninety-six-gallon roll-out containers rather than the previous sixteen-gallon bins. The city receives a modest amount from sale of recyclables, which totaled $141,970 for the year.

The county operates several recycling drop-off centers that are available for use by citizens of Charlotte and Mecklenburg County. Tonnage from the drop-off centers is not included in this report.

Conditions Affecting Service, Performance, and Costs
The set-out rate is calculated daily, as the trucks are outfitted with Radio Frequency Identification (RFID) readers and the recycling carts have RFID chips installed.

The change to a completely contracted out service in Fiscal Year 2010–2011 was a major change for recylcing collection in Charlotte. Comparisons over time should take this switch into account.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	4.0
Number of City Drop-Off Centers	0
Other Drop-Off Centers	13
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	210,781
Tons of Recyclables Collected	
Curbside	43,919
City Drop-Off Centers	0
Total Tons Collected	43,919
Monthly Service Fee	No
Revenue from Sale of Recyclables	$141,970
Revenue as Percentage of Cost	3.1%

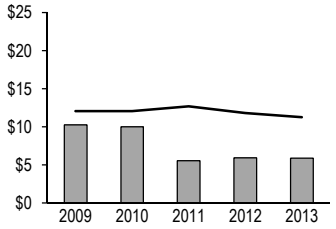
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	99.5%
Capital Costs	0.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$4,492,047
Capital Costs	$24,263
TOTAL	$4,516,310

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

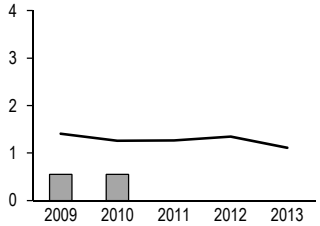
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Charlotte	$10.23	$9.99	$5.55	$5.92	$5.90
Average	$12.06	$12.04	$12.67	$11.78	$11.25

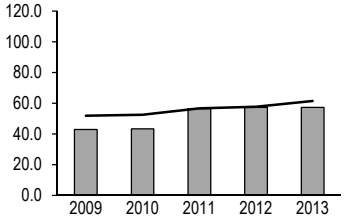
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	0.55	0.55			
Average	1.40	1.26	1.26	1.34	1.11

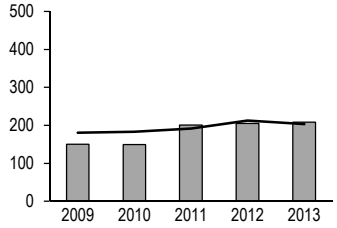
Workload Measures

Tons Recyclables Collected per 1,000 Population



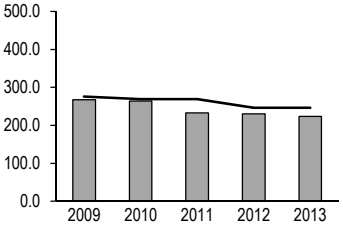
	2009	2010	2011	2012	2013
Charlotte	42.9	43.4	56.5	57.2	57.4
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	150	150	201	205	208
Average	181	183	192	213	203

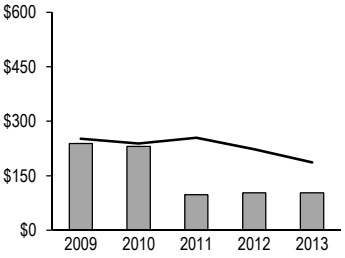
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Charlotte	267.4	263.7	232.9	230.3	223.6
Average	275.7	269.4	268.7	246.2	245.9

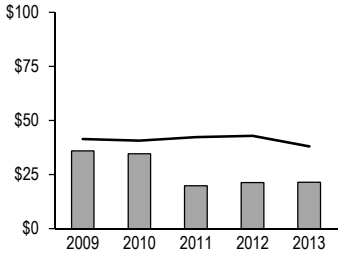
Efficiency Measures

Recycling Services Cost per Ton Collected



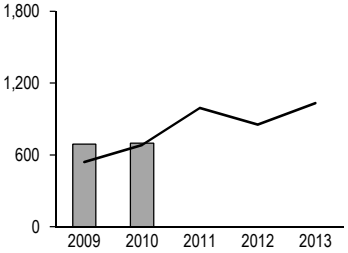
	2009	2010	2011	2012	2013
Charlotte	$239	$230	$98	$103	$103
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Charlotte	$35.81	$34.48	$19.73	$21.23	$21.43
Average	$41.41	$40.64	$42.23	$42.87	$37.97

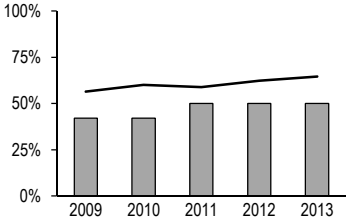
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Charlotte	689	699			
Average	541	681	991	854	1033

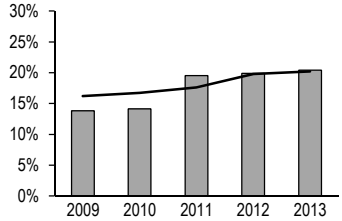
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Charlotte	42.0%	42.0%	50.0%	50.0%	50.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Charlotte	13.8%	14.1%	19.5%	19.9%	20.4%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Concord provides bi-weekly curbside collection of recyclable materials from households. The city uses a contractor to provide recycling collection. Residents place materials into bins. The recyclable materials collected include:

- glass
- newspaper
- magazines
- mixed paper and mail
- No. 1 and No. 2 plastics
- metal and aluminum food and beverage containers.

Concord uses a contract collector for regular residential curbside recycling. The materials are collected on a commingled basis weekly from each participating resident and delivered to a materials recovery facility (MRF) in Charlotte for separation and marketing.

The city received $193,078 from the sale of recyclables during the year offsetting some of the costs.

Conditions Affecting Service, Performance, and Costs
During FY 2011–2012, Concord switched contractors. This change in Concord's recycling collection produced serveral challenges during the startup and transition periods. Complaints were up in the first three months due to errors by the contractor and because of customer actions. Valid complaints in the startup period were also notably up, as the contractor was not able to close complaints with proper notation. These problems were largely fixed after the intial three months.

In FY 2010–11, Concord purchased new recycling carts. The cost of these carts is a special one-time expense that is not treated as capital because each cart is below a dollar threshold. The large jump in the various cost measures for recycling is therefore a special one-time jump that will not be repeated.

The set-out rate is calculated twice a year.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	1.5
Number of City Drop-Off Centers	0
Other Drop-Off Centers	1
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	28,524
Tons of Recyclables Collected	
Curbside	5,732
City Drop-Off Centers	0
Total Tons Collected	5,732
Monthly Service Fee	No
Revenue from Sale of Recyclables	$193,078
Revenue as Percentage of Cost	24.3%

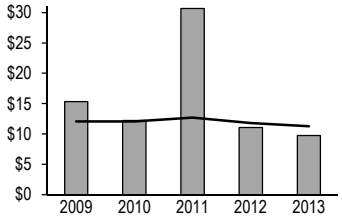
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	12.5%
Operating Costs	85.1%
Capital Costs	2.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$99,518
Operating Costs	$676,462
Capital Costs	$19,369
TOTAL	$795,349

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

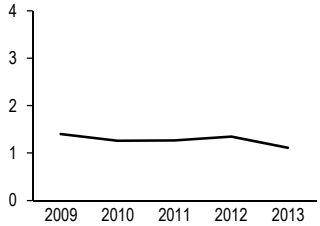
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Concord	$15.35	$12.23	$30.65	$11.08	$9.76
Average	$12.06	$12.04	$12.67	$11.78	$11.25

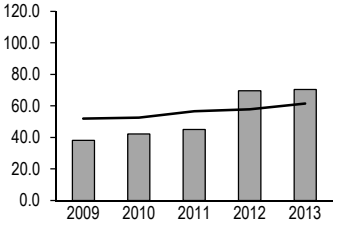
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord					
Average	1.40	1.26	1.26	1.34	1.11

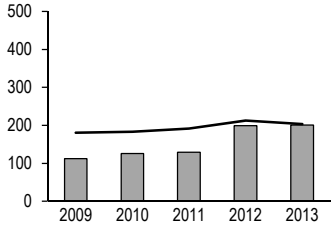
Workload Measures

Tons Recyclables Collected per 1,000 Population



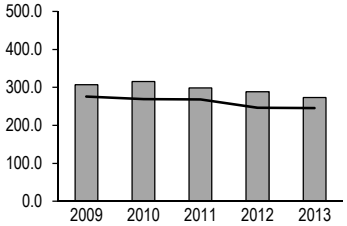
	2009	2010	2011	2012	2013
Concord	38.1	42.2	45.0	69.7	70.4
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Concord	113	126	129	199	201
Average	181	183	192	213	203

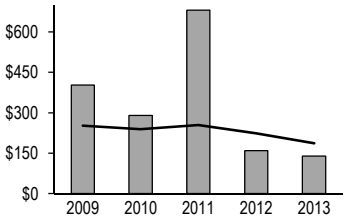
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Concord	307.0	315.7	298.8	288.9	273.7
Average	275.7	269.4	268.7	246.2	245.9

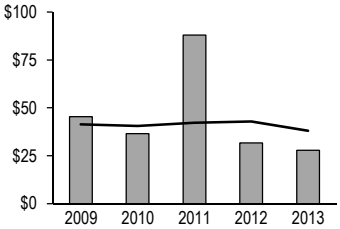
Efficiency Measures

Recycling Services Cost per Ton Collected



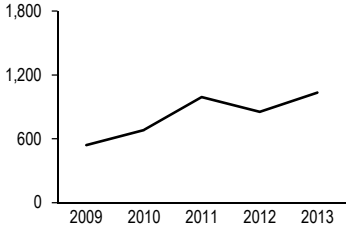
	2009	2010	2011	2012	2013
Concord	$403	$290	$681	$159	$139
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Concord	$45.43	$36.50	$88.07	$31.67	$27.88
Average	$41.41	$40.64	$42.23	$42.87	$37.97

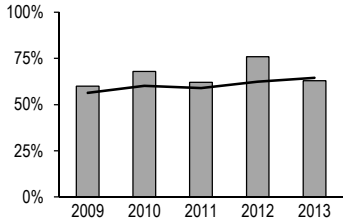
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Concord					
Average	541	681	991	854	1033

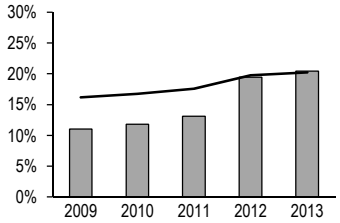
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Concord	60.0%	68.0%	62.0%	76.0%	63.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Concord	11.0%	11.8%	13.1%	19.4%	20.4%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The city provides curbside collection service every other week to all participating city residents. Durham made a major shift in its collection practices, changing from a contracted service to a city-run service during FY 2009–10. Residents were provided a much larger ninety-six gallon container to enable collection once every two weeks. There is no collection fee for collecting curbside recycling.

Materials collected in Durham's recycling program include:

- aluminum cans, foil, and pie tins
- steel cans
- glass bottles and jars
- plastic bottles
- gable-top beverage and aseptic containers
- plastic six-pack rings
- newspaper
- cardboard
- glossary magazines and catalogs
- white and colored office paper.

Conditions Affecting Service, Performance, and Costs
Under city ordinance, citizens are required to recycle aluminum and steel cans, glass bottles or jars, newspaper, and corrugated cardboard. This requirement applies to all materials going to the city's transfer station. Individuals and business owners who fail to comply with this ordinance are subject to penalties and fines.

The set-out rate for the City of Durham is an estimate done annually by city staff.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Positions—Collection	12.0
FTE Positions—Other	1.0
Number of City Drop-Off Centers	1
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	70,287
Tons of Recyclables Collected	
Curbside	13,500
City Drop-Off Centers	252
Total Tons Collected	13,752
Monthly Service Fee	No
Revenue from Sale of Recyclables	$311,169
Revenue as Percentage of Cost	15.6%

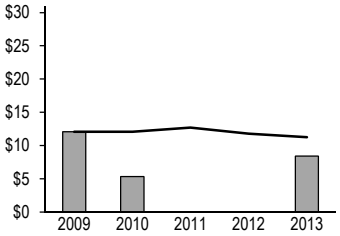
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	54.4%
Operating Costs	23.7%
Capital Costs	21.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,082,262
Operating Costs	$472,402
Capital Costs	$435,021
TOTAL	$1,989,685

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

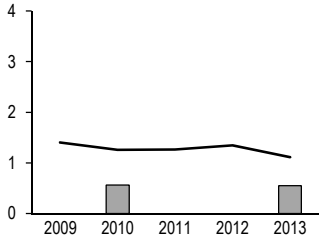
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Durham	$12.06	$5.32			$8.41
Average	$12.06	$12.04	$12.67	$11.78	$11.25

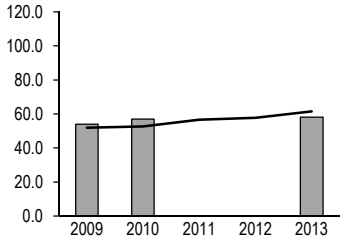
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham		0.56			0.55
Average	1.40	1.26	1.26	1.34	1.11

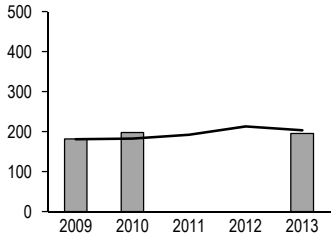
Workload Measures

Tons Recyclables Collected per 1,000 Population



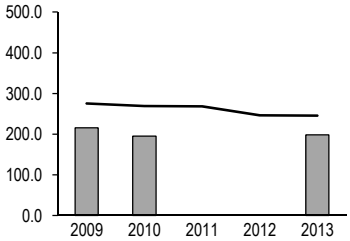
	2009	2010	2011	2012	2013
Durham	54.0	57.0			58.1
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Durham	182	198			196
Average	181	183	192	213	203

Tons Solid Waste Landfilled per 1,000 Population



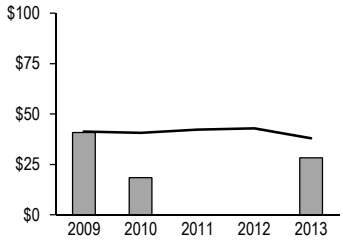
	2009	2010	2011	2012	2013
Durham	216.0	195.0			198.0
Average	275.7	269.4	268.7	246.2	245.9

Efficiency Measures

Recycling Services Cost per Ton Collected

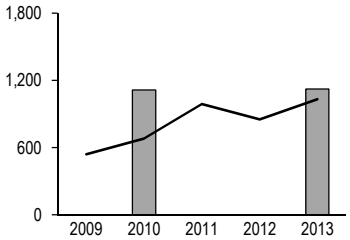
	2009	2010	2011	2012	2013
Durham	$224	$93			$145
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Durham	$40.87	$18.44			$28.31
Average	$41.41	$40.64	$42.23	$42.87	$37.97

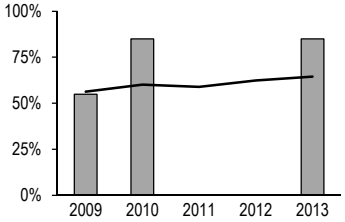
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Durham		1116			1125
Average	541	681	991	854	1033

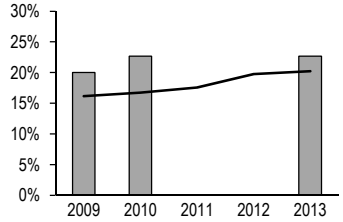
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Durham	55.0%	85.0%			85.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Durham	20.0%	22.7%			22.7%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Greensboro Household Recycling

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Greensboro operates a voluntary commingled collection process for its recycling customers. Recycling services are provided to the community by means of single ninety-gallon automated containers and by green translucent bags. Partnerships also are maintained with fire departments, the county school system, the extension office, and the parks department for providing drop-off sites. There are twenty city-owned drop-off sites, but these collected tons are not reported in Greensboro's data.

Greensboro changed its recycling pickup from once per week to every other week in FY 2007–08. Recycling materials are not sorted curbside. Instead they are set out in one container, picked up by an automated-collection crew, and taken to an off-site contractor that sorts and recycles the materials. Greensboro provides the collection pickup and delivery to the contractor's location, while the contractor provides for recovery of materials and disposal of the residuals it is unable to recycle.

Materials collected by Greensboro's household recycling program include:

- No. 1 and No. 2 plastics
- newspaper
- magazines
- telephone books
- cardboard
- aluminum and steel cans
- chipboard (cereal boxes)
- glass jars and bottles
- plastic soda bottles and milk jugs
- office paper
- empty aerosol cans.

Greensboro contracts with a private firm for separation, packaging, and sale of recyclable materials. City payments to the contractor for FY 2012–13 are included in total cost. The contractor pays the city 50 percent of the net proceeds it receives from the sale of recyclable items. The estimated revenues for sale of recyclables for residential recycling for FY 2012–13 was $349,882. In addition, Greensboro gets additional revenues from the sale of recyclables from non-residential sources, but these are not counted here.

Conditions Affecting Service, Performance, and Costs

Greensboro is highly automated in gathering materials from its recycling program.

The set-out rate was based on a manual count done on a weekly basis.

Municipal Profile

Population (OSBM 2012)	275
Land Area (Square Miles)	127.14
Persons per Square Mile	2
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Collection	15.0
FTE Positions—Other	4.0
Number of City Drop-Off Centers	20
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	81,102
Tons of Recyclables Collected	
Curbside	18,163
City Drop-Off Centers	0
Total Tons Collected	18,163
Monthly Service Fee	No
Revenue from Sale of Recyclables	$349,882
Revenue as Percentage of Cost	13.2%

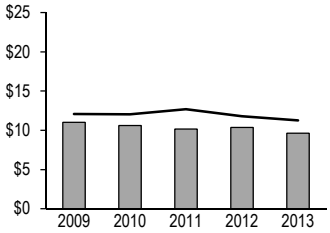
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	31.0%
Operating Costs	69.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$822,423
Operating Costs	$1,828,427
Capital Costs	$0
TOTAL	$2,650,850

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

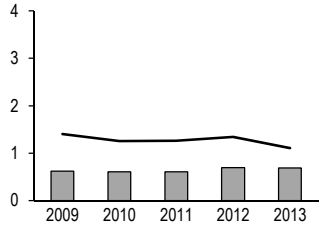
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Greensboro	$11.03	$10.62	$10.15	$10.35	$9.64
Average	$12.06	$12.04	$12.67	$11.78	$11.25

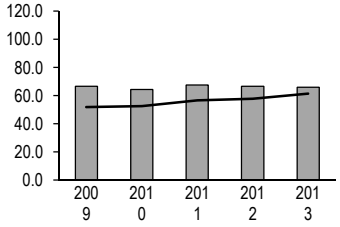
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	0.62	0.61	0.61	0.70	0.69
Average	1.40	1.26	1.26	1.34	1.11

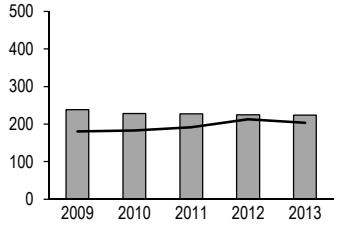
Workload Measures

Tons Recyclables Collected per 1,000 Population



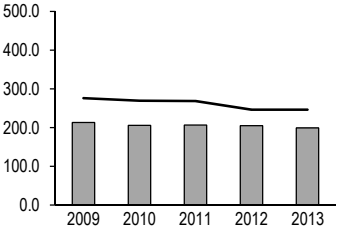
	2009	2010	2011	2012	2013
Greensboro	66.7	64.3	67.6	66.6	66.0
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	238	228	228	225	224
Average	181	183	192	213	203

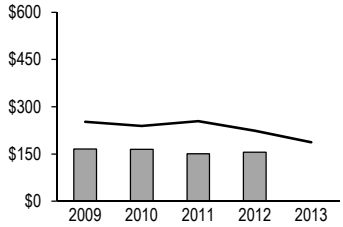
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	212.9	205.6	206.2	205.2	199.5
Average	275.7	269.4	268.7	246.2	245.9

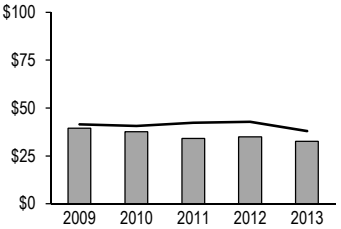
Efficiency Measures

Recycling Services Cost per Ton Collected



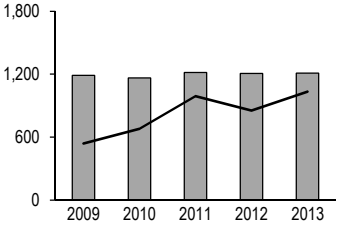
	2009	2010	2011	2012	2013
Greensboro	$165	$165	$150	$155	$0
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Greensboro	$39.43	$37.62	$34.17	$34.95	$32.69
Average	$41.41	$40.64	$42.23	$42.87	$37.97

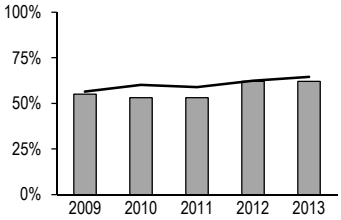
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Greensboro	1189	1166	1218	1208	1211
Average	541	681	991	854	1033

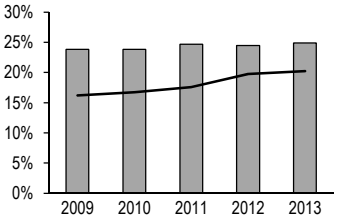
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Greensboro	55.0%	53.0%	53.0%	62.0%	62.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Greensboro	23.9%	23.8%	24.7%	24.5%	24.9%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Greenville offers once-a-week curbside or backyard collection of recyclable materials to its residents through a city-run program. Residents can choose to have backyard collection for a fee. The recycling fee is included in the solid waste fee for residential refuse collection. The recycling materials include:

- newspaper and magazines
- cardboard
- aluminum and steel cans
- No. 1 and No. 2 plastics
- glass of all colors
- white goods.

Greenville's household recycling program also uses three city-owned drop-off recycling centers and 160 other sites connected to multi-family complexes. Tonnage and cost for these other drop-off sites are not included in the performance and cost data.

Conditions Affecting Service, Performance, and Costs
Greenville does not track the number of households which set out recyclables on a weekly basis.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Collection	12.0
FTE Positions—Other	1.0
Number of City Drop-Off Centers	3
Other Drop-Off Centers	160
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	15,708
Tons of Recyclables Collected	
Curbside	5,101
City Drop-Off Centers	0
Total Tons Collected	5,101
Monthly Service Fee	No
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	0.0%

Full Cost Profile

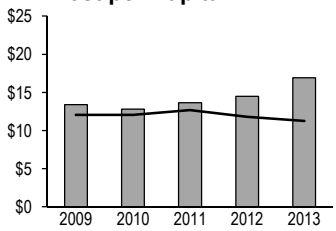
Cost Breakdown by Percentage	
Personal Services	56.5%
Operating Costs	31.6%
Capital Costs	11.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$823,238
Operating Costs	$460,734
Capital Costs	$173,736
TOTAL	$1,457,708

Greenville Household Recycling

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

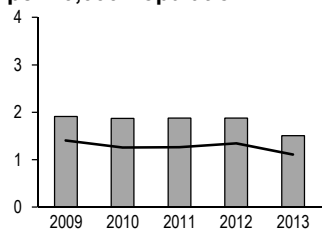
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Greenville	$13.39	$12.80	$13.65	$14.50	$16.92
Average	$12.06	$12.04	$12.67	$11.78	$11.25

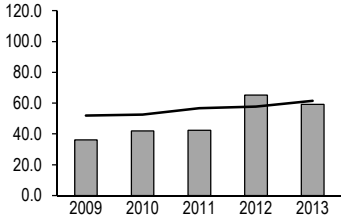
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	1.91	1.87	1.88	1.88	1.51
Average	1.40	1.26	1.26	1.34	1.11

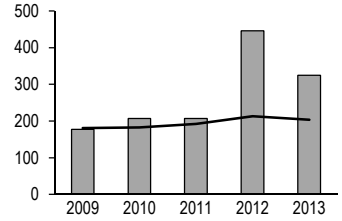
Workload Measures

Tons Recyclables Collected per 1,000 Population



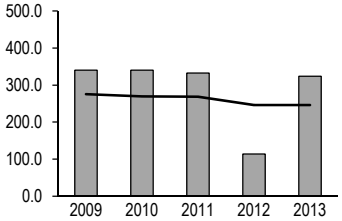
	2009	2010	2011	2012	2013
Greenville	36.2	42.0	42.3	65.1	59.2
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greenville	178	206	206	446	325
Average	181	183	192	213	203

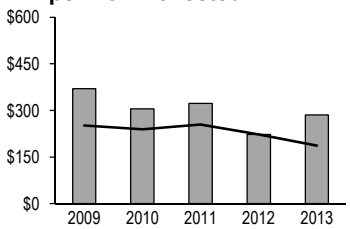
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	339.8	340.2	332.2	113.6	323.7
Average	275.7	269.4	268.7	246.2	245.9

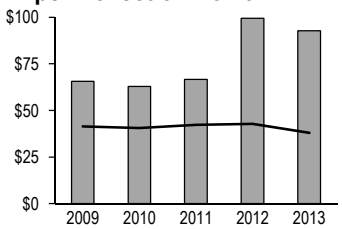
Efficiency Measures

Recycling Services Cost per Ton Collected



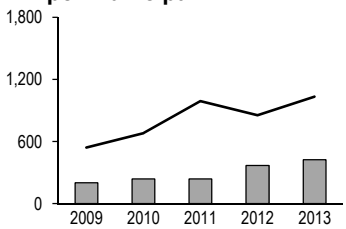
	2009	2010	2011	2012	2013
Greenville	$370	$305	$323	$223	$286
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Greenville	$65.66	$62.94	$66.69	$99.36	$92.80
Average	$41.41	$40.64	$42.23	$42.87	$37.97

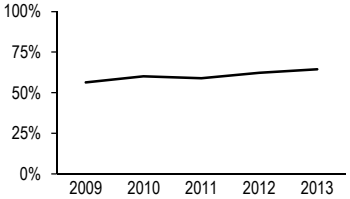
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Greenville	202	240	240	369	425
Average	541	681	991	854	1033

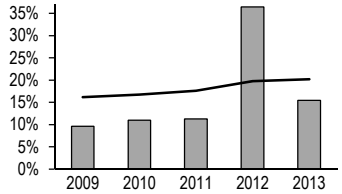
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Greenville					
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Greenville	9.6%	11.0%	11.3%	36.4%	15.5%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Hickory offers once-a-week curbside collection of recyclable materials to its residents through a contractual agreement. The recycling materials collected include:

- newspaper and magazines
- aluminum and steel cans
- No. 1 and No. 2 plastics
- glass—all colors
- phone books and junk mail.

Hickory's household recycling program also uses two drop-off recycling centers. One is staffed, and the other is not. These centers collect antifreeze and oil in addition to the same household materials that are collected at the curb. Tonnage and costs for this service are included in the performance and cost data.

A separate commercial recycling program that services businesses and multi-family units is operated by the city. The program utilizes city workers and equipment to collect cardboard and paper in addition to the curbside materials. The performance and cost data do not include the commercial program.

The city charges residents a monthly fee for recycling, which is included in the monthly solid waste fee. In FY 2012–13, the city collected $76,407 in revenue from the sale of recyclables.

Conditions Affecting Service, Performance, and Costs
The set-out rate is calculated on a monthly basis by the contractor. While not tracked, missed recycling pickups are minimal and average less than one per month.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Positions—Collection	Contractor and 0.5 City
FTE Positions—Other	0.1
Number of City Drop-Off Centers	2
Other Drop-Off Centers	0
Percentage of Service Contracted	80%
Collection Frequency	1 x week
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	12,100
Tons of Recyclables Collected	
Curbside	1,197
City Drop-Off Centers	300
Total Tons Collected	1,497
Monthly Service Fee	No
Revenue from Sale of Recyclables	$76,407
Revenue as Percentage of Cost	14.2%

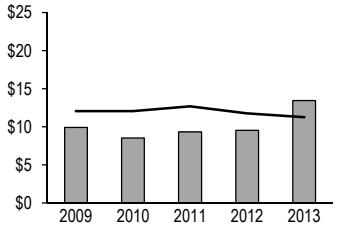
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	3.9%
Operating Costs	68.5%
Capital Costs	27.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$20,910
Operating Costs	$368,084
Capital Costs	$148,714
TOTAL	$537,708

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

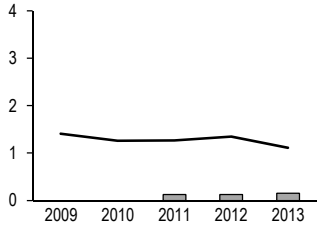
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Hickory	$9.90	$8.52	$9.33	$9.53	$13.43
Average	$12.06	$12.04	$12.67	$11.78	$11.25

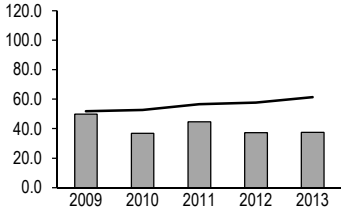
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory			0.13	0.13	0.15
Average	1.40	1.26	1.26	1.34	1.11

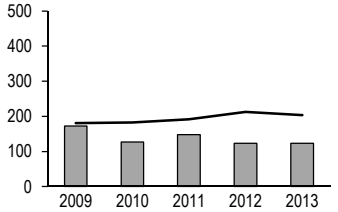
Workload Measures

Tons Recyclables Collected per 1,000 Population



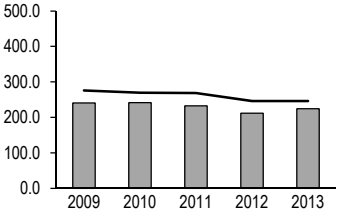
	2009	2010	2011	2012	2013
Hickory	49.8	36.7	44.6	37.2	37.4
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Hickory	172	127	148	123	124
Average	181	183	192	213	203

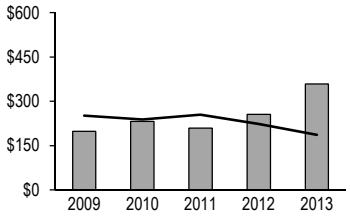
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	241.0	241.9	232.2	211.8	224.3
Average	275.7	269.4	268.7	246.2	245.9

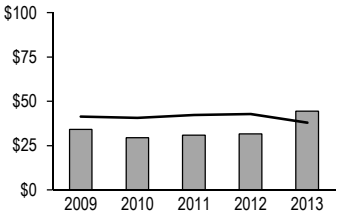
Efficiency Measures

Recycling Services Cost per Ton Collected



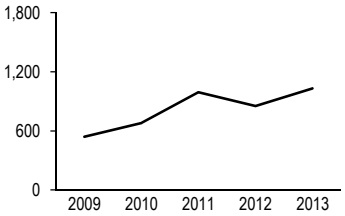
	2009	2010	2011	2012	2013
Hickory	$199	$232	$209	$256	$359
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Hickory	$34.22	$29.53	$30.90	$31.58	$44.44
Average	$41.41	$40.64	$42.23	$42.87	$37.97

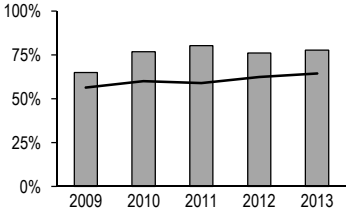
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Hickory					
Average	541	681	991	854	1033

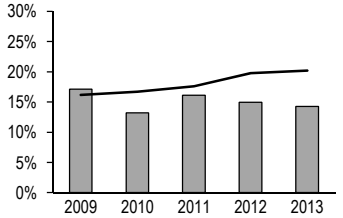
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Hickory	65.0%	76.9%	80.4%	76.2%	77.8%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Hickory	17.1%	13.2%	16.1%	14.9%	14.3%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

High Point — Household Recycling

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The city offers curbside collection every other week. Large ninety-six-gallon containers are provided to customers. Additional carts may be purchased. The recycling program is a city function.

Recyclables are collected using four recycling crews that work in the Environmental Services Division. The pickup trucks are automated with one driver. A truck for special circumstances such as downtown collection uses a crew with a driver and one laborer. There are thirteen drop-off sites throughout the city and a number of multi-family sites at which the city collects. Materials collected include:

- plastic
- glass
- metal and aluminum cans
- magazines
- newspaper
- phone books
- cardboard
- mixed paper.

The city also operates and owns a material recovery facility (MRF). There is a buy-back center at the MRF to service individuals selling recyclables. This report includes the cost and full-time equivalent positions for the MRF.

Conditions Affecting Service, Performance, and Costs

The city used a random sample to determine the set-out rate.

High Point has been working on improving efficiency and processing of recyclables for resale. Sales of recyclable materials were $672,671 for the year.

High Point made a transition in FY 2009–10 to less frequent automated collection. This changeover brought with it a large amount of one-time costs associated with recycling containers and new collection equipment. High Point is now fully automated in its pickups, other than those involving special requests.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Collection	4.0
FTE Positions—Other	30.0
Number of City Drop-Off Centers	13
Other Drop-Off Centers	65
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	35,936
Tons of Recyclables Collected	
Curbside	8,373
City Drop-Off Centers	645
Total Tons Collected	9,018
Monthly Service Fee	$1.00
Revenue from Sale of Recyclables	$672,671
Revenue as Percentage of Cost	28.4%

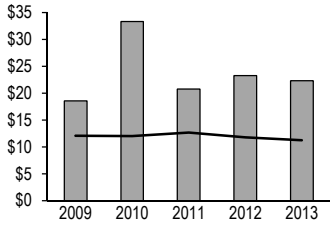
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	18.1%
Operating Costs	76.6%
Capital Costs	5.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$428,490
Operating Costs	$1,816,122
Capital Costs	$126,949
TOTAL	$2,371,561

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

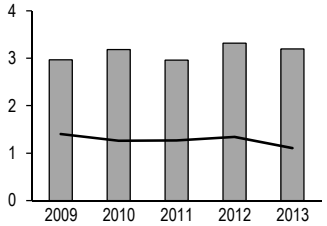
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
High Point	$18.59	$33.36	$20.78	$23.28	$22.29
Average	$12.06	$12.04	$12.67	$11.78	$11.25

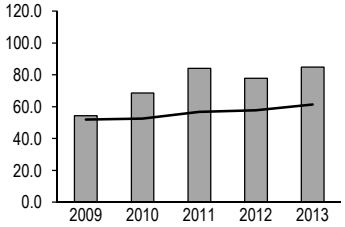
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	2.97	3.18	2.96	3.32	3.20
Average	1.40	1.26	1.26	1.34	1.11

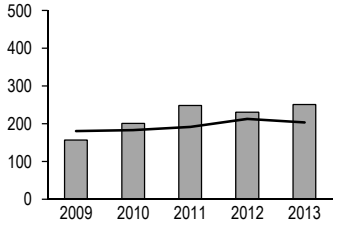
Workload Measures

Tons Recyclables Collected per 1,000 Population



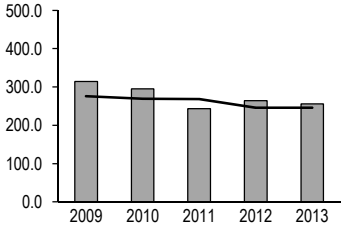
	2009	2010	2011	2012	2013
High Point	54.4	68.5	84.1	77.7	84.8
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
High Point	157	201	248	231	251
Average	181	183	192	213	203

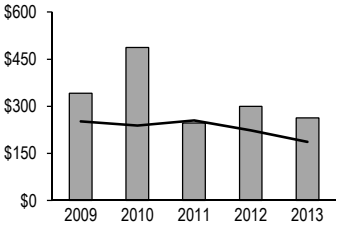
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
High Point	314.3	295.2	243.3	264.0	256.0
Average	275.7	269.4	268.7	246.2	245.9

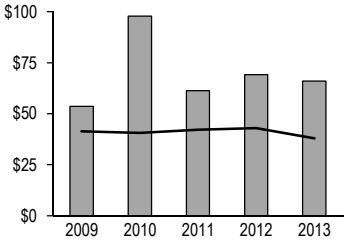
Efficiency Measures

Recycling Services Cost per Ton Collected



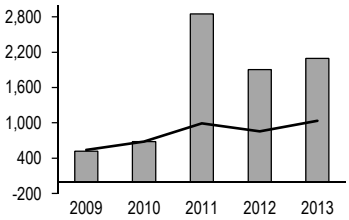
	2009	2010	2011	2012	2013
High Point	$342	$487	$247	$300	$263
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
High Point	$53.62	$97.83	$61.25	$69.10	$65.99
Average	$41.41	$40.64	$42.23	$42.87	$37.97

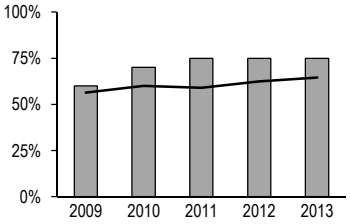
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
High Point	517	683	2848	1904	2093
Average	541	681	991	854	1033

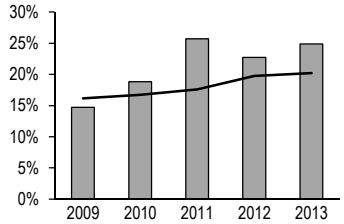
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
High Point	60.0%	70.0%	75.0%	75.0%	75.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
High Point	14.7%	18.8%	25.7%	22.7%	24.9%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Salisbury provides every other week curbside collection of recyclable materials from households. The city charged a monthly recycling fee of $4.03 in FY 2012–13. The city provides and pays for the ninety-six-gallon recycling roll-out containers that residents use. The city contracts 100 percent of its recycling program. Recyclables are collected by the contractor and taken to the recycling site.
The recyclable materials collected include:

- glass (all colors)
- newspaper
- magazines and catalogs
- mixed paper and mail
- telephone books
- cardboard—broken down and cereal boxes
- all plastics
- aluminum cans
- steel cans.

Conditions Affecting Service, Performance, and Costs
The set-out rate was reported monthly by the contractor. The city reserves the right to conduct unannounced follow-up inspections of the collection process.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Number of City Drop-Off Centers	0
Other Drop-Off Centers	10
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	10,500
Tons of Recyclables Collected	
Curbside	1,497
City Drop-Off Centers	0
Total Tons Collected	1,497
Monthly Service Fee	$4.03
Revenue from Sale of Recyclables	$555
Revenue as Percentage of Cost	0.2%

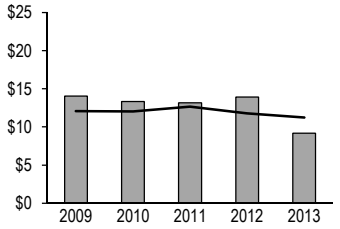
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$307,150
Capital Costs	$0
TOTAL	$307,150

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

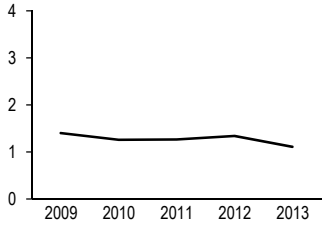
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Salisbury	$14.05	$13.35	$13.16	$13.94	$9.18
Average	$12.06	$12.04	$12.67	$11.78	$11.25

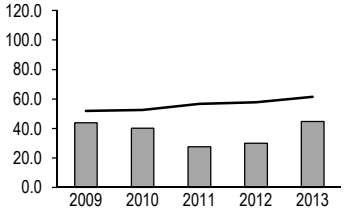
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury					
Average	1.40	1.26	1.26	1.34	1.11

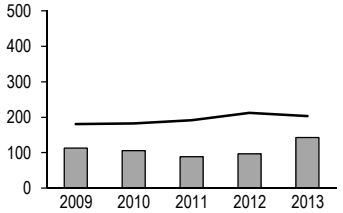
Workload Measures

Tons Recyclables Collected per 1,000 Population



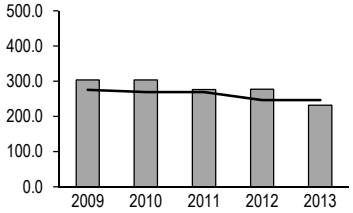
	2009	2010	2011	2012	2013
Salisbury	43.9	40.1	27.5	30.1	44.8
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	113	106	89	97	143
Average	181	183	192	213	203

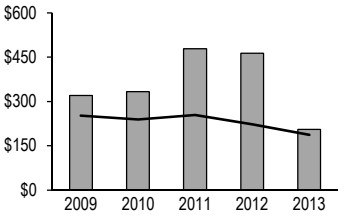
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	303.7	303.8	276.4	277.6	231.3
Average	275.7	269.4	268.7	246.2	245.9

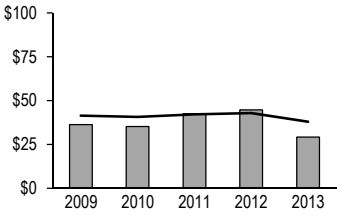
Efficiency Measures

Recycling Services Cost per Ton Collected



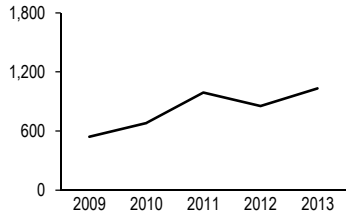
	2009	2010	2011	2012	2013
Salisbury	$320	$333	$478	$463	$205
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Salisbury	$36.25	$35.28	$42.58	$44.74	$29.25
Average	$41.41	$40.64	$42.23	$42.87	$37.97

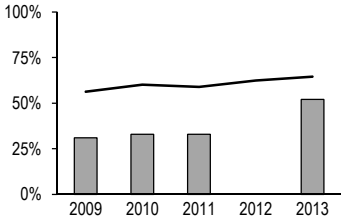
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Salisbury					
Average	541	681	991	854	1033

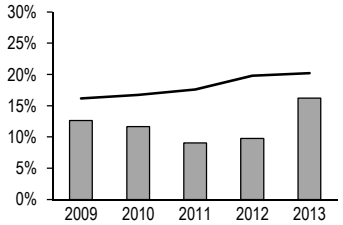
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Salisbury	31.0%	33.0%	33.0%		52.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Salisbury	12.6%	11.7%	9.1%	9.8%	16.2%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Wilmington's household recycling program provides curbside pickup of materials bi-weekly to residences, small businesses, and small apartment complexes that choose to participate. The city performs all the curbside collection.

Materials collected by Wilmington's recycling program include:

- green, brown, and clear glass
- aluminum beverage cans and steel cans
- newspaper
- certain plastics (No. 1 and No. 2)
- all paper products
- cardboard (downtown only).

A separate recycling fee of $2.70 is charged per month and is included in the solid waste fee. Recycling containers are provided to residents at no cost. Recyclables are not separated at curbside but go into a single stream which is handled at the regional recycling facility.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income U.S. Census 2010	$57,892

Service Profile

FTE Positions—Collection	5.0
FTE Positions—Other	0.7
Number of City Drop-Off Centers	0
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	31,395
Tons of Recyclables Collected	
Curbside	6,109
City Drop-Off Centers	0
Total Tons Collected	6,109
Monthly Service Fee	$2.70
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	NA

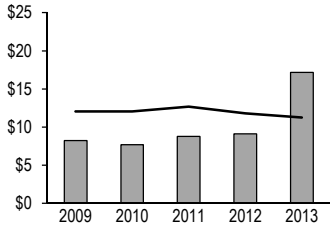
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	17.7%
Operating Costs	77.6%
Capital Costs	4.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$333,985
Operating Costs	$1,463,257
Capital Costs	$88,040
TOTAL	$1,885,282

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

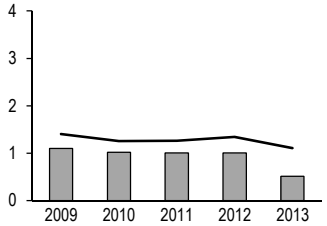
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Wilmington	$8.21	$7.67	$8.79	$9.10	$17.19
Average	$12.06	$12.04	$12.67	$11.78	$11.25

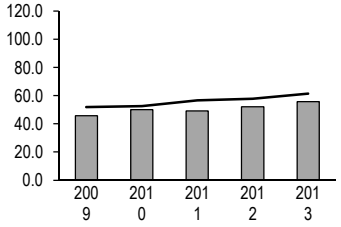
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	1.10	1.02	1.01	1.01	0.52
Average	1.40	1.26	1.26	1.34	1.11

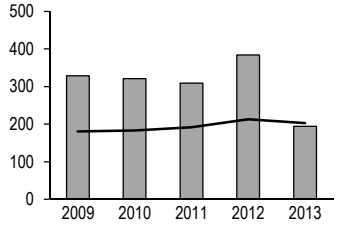
Workload Measures

Tons Recyclables Collected per 1,000 Population



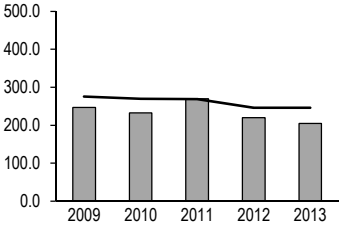
	2009	2010	2011	2012	2013
Wilmington	45.7	50.0	49.1	52.1	55.7
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	329	321	309	384	195
Average	181	183	192	213	203

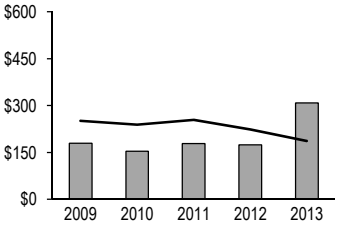
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	246.9	232.3	269.8	219.8	204.9
Average	275.7	269.4	268.7	246.2	245.9

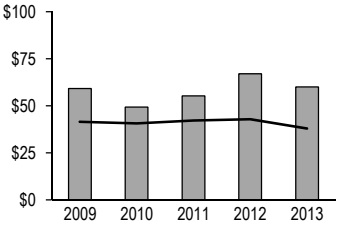
Efficiency Measures

Recycling Services Cost per Ton Collected



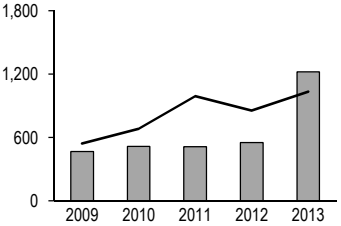
	2009	2010	2011	2012	2013
Wilmington	$180	$153	$179	$175	$309
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Wilmington	$59.14	$49.27	$55.33	$67.05	$60.05
Average	$41.41	$40.64	$42.23	$42.87	$37.97

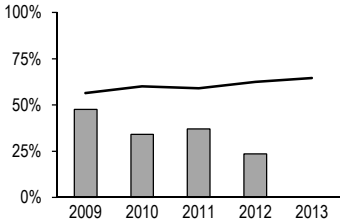
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Wilmington	467	515	512	551	1222
Average	541	681	991	854	1033

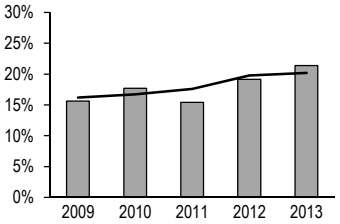
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Wilmington	47.5%	34.1%	37.1%	23.5%	
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Wilmington	15.6%	17.7%	15.4%	19.2%	21.4%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Wilson Household Recycling

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wilson's household recycling program provides curbside pickup of materials once each week to residents on the same day as residential refuse collection but by different crews. The recycling program is part of the Division of Environmental Services.

The following materials are collected:

- aluminum and steel cans
- No. 1 and No. 2 plastic containers
- newsprint
- clear, green, and brown glass
- waste oil on a call-in basis.

Wilson used two three-person crews during the year, consisting of one driver and two collectors each.

Conditions Affecting Service, Performance, and Costs

The set-out rate was calculated on a monthly basis by drivers on the recycling trucks using counters.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Collection	6.0
FTE Positions—Other	0.5
Number of City Drop-Off Centers	0
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	19,650
Tons of Recyclables Collected	
Curbside	1,485
City Drop-Off Centers	0
Total Tons Collected	1,485
Monthly Service Fee	$18.50
Revenue from Sale of Recyclables	$0
Revenue as Percentage of Cost	NA

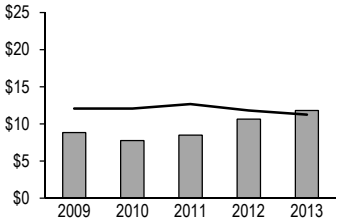
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	42.2%
Operating Costs	44.6%
Capital Costs	13.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$245,911
Operating Costs	$259,911
Capital Costs	$77,576
TOTAL	$583,398

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

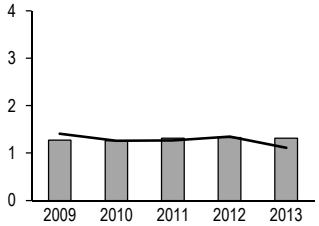
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Wilson	$8.80	$7.74	$8.49	$10.65	$11.80
Average	$12.06	$12.04	$12.67	$11.78	$11.25

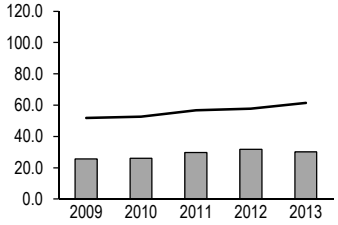
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	1.27	1.26	1.32	1.32	1.31
Average	1.40	1.26	1.26	1.34	1.11

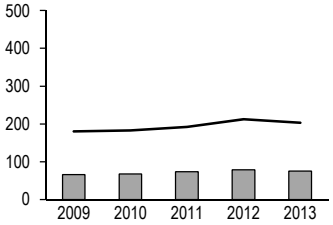
Workload Measures

Tons Recyclables Collected per 1,000 Population



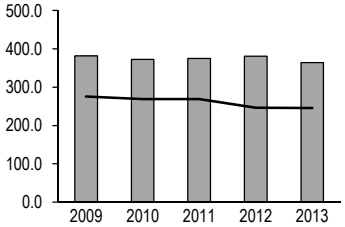
	2009	2010	2011	2012	2013
Wilson	25.7	25.9	29.7	31.7	30.0
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	66	67	74	78	76
Average	181	183	192	213	203

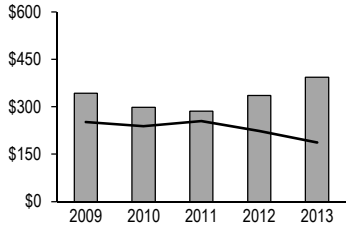
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	381.6	372.4	375.2	381.2	364.1
Average	275.7	269.4	268.7	246.2	245.9

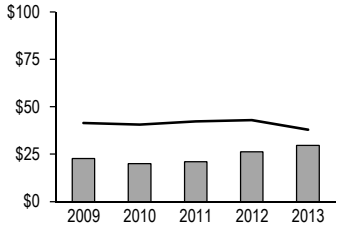
Efficiency Measures

Recycling Services Cost per Ton Collected



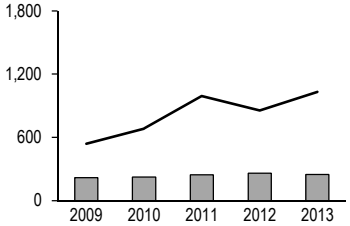
	2009	2010	2011	2012	2013
Wilson	$343	$298	$286	$336	$393
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Wilson	$22.71	$20.10	$21.08	$26.29	$29.69
Average	$41.41	$40.64	$42.23	$42.87	$37.97

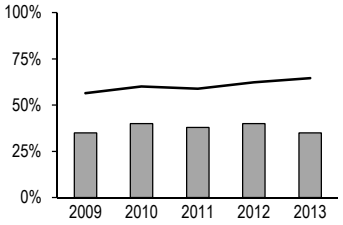
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Wilson	219	224	245	260	248
Average	541	681	991	854	1033

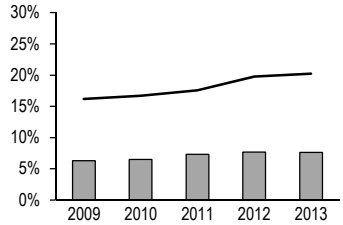
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Wilson	35.0%	40.0%	38.0%	40.0%	35.0%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Wilson	6.3%	6.5%	7.3%	7.7%	7.6%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

Winston-Salem Household Recycling

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Winston-Salem provides bi-weekly curbside household recycling service to its single-family residences using bins and collects recyclables placed in ninety-six-gallon carts weekly from multi-family dwellings and small businesses. The city provides nine drop-off sites for cardboard at its fire stations plus two full-service drop-off sites. Items collected in the city's curbside household recycling program include:

- aluminum and steel cans
- all plastic bottles
- green, amber, and clear glass
- newspaper
- magazines, telephone books, and junk mail
- chipboard
- corrugated cardboard (no bundling requirement)
- office paper
- aerosol cans.

The city contracts for 100 percent of its curbside household recycling program. The contractor separates recyclables at the curb, placing paper products in one compartment on the truck and non-paper products in another. The contractor takes the recyclables to a processing facility where commodities are further separated. The city does not charge a recycling fee. Revenue to the city for the sale of recyclables was $375,689 during the year.

Conditions Affecting Service, Performance, and Costs

In FY 2011–12, 60 percent of of the cost of Winston-Salem's recycling program was funded by landfill tipping fees. The remaining 40 percent was funded by the general fund.

In April 2012, the city implemented a single-stream recycling program in which residents place all recyclables into a city issued ninety-six-gallon cart that is rolled to the curb for collection. The service was also changed to a bi-weekly collection. The city anticipates signficant cost savings and increased participation from a single-stream program.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	1.0
Number of City Drop-Off Centers	11
Other Drop-Off Centers	0
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	76,064
Tons of Recyclables Collected	
Curbside	12,995
City Drop-Off Centers	1,021
Total Tons Collected	14,016
Monthly Service Fee	No
Revenue from Sale of Recyclables	$375,689
Revenue as Percentage of Cost	23.7%

Full Cost Profile

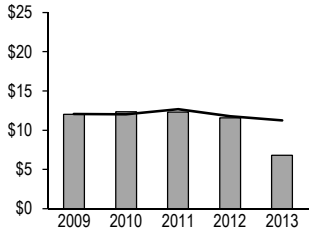
Cost Breakdown by Percentage	
Personal Services	4.2%
Operating Costs	95.7%
Capital Costs	0.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$67,146
Operating Costs	$1,518,096
Capital Costs	$896
TOTAL	$1,586,138

Winston-Salem Household Recycling

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

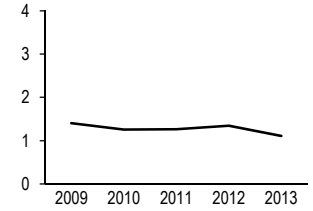
Resource Measures

Recycling Services Cost per Capita



	2009	2010	2011	2012	2013
Winston-Salem	$12.02	$12.34	$12.30	$11.58	$6.80
Average	$12.06	$12.04	$12.67	$11.78	$11.25

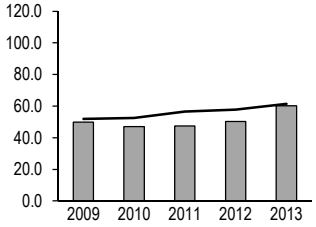
Recycling Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem					
Average	1.40	1.26	1.26	1.34	1.11

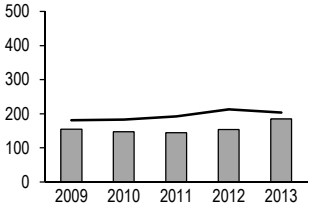
Workload Measures

Tons Recyclables Collected per 1,000 Population



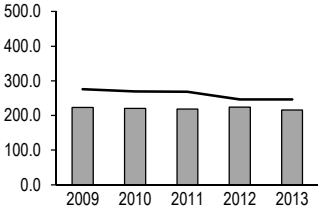
	2009	2010	2011	2012	2013
Winston-Salem	49.9	47.1	47.5	50.3	60.1
Average	51.9	52.6	56.6	57.7	61.4

Tons Recyclables Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	155	147	144	154	184
Average	181	183	192	213	203

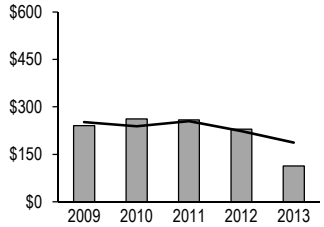
Tons Solid Waste Landfilled per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	223.4	220.4	218.2	224.2	216.1
Average	275.7	269.4	268.7	246.2	245.9

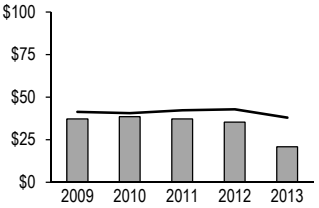
Efficiency Measures

Recycling Services Cost per Ton Collected



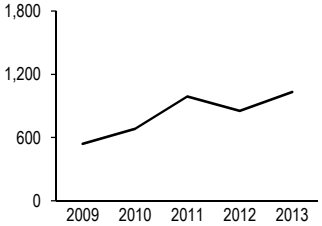
	2009	2010	2011	2012	2013
Winston-Salem	$241	$262	$259	$230	$113
Average	$252	$239	$255	$223	$187

Recycling Services Cost per Collection Point



	2009	2010	2011	2012	2013
Winston-Salem	$37.29	$38.56	$37.25	$35.34	$20.85
Average	$41.41	$40.64	$42.23	$42.87	$37.97

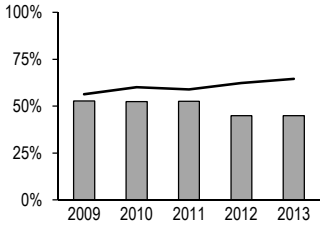
Tons Collected Curbside per Municipal FTE



	2009	2010	2011	2012	2013
Winston-Salem					
Average	541	681	991	854	1033

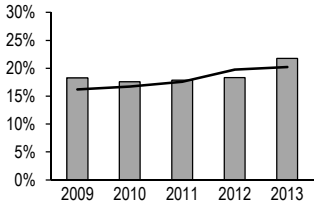
Effectiveness Measures

Community Set-Out Rate



	2009	2010	2011	2012	2013
Winston-Salem	52.8%	52.5%	52.6%	44.9%	44.9%
Average	56.4%	60.1%	58.9%	62.4%	64.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2009	2010	2011	2012	2013
Winston-Salem	18.2%	17.6%	17.9%	18.3%	21.8%
Average	16.2%	16.7%	17.6%	19.8%	20.2%

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Performance and Cost Data

YARD WASTE / LEAF COLLECTION

PERFORMANCE MEASURES FOR YARD WASTE/LEAF COLLECTION

SERVICE DEFINITION

Yard waste and leaf collection includes regularly scheduled or special collection of these items. Such collection may occur from the curb, backyard, or another locale. Yard waste and leaves may be bagged, placed in containers, or loose. The service definition excludes the collection of white goods and other bulky items. Although some municipalities collect yard waste and leaves with household refuse or other trash, they separate the items at some point in the collection process because yard waste and leaves cannot be placed in landfills.

NOTES ON PERFORMANCE MEASURES

1. Tons Collected per 1,000 Population and per 1,000 Collection Points

These are the same performance measures that are used for residential refuse collection, except that tonnage is for yard waste, leaves, and miscellaneous trash rather than residential refuse. “Collection points” refers to the number of residential premises served by regularly scheduled collection of yard waste, leaves, and miscellaneous trash.

2. Cost per Ton Collected

Cost is measured using the project’s full cost accounting model, calculating direct, indirect, and capital costs. Tons are as defined above.

3. Tons Collected per Collection FTE

The number of full-time equivalent (FTE) positions refers to the number of employees or laborers who were directly involved in collection of yard waste, leaves, and miscellaneous trash during the fiscal year. This number includes temporary, permanent, full-time, and part-time workers. Such workers can be sanitation, street, or other municipal employees. One FTE equals 2,080 hours of work per year. Any combination of employees providing 2,080 hours of work per year is one FTE.

4. Complaints (and Valid Complaints) per 10,000 Collection Points

Complaints are those tracked by each jurisdiction, using its own criteria and procedures. Collection points are as defined above. The municipalities follow very different procedures in processing and recording these calls and in 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. Nonetheless, the project recommends that the participating municipalities devise common criteria for identifying complaints and procedures for processing and recording calls.

Yard Waste/Leaf Collection

Summary of Key Dimensions of Service

City or Town	Yard Waste Collection		Seasonal Loose Leaf Collection	Collection Points	Tons Collected		FTE Positions
	Location	Frequency			Yard Waste	Loose Leaves	
Apex	Curbside	1 x week	NA	11,714	6,166	na	10.35
Asheville	Curbside	2 x month	NA	30,590	7,172	na	14.9
Burlington	Curbside	1 x week	4 sweeps	16,723	2,677	3,385	10.5
Cary	Curbside	1 x week	3 sweeps	45,091	14,487	4,884	22.13
Charlotte	Curbside	1 x week	NA	210,781	48,716	na	77
Concord	Curbside	1 x week	3 sweeps	28,524	6,832	1,738	23.1
Durham	Curbside	1 x week	NA	22,500	8,500	na	17
Greensboro	Curbside	1 x week	2 sweeps	81,102	14,055	10,888	46.68
Greenville	Curbside	1 x week	1 x week	19,000	17,000	4,000	16.5
Hickory	Curbside	1 x week	2 sweeps	12,100	2,811	4,025	9.75
High Point	Curbside	1 x week	2 sweeps	35,936	4,939	2,142	14.5
Salisbury	Curbside	1 x week	1 x 3 weeks	10,961	6,030	2,719	8.25
Wilmington	Curbside	1 x week	NA	30,448	11,228	na	21.66
Wilson	Curbside	1 x week	1 x 3 weeks	19,650	6,176	1,564	15.5
Winston-Salem	Curbside	Yard Waste Cart 1 x week Brush every 10 days	2 to 3 sweeps	76,064	21,997	15,183	86.1

NOTES

Municipalities with no reported seasonal leaf collection collect leaves as part of their yard waste collection programs.

EXPLANATORY FACTORS

These are factors that the project found affected yard waste and leaf collection performance and cost in one or more of the municipalities:

Whether or not a fee is charged for collection
Residential/commercial/industrial nature of the community
Policies regarding sizes and types of items collected
Extent of seasonal leaf collection service
Landfill policies and tipping fees

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Town of Apex collects yard waste curbside once per week for all city residents. The town collects vegetative matter from residential landscaping. The town does not operate a seasonal leaf collection, but leaves are collected year-round as part of the weekly service. Land clearing debris is not collected. The town charges $4 per month for collection of yard waste.

There are three grass/vacuum trucks, two two-person limb-chipping crews, and one grapple-truck operator for larger items. These crews cover the town every week using a five-day-a-week schedule.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Positions—Collection	10.0
FTE Positions—Other	0.4
Collection Frequency	
Yard Waste	1 x week
Collection Points	11,714
Tons Collected	
Yard Waste	6,166
Seasonal Leaves	with yard waste
Total Tons Collected	6,166
Monthly Service Fee	$4.00

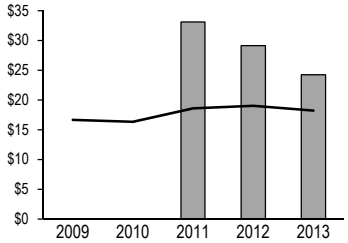
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	53.2%
Operating Costs	33.2%
Capital Costs	13.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$513,002
Operating Costs	$320,360
Capital Costs	$130,345
TOTAL	$963,707

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

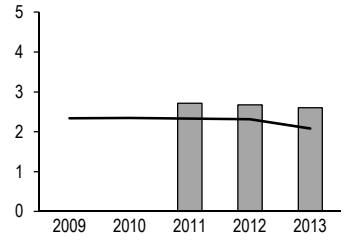
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Apex			$33.12	$29.13	$24.23
Average	$16.65	$16.35	$18.59	$19.04	$18.19

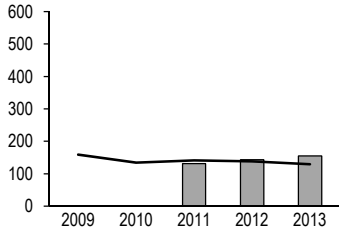
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			2.7	2.7	2.6
Average	2.3	2.3	2.3	2.3	2.1

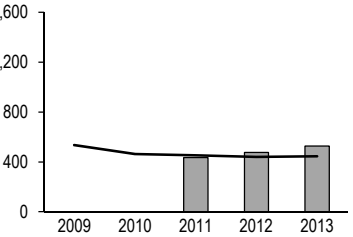
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Apex			131	143	155
Average	159	134	142	138	130

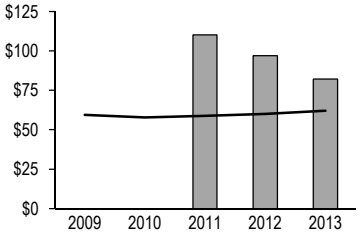
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Apex			436	476	526
Average	536	463	453	440	446

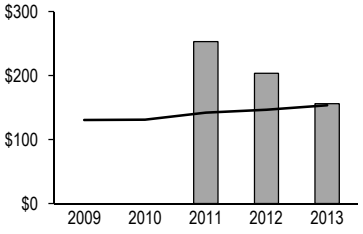
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



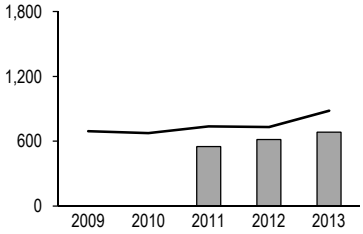
	2009	2010	2011	2012	2013
Apex			$110	$97	$82
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Apex			$253	$204	$156
Average	$131	$131	$142	$146	$153

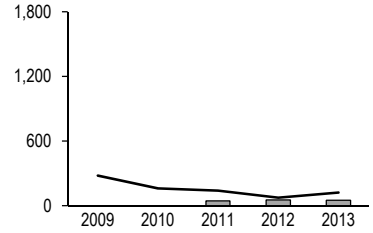
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Apex			549	615	685
Average	694	674	739	732	884

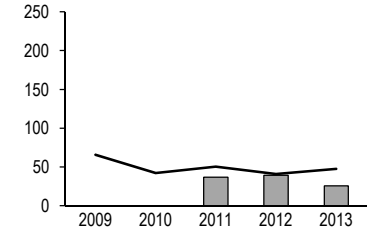
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Apex			46	56	51
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Apex			37	39	26
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Asheville collects yard waste curbside twice per month for all city residents. The city collects yard trimmings no longer than 4 feet and no wider than 6 inches. Grass clippings and materials cut by contractors are not collected.

There are three one-person crews on knucklebooms, scheduled for approximately four-and-one-half days per week. One two-person crew on a tractor and sway car and three three-person crews operating rear packers collect yard waste five days per week.

The city does not charge a fee for yard waste collection. A $5 fee is charged for white goods, and a $10 fee is charged for dead animals.

Starting in FY 2011–2012, Asheville no longer has a separate leaf collection program. Instead, leaves are collected as part of the normal twice-a-month yard waste collection.

Conditions Affecting Service, Performance, and Costs
Asheville had several major winter storms during FY 2011–12 which damaged trees and led to an increase in the tons of yard waste collected.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Collection	14.0
FTE Positions—Other	0.9
Collection Frequency	
Yard Waste	2 x month
Collection Points	30,590
Tons Collected	
Yard Waste	7,172
Seasonal Leaves	with yard waste
Total Tons Collected	7,172
Monthly Service Fee	No

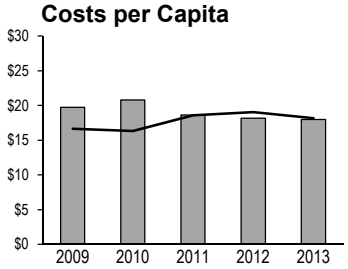
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	41.1%
Operating Costs	48.6%
Capital Costs	10.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$637,987
Operating Costs	$753,208
Capital Costs	$159,990
TOTAL	$1,551,185

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

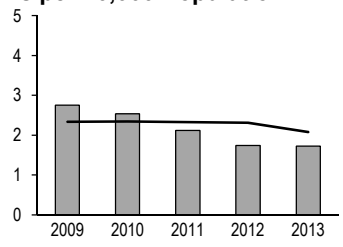
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Asheville	$19.75	$20.81	$18.63	$18.17	$17.99
Average	$16.65	$16.35	$18.59	$19.04	$18.19

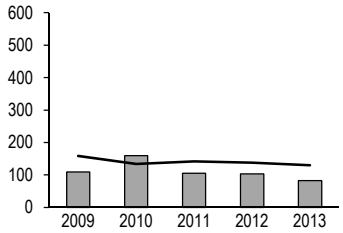
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	2.8	2.5	2.1	1.7	1.7
Average	2.3	2.3	2.3	2.3	2.1

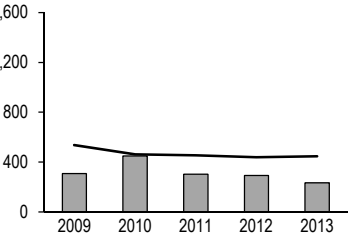
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	109	160	106	104	83
Average	159	134	142	138	130

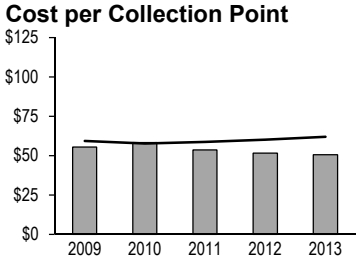
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Asheville	307	448	304	294	234
Average	536	463	453	440	446

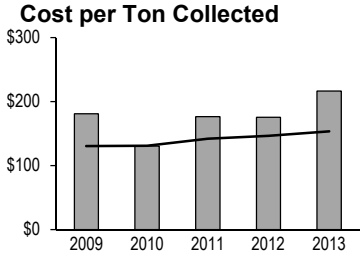
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



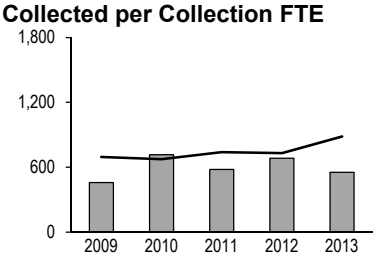
	2009	2010	2011	2012	2013
Asheville	$56	$58	$54	$52	$51
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Asheville	$181	$130	$176	$176	$216
Average	$131	$131	$142	$146	$153

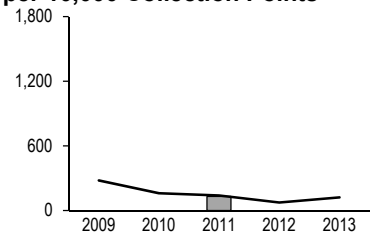
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Asheville	458	714	579	682	552
Average	694	674	739	732	884

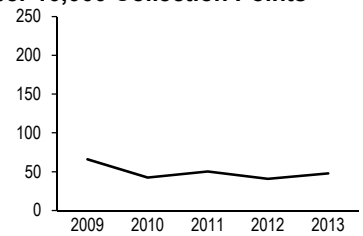
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Asheville			130		
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Asheville					
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Yard waste is collected by the Burlington Sanitation Division once per week. Residents may put yard waste in cans, bags, or simply stack it curbside. The amount per household cannot exceed 50 pounds each week. There is a $4.50 charge for each 3 cubic yards of yard waste removed; the first 3 cubic yards are free.

The city uses two three-person crews four days per week. Each crew has one driver and two collectors and uses a rear loader.

Burlington's Grounds and Cemetery Division conducts seasonal loose leaf collection from mid-October through January. Leaves are placed curbside and collected by vacuum. Four sweeps are made through each section of the city. Additionally, call-in collections are available in February. When not performing loose leaf collection, permanent employees provide mowing and lawn and grounds care at other times of the year. The ability to separate out costs is somewhat difficult.

Loose leaf collection is done with five crews, each consisting of one driver and two collectors using a box dump and vacuum machine. One of the collectors on each crew is a part-time employee. The city also uses one self-contained one-armed leaf truck with one permanent employee. Leaves are also accepted in the regular weekly yard waste collection if they are bagged or placed in a container.

Conditions Affecting Service, Performance, and Costs
The city does not track complaints.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Collection	10.0
FTE Positions—Other	0.5
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	4 sweeps
Collection Points	16,723
Tons Collected	
Yard Waste	2,677
Seasonal Leaves	3,385
Total Tons Collected	6,062
Monthly Service Fee	$4.50 for special bulk pickup, 3 cubic yards

Full Cost Profile

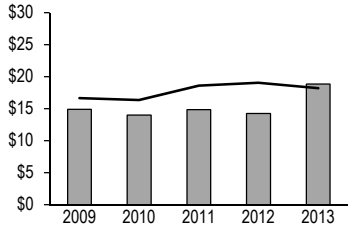
Cost Breakdown by Percentage	
Personal Services	43.0%
Operating Costs	34.1%
Capital Costs	22.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$414,406
Operating Costs	$329,112
Capital Costs	$221,175
TOTAL	$964,693

Burlington Yard Waste/Leaf Collection

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

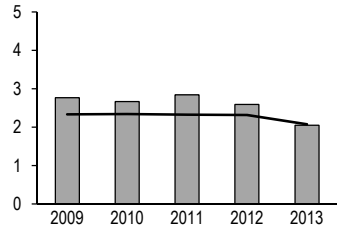
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Burlington	$14.90	$14.00	$14.83	$14.24	$18.84
Average	$16.65	$16.35	$18.59	$19.04	$18.19

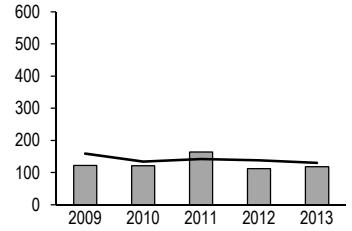
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	2.8	2.7	2.8	2.6	2.1
Average	2.3	2.3	2.3	2.3	2.1

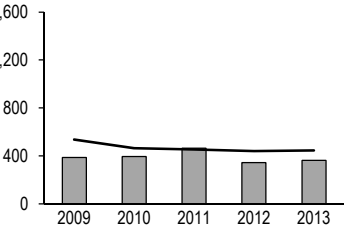
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	122	122	164	112	118
Average	159	134	142	138	130

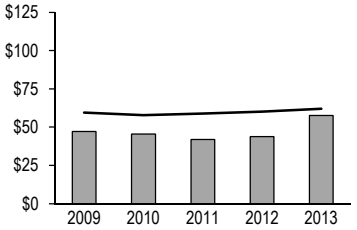
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Burlington	386	396	464	345	362
Average	536	463	453	440	446

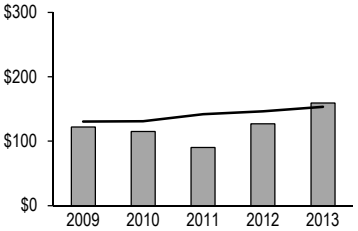
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



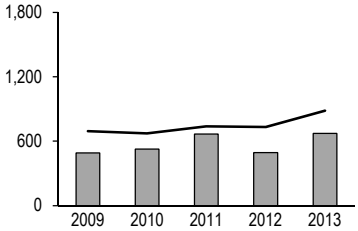
	2009	2010	2011	2012	2013
Burlington	$47	$46	$42	$44	$58
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Burlington	$122	$115	$90	$127	$159
Average	$131	$131	$142	$146	$153

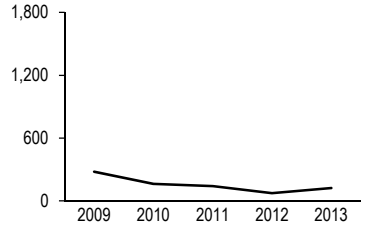
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Burlington	492	527	667	495	674
Average	694	674	739	732	884

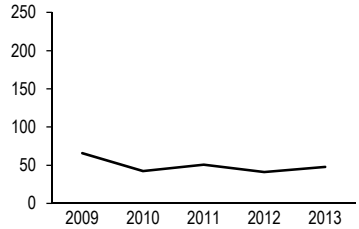
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Burlington					
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Burlington					
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Cary's yard waste is collected curbside weekly on the same day the customer's regular trash is collected. The yard waste program includes the collection of grass clippings, pine straw, fallen leaves, shrubbery, twigs, small tree limbs, and Christmas trees. Branches must be shorter than 4 feet in length and less than 4 inches in diameter. The total volume to be picked up at a household cannot exceed 240 cubic feet. There is no separate fee charged for yard waste collection.

Town crews collect all yard waste at the curb. Collections are done Tuesday through Friday using four crews with four people in each crew—a driver and three collectors. Additionally, a special annual Christmas tree collection is made at the curb in January.

Cary has a seasonal leaf collection program that collects two times in the fall and one time in the spring. Leaves are collected curbside by vacuum by nine crews, each consisting of one driver and two collectors. The driver is a regular full-time employee, while the collectors are seasonal temporary workers.

Conditions Affecting Service, Performance, and Costs
Cary defines valid complaints as those that have been verified in the field by a supervisor.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Collection	21.0
FTE Positions—Other	1.1
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	3 sweeps
Collection Points	45,091
Tons Collected	
Yard Waste	14,487
Seasonal Leaves	4,884
Total Tons Collected	19,371
Monthly Service Fee	No

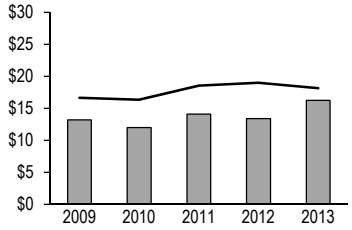
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	51.2%
Operating Costs	40.2%
Capital Costs	8.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,186,731
Operating Costs	$931,177
Capital Costs	$199,110
TOTAL	$2,317,018

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

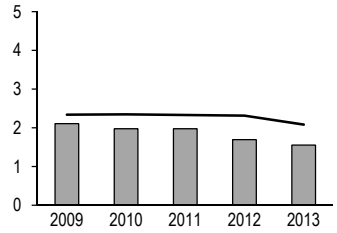
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Cary	$13.22	$12.01	$14.12	$13.41	$16.27
Average	$16.65	$16.35	$18.59	$19.04	$18.19

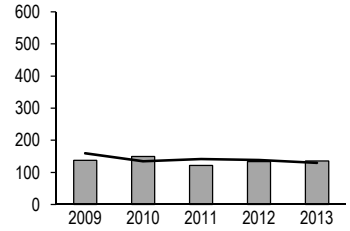
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	2.1	2.0	2.0	1.7	1.6
Average	2.3	2.3	2.3	2.3	2.1

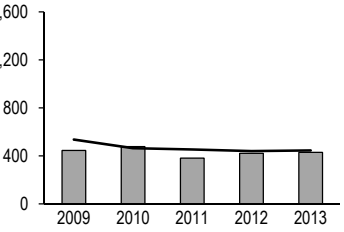
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Cary	138	149	122	134	136
Average	159	134	142	138	130

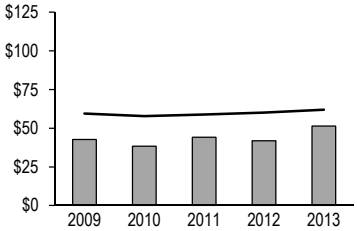
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Cary	444	477	379	420	430
Average	536	463	453	440	446

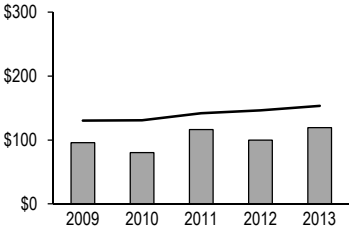
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



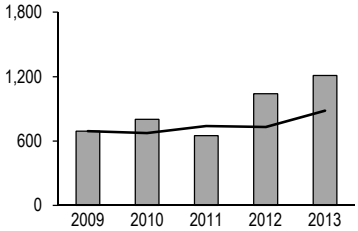
	2009	2010	2011	2012	2013
Cary	$43	$38	$44	$42	$51
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Cary	$96	$80	$116	$100	$120
Average	$131	$131	$142	$146	$153

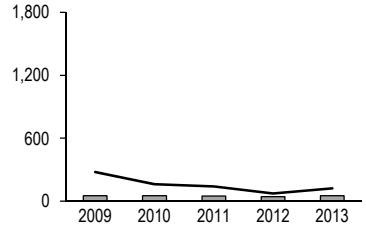
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Cary	692	803	652	1,042	1,211
Average	694	674	739	732	884

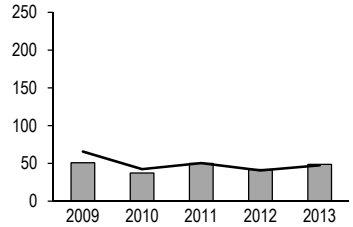
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Cary	51	51	50	42	53
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Cary	51	37	50	42	49
Average	66	42	50	41	48

Charlotte Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Charlotte collects yard waste once per week curbside. The collection process was significantly revised for FY 2010–11. Previously Charlotte had been divided into zones, with private contractors competing and providing some yard waste services. However, the city now performs all yard waste collection.

Yard waste includes leaves, stems, grass, limbs, and other residential organic matter. Limbs should be separated in piles small enough for one individual to handle. Leaves and grass clippings must be placed in untied plastic bags or in uncovered trash cans. Yard waste placed at the curb by a commercial landscaping service will not be collected by the city. The city of Charlotte used thirty-four two-person crews working from rear loaders to service the entire city. Additional trucks and staff are allocated as a yard waste reserve.

Leaves are collected in bags and are debagged at the curb as part of the regular yard waste service. A special seasonal leaf collection is not done by the city of Charlotte.

Conditions Affecting Service, Performance, and Costs

Starting with FY 2010–11, Charlotte's yard waste function is being wholly performed by the city. In earlier years it was done by a combination of city staff and a zone contract.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	77.0
FTE Positions—Other	0.0
Collection Frequency	
Yard Waste	1 x week
Collection Points	210,781
Tons Collected	
Yard Waste	48,716
Seasonal Leaves	with yard waste
Total Tons Collected	48,716
Monthly Service Fee	No

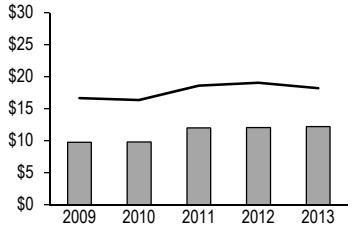
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	41.0%
Operating Costs	43.6%
Capital Costs	15.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,831,162
Operating Costs	$4,070,549
Capital Costs	$1,437,461
TOTAL	$9,339,172

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

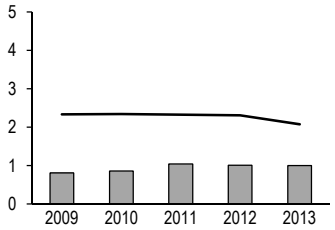
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Charlotte	$9.73	$9.81	$12.02	$12.08	$12.20
Average	$16.65	$16.35	$18.59	$19.04	$18.19

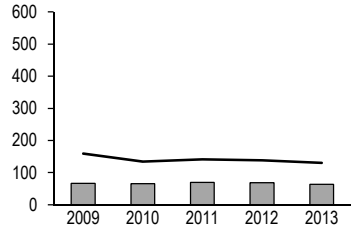
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	0.8	0.9	1.0	1.0	1.0
Average	2.3	2.3	2.3	2.3	2.1

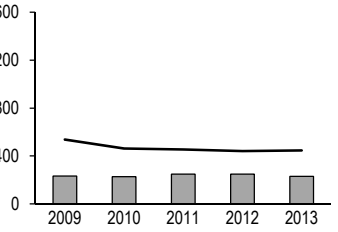
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Charlotte	67	66	70	69	64
Average	159	134	142	138	130

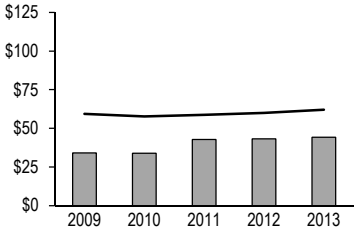
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	233	227	248	248	231
Average	536	463	453	440	446

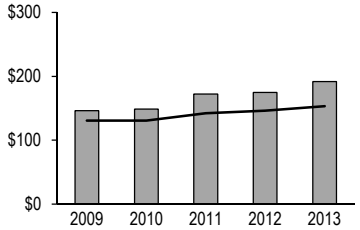
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



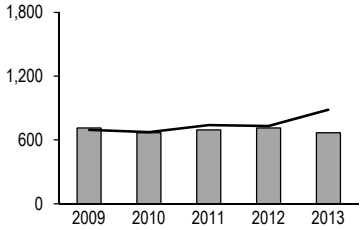
	2009	2010	2011	2012	2013
Charlotte	$34	$34	$43	$43	$44
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Charlotte	$146	$149	$172	$175	$192
Average	$131	$131	$142	$146	$153

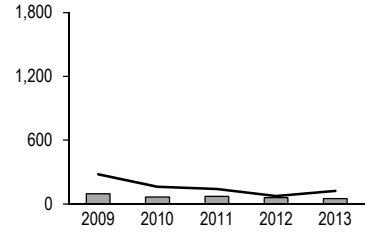
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Charlotte	712	668	696	712	667
Average	694	674	739	732	884

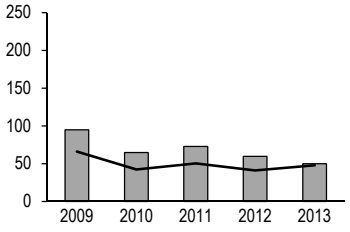
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	95	65	73	60	50
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Charlotte	95	65	73	60	50
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Concord collects all yard waste once per week. Yard waste includes limbs, logs, grass clippings, shrubbery clippings, and leaves.

Concord used three two-person crews with garbage trucks and a one-person crew with a dump truck to collect yard waste during FY 2012–13. Four two-person crews also were used to collect limbs and brush with knuckleboom trucks on a weekly basis.

Concord's seasonal loose leaf collection runs from mid-October through mid-February. Each street is serviced following a publicized schedule a minimum of three times for loose leaf collection during this period. Residents who bag their leaves receive weekly collection along with the normal yard waste collection program.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Collection	22.35
FTE Positions—Other	0.75
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	3 sweeps
Collection Points	28,524
Tons Collected	
Yard Waste	6,832
Seasonal Leaves	1,738
Total Tons Collected	8,570
Monthly Service Fee	No

Full Cost Profile

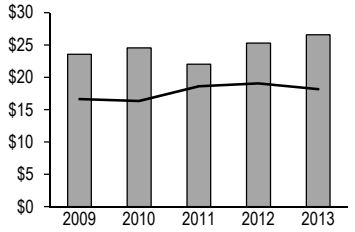
Cost Breakdown by Percentage	
Personal Services	54.1%
Operating Costs	29.8%
Capital Costs	16.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,170,871
Operating Costs	$644,511
Capital Costs	$347,477
TOTAL	$2,162,859

Concord Yard Waste/Leaf Collection

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

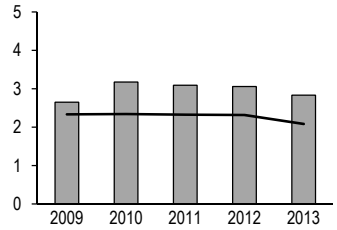
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Concord	$23.54	$24.55	$22.02	$25.30	$26.55
Average	$16.65	$16.35	$18.59	$19.04	$18.19

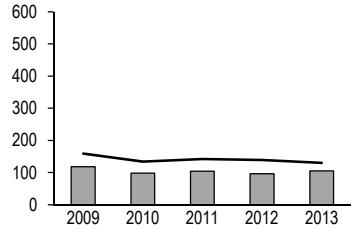
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	2.7	3.2	3.1	3.1	2.8
Average	2.3	2.3	2.3	2.3	2.1

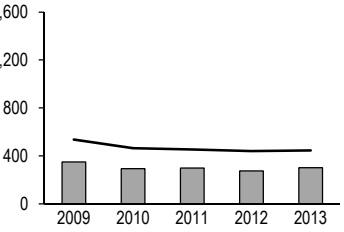
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Concord	118	98	104	96	105
Average	159	134	142	138	130

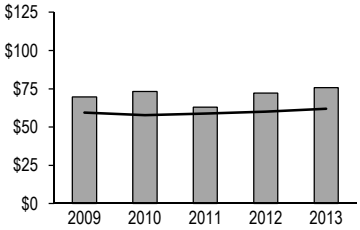
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Concord	350	292	298	273	300
Average	536	463	453	440	446

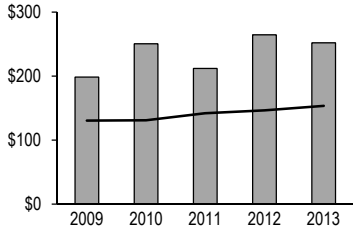
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



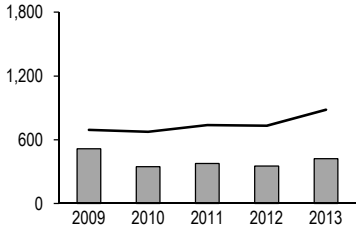
	2009	2010	2011	2012	2013
Concord	$70	$73	$63	$72	$76
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Concord	$199	$251	$212	$264	$252
Average	$131	$131	$142	$146	$153

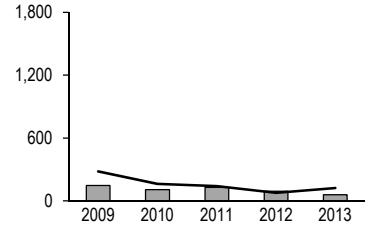
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Concord	516	347	379	353	422
Average	694	674	739	732	884

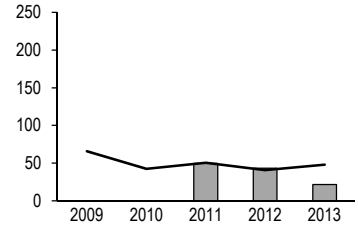
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Concord	145	105	127	90	57
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Concord			50	43	22
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Durham collects yard waste once per week at curbside from customers who pay an annual fee of $60. Yard waste includes grass, weeds, tree trimmings, plants, shrubbery trimmings, and other materials generated from yards. The city offers yard waste pickup service to all single-family residences inside the city limits. Yard waste may be collected from carts, biodegradable bags, or bundles. Customers may purchase up to three carts and may put out up to twenty-five bags per week and an unlimited number of tied bundles.

The city uses six two-person crews to collect yard waste during normal months. These crews cover four quadrants on a ten-hour-a-day, four-day-a-week work schedule. The city also has two one-person crews who work five days per week on a staggered schedule collecting bulky items such as brush.

Durham has no separate seasonal leaf collection service. Leaves are collected in carts or when placed at the curb in biodegradable brown bags during the regular pickup of yard waste.

Conditions Affecting Service, Performance, and Costs
Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,556
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Positions—Collection	17.0
FTE Positions—Other	1.0
Collection Frequency	
Yard Waste	1 x week
Collection Points	22,500
Tons Collected	
Yard Waste	8,500
Seasonal Leaves	with yard waste
Total Tons Collected	8,500
Service Fee	$60 per cart per year

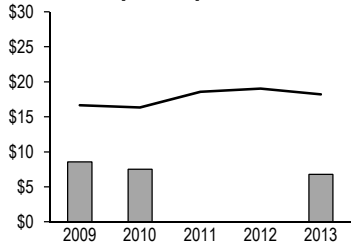
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	54.1%
Operating Costs	24.9%
Capital Costs	21.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$865,384
Operating Costs	$398,121
Capital Costs	$337,212
TOTAL	$1,600,717

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

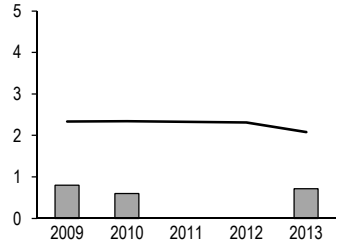
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Durham	$8.56	$7.53			$6.77
Average	$16.65	$16.35	$18.59	$19.04	$18.19

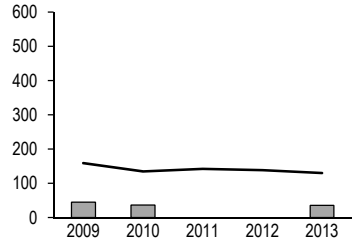
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	0.8	0.6			0.7
Average	2.3	2.3	2.3	2.3	2.1

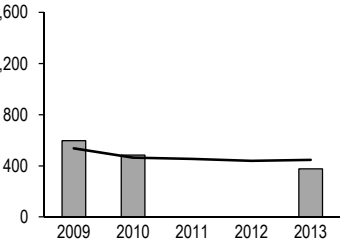
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Durham	45	37			36
Average	159	134	142	138	130

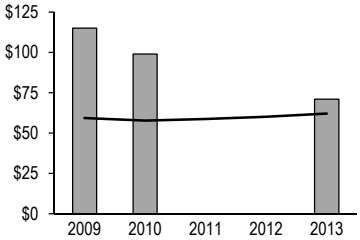
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Durham	598	485			378
Average	536	463	453	440	446

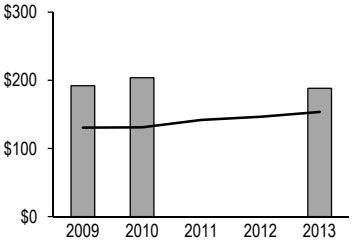
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



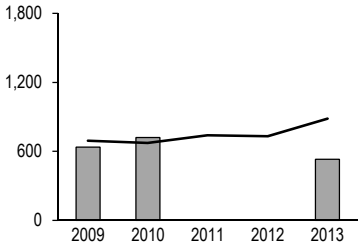
	2009	2010	2011	2012	2013
Durham	$115	$99			$71
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Durham	$192	$204			$188
Average	$131	$131	$142	$146	$153

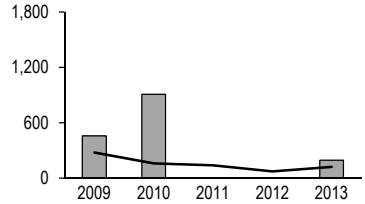
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Durham	636	721			531
Average	694	674	739	732	884

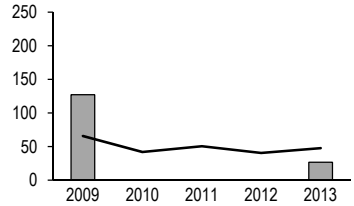
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Durham	458	908			197
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Durham	127				27
Average	66	42	50	41	48

Greensboro Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Greensboro collects yard waste once per week curbside, either in clear plastic bags, thirty-five-gallon containers, or tied in bundles not to exceed 50 pounds or 5 feet in length. Yard waste includes grass, weeds, leaves, tree trimmings, plants, shrubbery trimmings, and other materials generated in yard maintenance. Yard waste does include some bagged leaves during the fall, and this waste is not broken out separately into leaf collection.

The city provides yard waste service to all single-family residences inside the city limits. Yard waste crews include nine two-person crews that rotate between driver and collector. The crews work four days per week, ten hours per day.

Seasonal leaf collection (October through January) is provided by Greensboro's Field Operations Division. Leaves are picked up a minimum of two times from November until mid-January by vacuuming the leaves from the curb.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Collection	45.53
FTE Positions—Other	1.15
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	81,102
Tons Collected	
Yard Waste	14,055
Seasonal Leaves	10,888
Total Tons Collected	24,943
Monthly Service Fee	No

Full Cost Profile

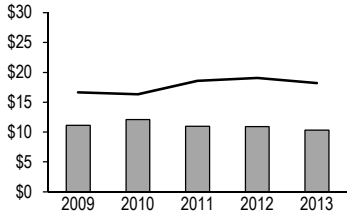
Cost Breakdown by Percentage	
Personal Services	34.6%
Operating Costs	65.4%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$982,017
Operating Costs	$1,857,221
Capital Costs	$0
TOTAL	$2,839,238

Greensboro Yard Waste/Leaf Collection

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

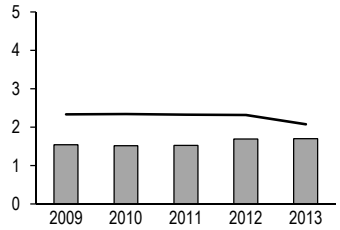
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Greensboro	$11.13	$12.09	$10.95	$10.93	$10.32
Average	$16.65	$16.35	$18.59	$19.04	$18.19

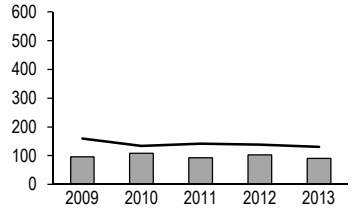
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.5	1.5	1.5	1.7	1.7
Average	2.3	2.3	2.3	2.3	2.1

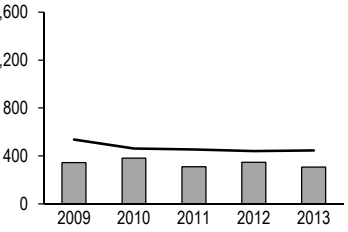
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	96	108	92	103	91
Average	159	134	142	138	130

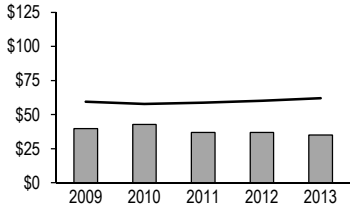
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	345	382	310	346	308
Average	536	463	453	440	446

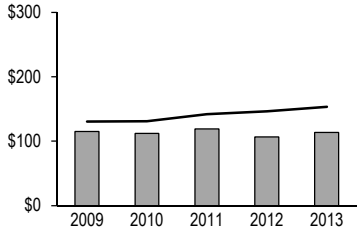
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



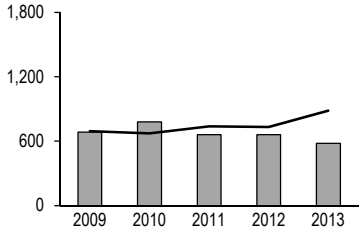
	2009	2010	2011	2012	2013
Greensboro	$40	$43	$37	$37	$35
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Greensboro	$115	$112	$119	$106	$114
Average	$131	$131	$142	$146	$153

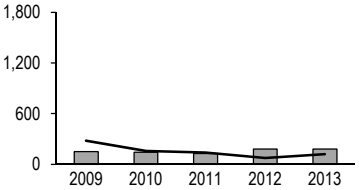
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Greensboro	685	780	661	662	582
Average	694	674	739	732	884

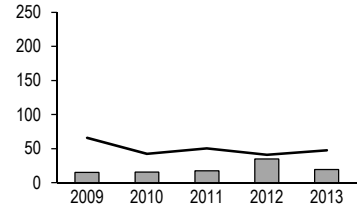
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	153	144	127	180	180
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Greensboro	15	16	18	35	19
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Greenville collects yard waste once per week curbside. Yard waste includes tree limbs up to 6 feet in length or 4 inches in diameter, bushes, grass clippings, and other vegetative matter. The city does not charge a separate fee for yard waste, leaves, or bulky items. It is part of the solid waste fee.

Greenville uses two-person crews to collect yard waste. Crews are made up of a driver and a collection worker. Each crew has an assigned route for each day.

The city's seasonal leaf collection service runs from November to February. Leaves are collected weekly from the backs of curbs. The city uses five crews, each having a driver and two collection workers. The leaf collection crews are all seasonal employees.

Conditions Affecting Service, Performance, and Costs
Greenville does not collect data on complaints for yard waste services.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Collection	14.0
FTE Positions—Other	2.5
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x week
Collection Points	19,000
Tons Collected	
Yard Waste	17,000
Seasonal Leaves	4,000
Total Tons Collected	21,000
Monthly Service Fee	No

Full Cost Profile

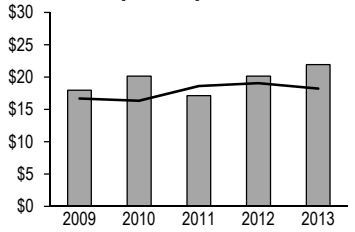
Cost Breakdown by Percentage	
Personal Services	56.5%
Operating Costs	31.6%
Capital Costs	11.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,067,637
Operating Costs	$596,727
Capital Costs	$225,313
TOTAL	$1,889,677

Greenville Yard Waste/Leaf Collection

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

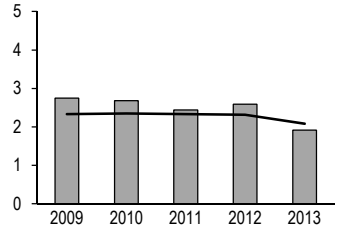
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Greenville	$17.94	$20.15	$17.13	$20.12	$21.94
Average	$16.65	$16.35	$18.59	$19.04	$18.19

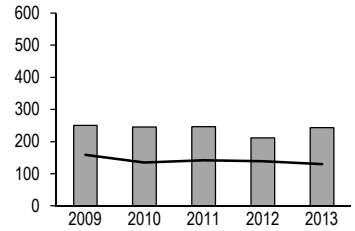
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	2.8	2.7	2.4	2.6	1.9
Average	2.3	2.3	2.3	2.3	2.1

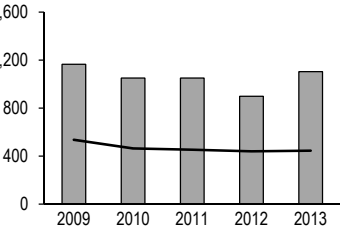
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	251	245	247	212	244
Average	159	134	142	138	130

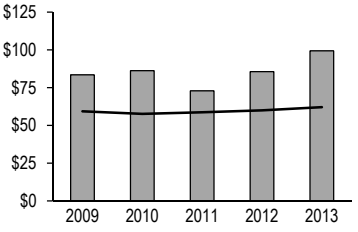
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Greenville	1,167	1,050	1,050	900	1,105
Average	536	463	453	440	446

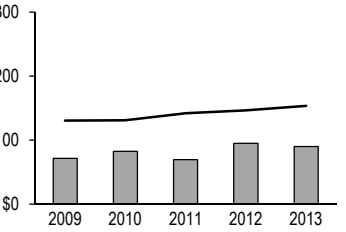
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



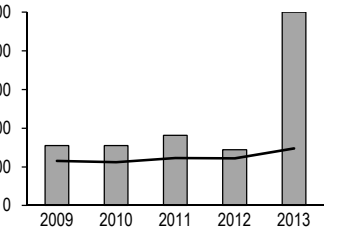
	2009	2010	2011	2012	2013
Greenville	$83	$86	$73	$86	$99
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Greenville	$72	$82	$69	$95	$90
Average	$131	$131	$142	$146	$153

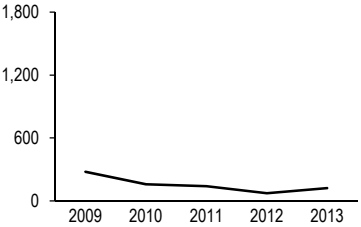
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Greenville	933	933	1,091	867	3,000
Average	694	674	739	732	884

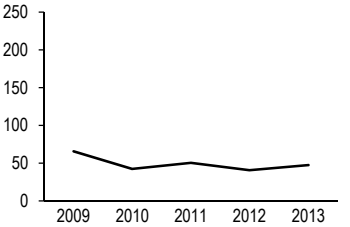
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Greenville					
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Greenville					
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Hickory collects yard waste once per week curbside. Yard waste includes tree limbs less than 6 feet in length and 6 inches in diameter, shrubs, grass clippings, leaves, and other vegetative matter. The city does not charge a separate fee for yard waste, leaves, or bulky items. It is part of the solid waste fee. Residents use either clear plastic bags or open containers.

Hickory is divided into five sections for the yard waste program. Three routes are serviced each day within each section, using three rear loaders with crews comprised of one driver and one laborer each. Large piles are collected with a knuckleboom loader with one driver on a scheduled basis working about half-time.

All yard waste is collected and stockpiled at the city yard waste facility. Debris is ground into mulch or compost and sold back to citizens or used for city projects.

The city's seasonal leaf collection service runs from November to January. There are two sweeps down each city street during this time. City crews use leaf vacuums to collect leaves in box trucks. Hickory uses temporary contract workers to help with leaf collection. These seasonal employees are counted in the total employee count, but only for the one-fourth of the year they work.

Conditions Affecting Service, Performance, and Costs

Hickory's yard waste collection is set up to provide regular service but also takes requests for service when collection is needed. These calls for service cannot be separated out from actual complaints so complaint data cannot be reported for this service area.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Positions—Collection	9.25
FTE Positions—Other	0.5
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	12,100
Tons Collected	
Yard Waste	2,811
Seasonal Leaves	4,025
Total Tons Collected	6,836
Monthly Service Fee	No

Full Cost Profile

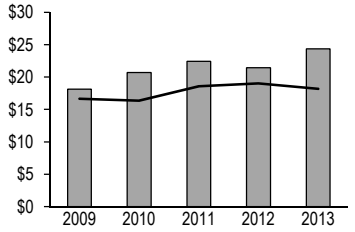
Cost Breakdown by Percentage	
Personal Services	41.0%
Operating Costs	37.5%
Capital Costs	21.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$400,704
Operating Costs	$366,377
Capital Costs	$209,244
TOTAL	$976,325

Hickory Yard Waste/Leaf Collection

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

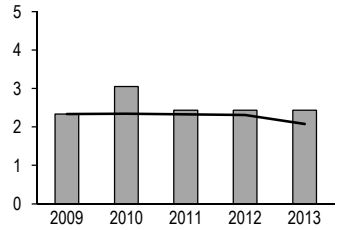
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Hickory	$18.15	$20.69	$22.42	$21.43	$24.38
Average	$16.65	$16.35	$18.59	$19.04	$18.19

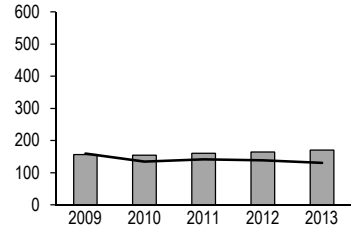
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	2.3	3.1	2.4	2.4	2.4
Average	2.3	2.3	2.3	2.3	2.1

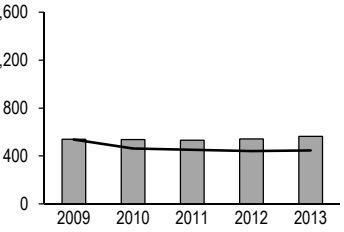
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	157	155	160	164	171
Average	159	134	142	138	130

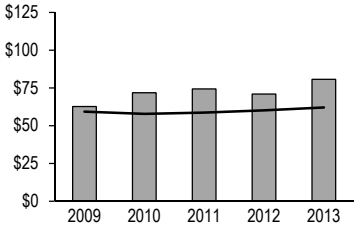
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Hickory	541	536	531	544	565
Average	536	463	453	440	446

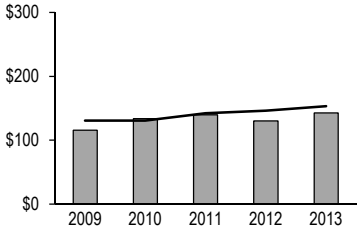
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



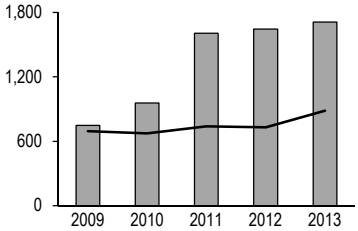
	2009	2010	2011	2012	2013
Hickory	$63	$72	$74	$71	$81
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Hickory	$116	$134	$140	$131	$143
Average	$131	$131	$142	$146	$153

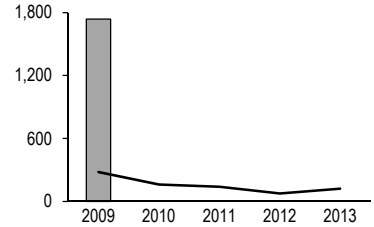
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Hickory	749	957	1,606	1,646	1,709
Average	694	674	739	732	884

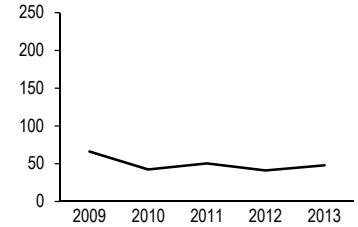
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Hickory	1737				
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Hickory					
Average	66	42	50	41	48

High Point — Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Collectible yard waste in High Point's program consists solely of vegetative matter resulting from landscaping and lawn maintenance, including grass clippings, leaves, brush, tree branches, flowers, and other organic materials.

Yard waste is collected once each week curbside using three-person crews. Each crew is composed of one driver and two collectors. The work schedule is from Monday through Thursday. There is no separate fee charged for yard waste collection.

The city provides two citywide cycles of loose leaf collection beginning mid-November and continuing through mid-January. There are usually three leaf collection crews of one person each on truck-mounted vacuum trucks and four crews with five employees each on pick-up trucks with self-contained vacuums. Bagged leaves are collected once per week with the regular yard waste.

Conditions Affecting Service, Performance, and Costs

There was a shift of employees out of yard waste collection in FY 2009–10. The city had been picking up bulk limbs, but this was discontinued as it was not required by ordinance. The employees were shifted over to bulk white good collection. Stopping collection of the bulk limbs led to a small increase in citizen complaints.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Collection	13.5
FTE Positions—Other	1.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	35,936
Tons Collected	
Yard Waste	4,939
Seasonal Leaves	2,142
Total Tons Collected	7,081
Monthly Service Fee	No

Full Cost Profile

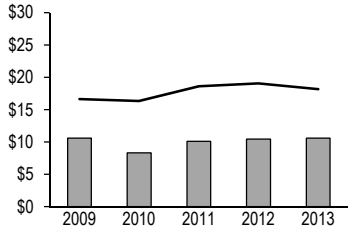
Cost Breakdown by Percentage	
Personal Services	60.4%
Operating Costs	28.0%
Capital Costs	11.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$681,900
Operating Costs	$315,571
Capital Costs	$131,276
TOTAL	$1,128,747

High Point — Yard Waste/Leaf Collection

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

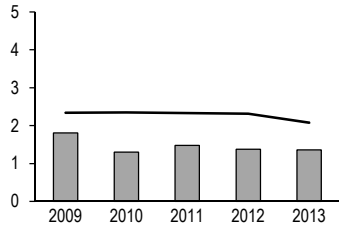
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
High Point	$10.62	$8.35	$10.12	$10.45	$10.61
Average	$16.65	$16.35	$18.59	$19.04	$18.19

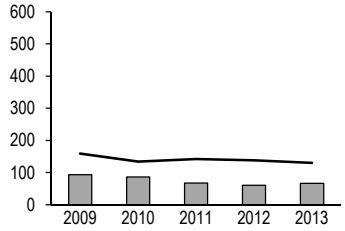
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	1.8	1.3	1.5	1.4	1.4
Average	2.3	2.3	2.3	2.3	2.1

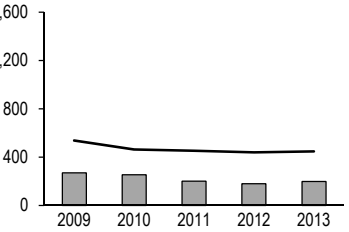
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
High Point	93	87	68	60	67
Average	159	134	142	138	130

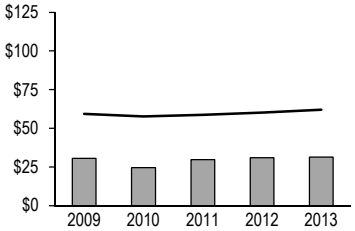
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
High Point	268	254	200	179	197
Average	536	463	453	440	446

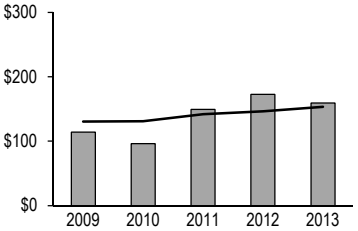
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



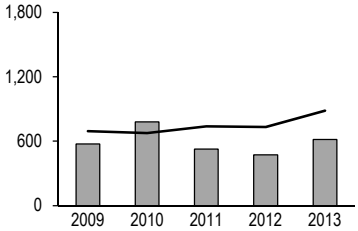
	2009	2010	2011	2012	2013
High Point	$31	$24	$30	$31	$31
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
High Point	$114	$96	$149	$173	$159
Average	$131	$131	$142	$146	$153

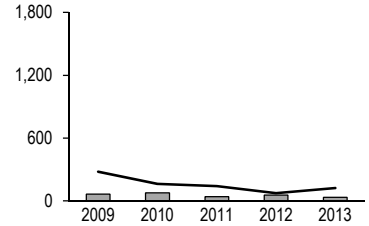
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
High Point	575	781	526	473	616
Average	694	674	739	732	884

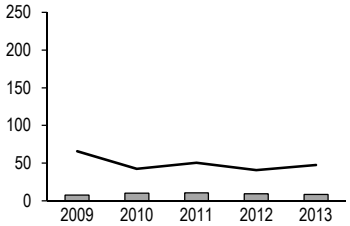
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
High Point	63	76	40	55	32
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
High Point	7	10	10	9	9
Average	66	42	50	41	48

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Yard waste is picked up weekly at the curb in Salisbury. Yard waste includes limbs, shrubs, bagged grass clippings, and bagged leaves. It is collected the same day as trash and recycling materials for city residents.

The city uses two or three two-person crews, each consisting of a driver and laborer, on packer trucks for yard waste collection. One to two additional two-member crews operating two knuckleboom trucks collect large brush piles and limbs. One supervisor patrols the routes throughout the day, coordinating pick-ups and responding to citizen requests.

Loose leaves are collected curbside during leaf season, which runs from mid-October through March. Loose leaves are collected every third week during leaf season. Bagged leaves are collected as part of the weekly yard waste program.

One to seven crews, each composed of an operator, a street maintenance worker, and a seasonal worker, are used for the annual leaf collection program.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Collection	8.0
FTE Positions—Other	0.3
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x 3 weeks
Collection Points	10,961
Tons Collected	
Yard Waste	6,030
Seasonal Leaves	2,719
Total Tons Collected	8,749
Monthly Service Fee	No

Full Cost Profile

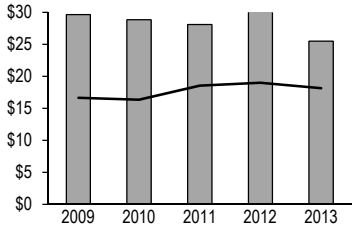
Cost Breakdown by Percentage	
Personal Services	55.7%
Operating Costs	26.8%
Capital Costs	17.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$475,478
Operating Costs	$228,526
Capital Costs	$149,293
TOTAL	$853,297

Salisbury — Yard Waste/Leaf Collection

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

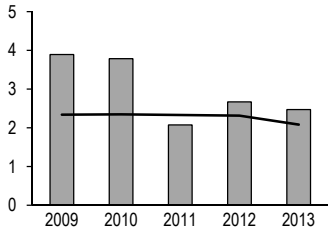
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Salisbury	$29.69	$28.86	$28.10	$32.47	$25.52
Average	$16.65	$16.35	$18.59	$19.04	$18.19

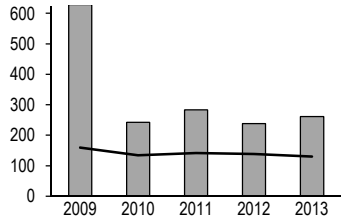
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	3.9	3.8	2.1	2.7	2.5
Average	2.3	2.3	2.3	2.3	2.1

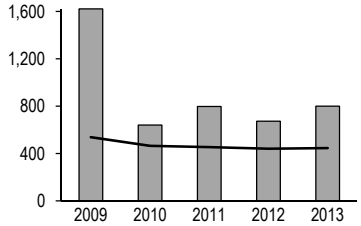
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	629	242	283	239	262
Average	159	134	142	138	130

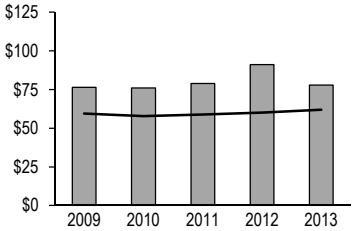
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	1,619	639	795	671	798
Average	536	463	453	440	446

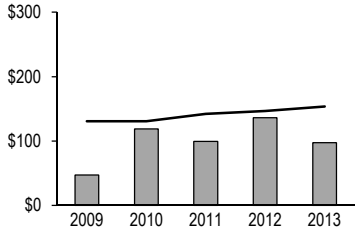
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



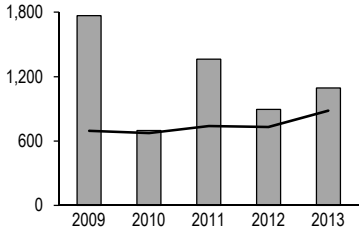
	2009	2010	2011	2012	2013
Salisbury	$76	$76	$79	$91	$78
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Salisbury	$47	$119	$99	$136	$98
Average	$131	$131	$142	$146	$153

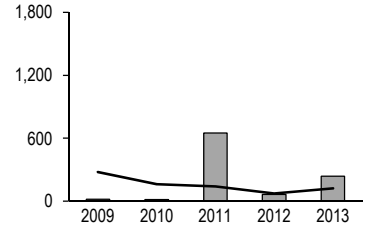
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Salisbury	1,767	697	1,363	894	1,094
Average	694	674	739	732	884

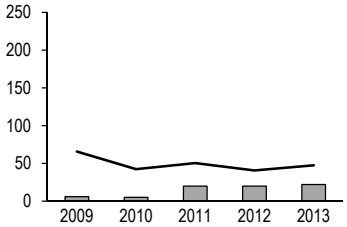
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	18	17	650	65	237
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Salisbury	6	5	20	20	22
Average	66	42	50	41	48

Wilmington — Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The city collects yard waste curbside once per week. Yard waste is defined as organic material, grass and shrubbery clippings, small branches, twigs, leaves, and pine needles. Tree limbs and branches cannot be longer than 6 feet in length or more than 6 inches in diameter.

There is no limit on the type or number of containers that residents can use when placing yard waste at the curb for pick up, but the amount of crew time spent at each household is limited to fifteen minutes. Yard waste is picked up using packer trucks staffed by two-person crews consisting of one driver and one laborer working four ten-hour days each week.

There was no separate fee for yard waste collection, including for bulky items. However, the cost is included in the fee for solid waste collection.

Leaf collection is not a separate service for the city of Wilmington. Leaves are collected throughout the year with the regular yard waste program.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income U.S. Census 2010	$57,892

Service Profile

FTE Positions—Collection	21.33
FTE Positions—Other	0.33
Collection Frequency	
Yard Waste	1 x week
Collection Points	30,448
Tons Collected	
Yard Waste	11,228
Seasonal Leaves	with yard waste
Total Tons Collected	11,228
Monthly Service Fee	Included in solid waste fee

Full Cost Profile

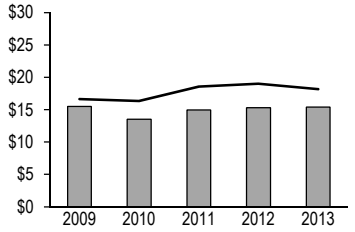
Cost Breakdown by Percentage	
Personal Services	48.1%
Operating Costs	39.9%
Capital Costs	12.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$813,731
Operating Costs	$674,657
Capital Costs	$203,193
TOTAL	$1,691,581

Wilmington — Yard Waste/Leaf Collection

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

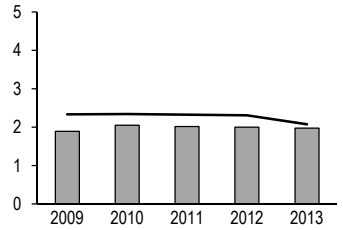
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Wilmington	$15.50	$13.51	$14.95	$15.33	$15.42
Average	$16.65	$16.35	$18.59	$19.04	$18.19

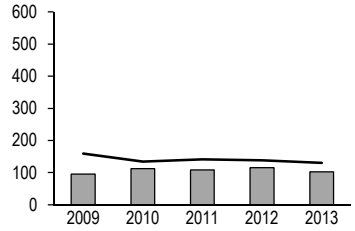
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	1.9	2.1	2.0	2.0	2.0
Average	2.3	2.3	2.3	2.3	2.1

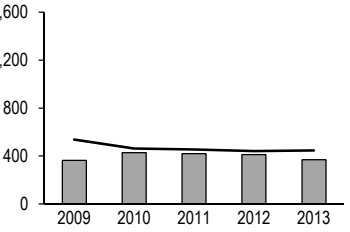
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	96	112	109	115	102
Average	159	134	142	138	130

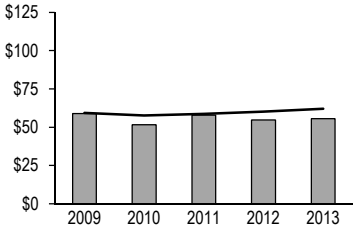
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	363	427	420	411	369
Average	536	463	453	440	446

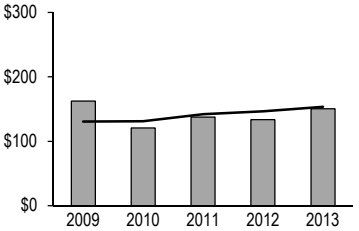
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



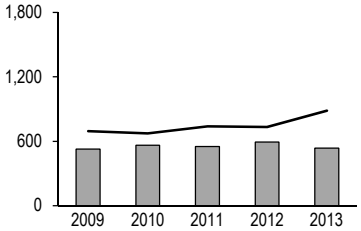
	2009	2010	2011	2012	2013
Wilmington	$59	$52	$58	$55	$56
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Wilmington	$162	$121	$138	$133	$151
Average	$131	$131	$142	$146	$153

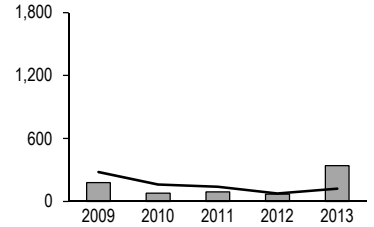
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Wilmington	527	563	552	593	535
Average	694	674	739	732	884

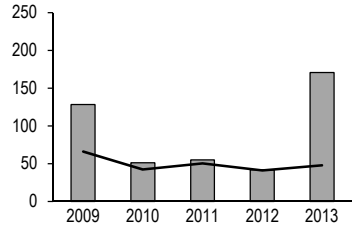
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	179	79	91	70	342
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Wilmington	128	51	55	42	171
Average	66	42	50	41	48

Wilson — Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Yard waste is containerized in bags, sheets, roll-out containers, or other container types for collection by rear-loader packers. Yard waste is collected once per week by compost crews on the same day as residential refuse collection.

The city uses two three-person crews on Tuesdays and Fridays and three or four three-person crews on Mondays and Thursdays to collect yard waste. Each crew is composed of one driver and two workers. These crews rotate collection between residential refuse and yard waste. A one-person crew uses a knuckleboom truck to collect large limbs daily.

The city's leaf season is from mid-October to mid-January. Leaves are collected loose at the curb on a one-to-three-week cycle. The city uses leaf vacuum machines and compacting leaf trucks to collect loose leaves.

Six to eight three-person crews are used to collect loose leaves. The drivers are permanent employees. Collectors are seasonal employees.

Conditions Affecting Service, Performance, and Costs

During FY 2011–2012, Wilson picked up additional yard waste generated from Hurrican Irene. An estimated extra 3,494 tons were collected after the storm.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Collection	15.5
FTE Positions—Other	0.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x 3 weeks
Collection Points	19,650
Tons Collected	
Yard Waste	6,176
Seasonal Leaves	1,564
Total Tons Collected	7,740
Monthly Service Fee	Included in solid waste fee

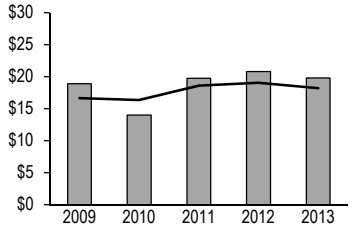
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	45.7%
Operating Costs	34.5%
Capital Costs	19.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$446,888
Operating Costs	$336,816
Capital Costs	$193,432
TOTAL	$977,136

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

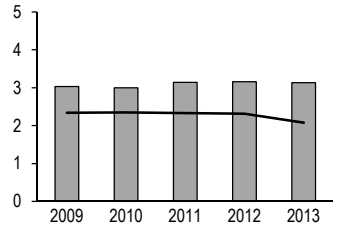
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Wilson	$18.90	$14.00	$19.71	$20.80	$19.76
Average	$16.65	$16.35	$18.59	$19.04	$18.19

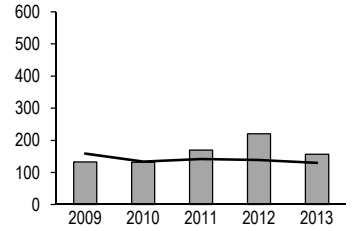
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	3.0	3.0	3.1	3.2	3.1
Average	2.3	2.3	2.3	2.3	2.1

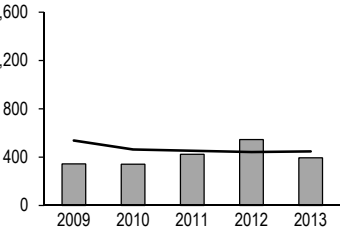
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	133	132	170	221	157
Average	159	134	142	138	130

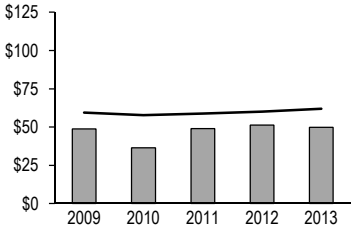
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	343	342	422	545	394
Average	536	463	453	440	446

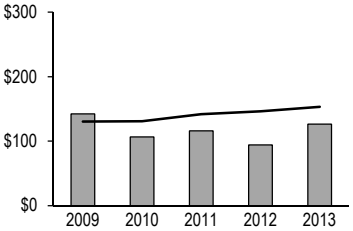
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



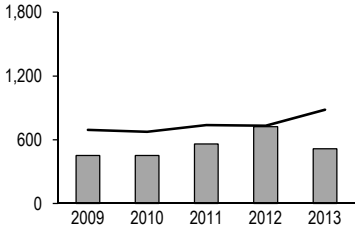
	2009	2010	2011	2012	2013
Wilson	$49	$36	$49	$51	$50
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Wilson	$142	$106	$116	$94	$126
Average	$131	$131	$142	$146	$153

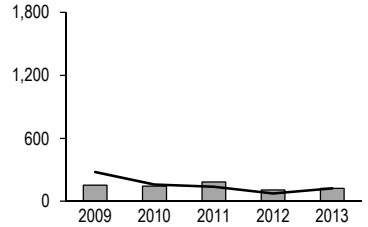
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Wilson	453	453	560	723	516
Average	694	674	739	732	884

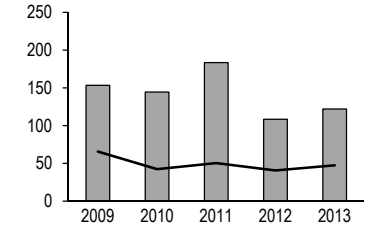
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	154	145	183	109	122
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Wilson	154	145	183	109	122
Average	66	42	50	41	48

Winston-Salem Yard Waste/Leaf Collection

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The city operates a curbside collection program for brush, leaves, and bulky items. Brush is collected throughout the year, while leaves and bulky items are collected on a seasonal basis. Brush is defined as small tree limbs, branches, and shrubbery clippings. Tree and shrubbery limbs cannot be larger than 6 inches in diameter or 6 feet in length. A city ordinance requires that brush be collected once every ten working days except during leaf season. There were no separate fees for the curbside collection program.

The yard waste cart program provides weekly collection of containerized yard waste placed in ninety-six-gallon carts. The city uses six one-person crews using automated packers and one two-person crew using a rear-loading packer to service these carts. Collection is provided Monday through Thursday. Carts are delivered on Friday.

Residents who participate in the yard waste cart program pay an annual $60 fee. Residents also pay for the ninety-six-gallon carts at a cost of $60 if the cart is picked up or $65 if the cart is delivered. A household can have up to three carts.

The city's seasonal leaf collection program picks up leaves that are deposited at the curb between November 1 and January 15. Loose leaves are vacuumed two to three times during this time period. Containerized leaves are collected throughout the year as part of the yard waste program. The city uses thirty-two crews for seasonal leaf collection, with a combination of equipment operators, maintenance workers, and both permanent and seasonal workers. During FY 2011–2012 several automated vacuum trucks were added to the fleet.

Conditions Affecting Service, Performance, and Costs

The performance measure "cost per collection point" is based on the total 76,064 collection points.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	86.1
FTE Positions—Other	0.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x 3 weeks
Brush	1 x 10 days
Collection Points	
Brush	76,064
Leaves	76,064
Yard Waste Cart	12,105
Tons Collected	
Yard Waste	21,997
Seasonal Leaves	15,183
Total Tons Collected	37,180
Monthly Service Fee	No

Full Cost Profile

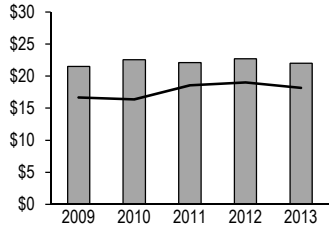
Cost Breakdown by Percentage	
Personal Services	51.2%
Operating Costs	32.8%
Capital Costs	15.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,627,588
Operating Costs	$1,683,776
Capital Costs	$817,505
TOTAL	$5,128,869

Winston-Salem Yard Waste/Leaf Collection

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

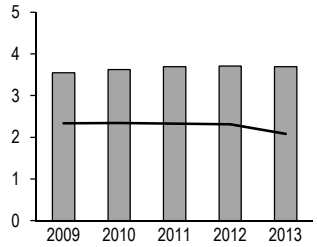
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2009	2010	2011	2012	2013
Winston-Salem	$21.51	$22.55	$22.13	$22.69	$21.99
Average	$16.65	$16.35	$18.59	$19.04	$18.19

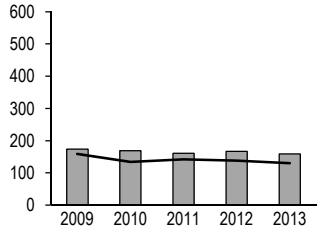
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	3.6	3.6	3.7	3.7	3.7
Average	2.3	2.3	2.3	2.3	2.1

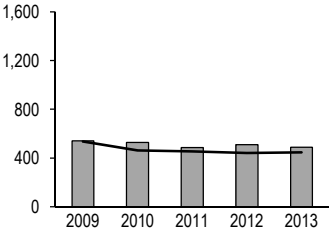
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	174	169	161	167	159
Average	159	134	142	138	130

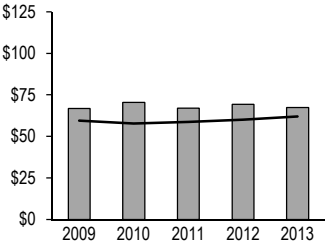
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	540	528	486	510	489
Average	536	463	453	440	446

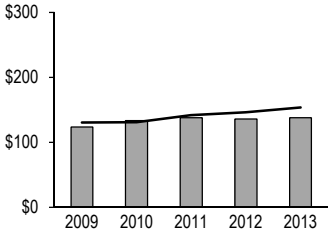
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



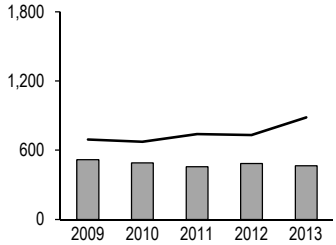
	2009	2010	2011	2012	2013
Winston-Salem	$67	$70	$67	$69	$67
Average	$59	$58	$59	$60	$62

Yard Waste and Leaf Collection Cost per Ton Collected



	2009	2010	2011	2012	2013
Winston-Salem	$123	$133	$138	$136	$138
Average	$131	$131	$142	$146	$153

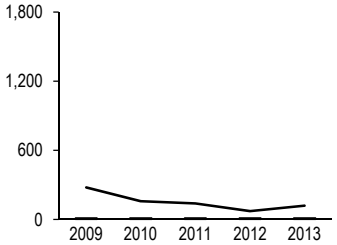
Yard Waste and Leaf Tons Collected per Collection FTE



	2009	2010	2011	2012	2013
Winston-Salem	517	490	457	484	464
Average	694	674	739	732	884

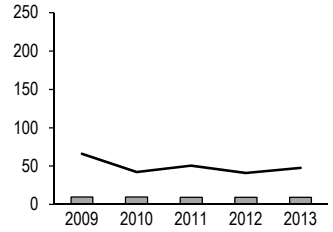
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	16	16	16	16	16
Average	279	160	139	74	122

Valid Complaints per 10,000 Collection Points



	2009	2010	2011	2012	2013
Winston-Salem	10	10	9	9	9
Average	66	42	50	41	48

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

POLICE SERVICES

PERFORMANCE MEASURES FOR POLICE SERVICES

SERVICE DEFINITION

Police Services consist of all police activities performed by sworn and non-sworn personnel. This includes, but is not limited to, activities performed by patrol, traffic, investigations, special units, support staff, supervisors, and police administration. This definition captures all functions of the police department except for emergency communications.

NOTES ON PERFORMANCE MEASURES

1. Dispatched Calls

These are calls resulting in the dispatch of an officer. Most dispatches result from calls coming into the emergency communications center or the police department, but some are self-initiated by officers on duty. Multiple calls resulting in the dispatch of several officers are counted as one.

2. Uniform Crime Reporting (UCR) Part I Crimes

Uniform Crime Reporting (UCR) Part I crimes include crimes against persons (criminal homicide, forcible rape, robbery, and aggravated assault) and crimes against property (burglary, larceny, motor vehicle theft, and arson).

3. Incident-Based Reporting (IBR) Part I Crimes

Incident-Based Reporting (IBR) Part I crimes include crimes against persons (criminal homicide, forcible rape, robbery, and aggravated assault) and crimes against property (burglary, larceny, motor vehicle theft, and arson). The difference between the UCR method and the IBR method for reporting crimes is that IBR counts crime and arrest activities at the incident level, as opposed to counting only the most serious crime with multiple offenses.

4. Full-Time Equivalent (FTE) Positions: Sworn Officers

The number of full-time equivalent (FTE) positions is the number of budgeted positions for sworn officers during the fiscal year.

5. Response Time to High Priority Calls

Each police department defines high priority calls somewhat differently. The definitions generally refer to crimes in progress or situations where there are risks of injury or threats to life or property. Response time commences with the dispatch of an officer and ends with the arrival of the officer at the scene of the incident. The officer may be dispatched while on patrol or from the police station.

Police Services

Summary of Key Dimensions of Service

City or Town	Police Department Accredited?	Number of Sworn Officers	Average Length of Service for Sworn Officers (Years)	Number of Patrol Vehicles	Reporting Format	Part I Crimes			Part II Crimes	Dispatched Calls	Number of Traffic Accidents
						Against Persons	Against Property	Total			
Apex	No	62	12.6	49	IBR	51	659	710	1,591	34,423	890
Asheville	Yes	219	10.2	197	IBR	405	4,951	5,356	5,172	115,348	4,937
Burlington	Yes	125	10.0	151	IBR	369	2,976	3,345	5,212	69,601	2,471
Cary	Yes	179	10.3	130	IBR	108	2,112	2,220	2,691	139,419	4,131
Concord	No	158.25	10.2	178	IBR	114	2,872	2,986	1,954	77,514	3,319
Durham	Yes	514	10.1	364	IBR	1,787	11,081	12,868	9,131	296,449	11,238
Greensboro	Yes	673	11.0	240	IBR	1,382	12,092	13,474	16,737	295,256	8,237
Greenville	Yes	187	11.6	168	IBR	481	4,012	4,493	5,764	88,828	3,634
Hickory	No	118	9.6	153	IBR	171	2,427	2,598	3,462	67,930	3,276
High Point	No	229	10.8	229	UCR	445	4,414	4,859	3,413	122,412	2,734
Salisbury	Yes	82	9.6	90	IBR	196	1,868	2,064	2,188	30,610	1,720
Wilmington	Yes	263	12.0	277	UCR	616	5,478	6,094	5,415	173,980	3,930
Wilson	Yes	119	10.0	127	UCR	240	2,230	2,470	3,489	98,304	2,225
Winston-Salem	Yes	569	11.4	474	IBR	1,535	13,592	15,127	34,735	277,196	8,410

EXPLANATORY FACTORS

These are factors that the project found affected police services performance and cost in one or more of the municipalities:

Demographic makeup of the community
Community policing policies
Population density and land area
Downtown area characteristics
Use of incident-based reporting
Presence of unique problems in particular areas, such as drugs or gangs
Emphasis on quick response to all calls
Vehicle take-home policy
Beat structure
Use of special units

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Town of Apex Police Department provides an array of police services, including patrol, investigations, a special response unit, and school resource officers at the high school and middle schools located in the town.

The city had sixty-two sworn officer positions authorized for the year, with an average length of service of more than twelve years. Police services occupies a headquarters located in downtown Apex, newly built in 2010, which houses all divisions in the department. There is also an unmanned substation attached to one of the town fire stations.

Officers in Apex in the partrol division work twelve-hour modified DuPont schedules. Each patrol squad is also assigned a flex officer. The traffic unit works a modified DuPont schedule based on crash statistics. The investigations division works Monday through Friday from 8 a.m. to 5 p.m., with one investigator working from 2 p.m. to 11 p.m. The investigator working the late shift is also the on-call investigator, and this position rotates every week.

Patrol and investigation units are assigned individual vehicles. Command staff also have individually assigned vehicles, which are the only take-home vehicles in the fleet.

The police department was successful in clearing a total of 289 Part I cases in FY 2012–13.

The definition of a high priority call in Apex is any call when the immediate arrival and presence of the police may prevent death or injury or alleviate the threat of death or injury.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income	$97,201
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	62.0
FTE Positions—Other	16.0
Marked and Unmarked Patrol Vehicles	49
Part I Crimes Reported	
Homicide	0
Rape	12
Robbery	11
Assault	28
Burglary	114
Larceny	523
Auto Theft	19
Arson	3
TOTAL	710
Part II Crimes Reported	1,591
Part I Crimes Cleared	
Persons	40
Property	249
TOTAL	289
Reporting Format	IBR
Number of Calls Dispatched	34,423
Number of Traffic Accidents	890
Property Damage for Accidents	$123,600

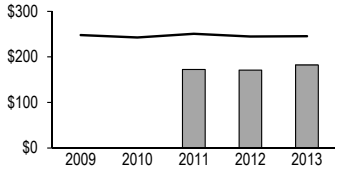
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	71.0%
Operating Costs	20.7%
Capital Costs	8.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,151,687
Operating Costs	$1,503,906
Capital Costs	$596,212
TOTAL	$7,251,805

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

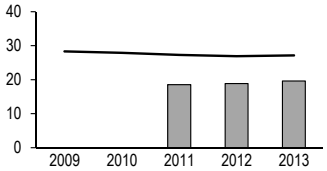
Resource Measures

Police Services Costs per Capita



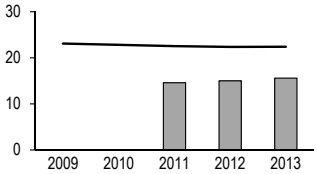
	2009	2010	2011	2012	2013
Apex			$172	$171	$182
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Apex			18.5	18.9	19.6
Average	28.3	27.9	27.3	26.9	27.2

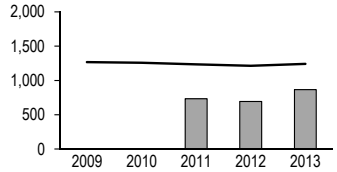
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Apex			14.6	15.0	15.6
Average	23.1	22.8	22.5	22.4	22.4

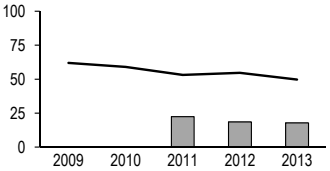
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Apex			734	694	866
Average	1,267	1,259	1,234	1,213	1,241

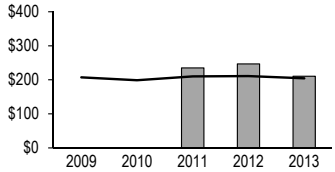
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Apex			22.4	18.5	17.9
Average	62.0	59.0	53.2	54.7	49.7

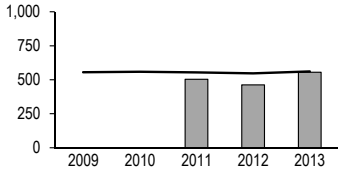
Efficiency Measures

Police Services Cost per Call Dispatched



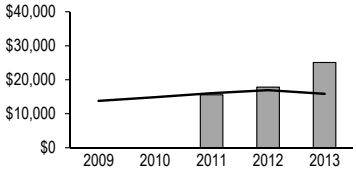
	2009	2010	2011	2012	2013
Apex			$235	$247	$211
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



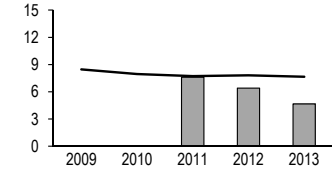
	2009	2010	2011	2012	2013
Apex			504	463	555
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Apex			$15,558	$17,842	$25,093
Average	$13,807	$14,860	$16,069	$16,930	$15,876

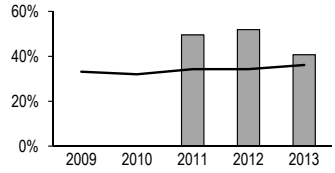
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Apex			7.6	6.4	4.7
Average	8.5	8.0	7.7	7.8	7.7

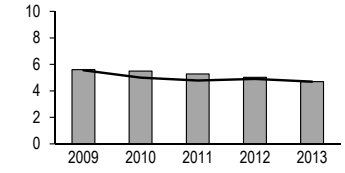
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Apex			49.5%	51.9%	40.7%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Apex	5.6	5.5	5.3	5.0	4.7
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Asheville Police Department provides an array of police services, including patrol, investigations, a telephone response unit, a canine unit, a special response unit, animal control, a drug enforcement unit, a hostage negotiation team, a hazardous device team, and several other special programs.

The city had 219 sworn officer positions authorized for the year, with an average length of service of about ten years. Police services occupies five facilities, the main downtown facility shared by the fire department and four substations.

Officers in Asheville work a varied DuPont schedule based on a fourteen-day period, working six twelve-hour days and one eight-hour day. The schedule requires two or three days on followed by two days off in alternating sequences over the two-week period. A power squad is assigned to work the evening shift during the peak time of calls. Detectives work four ten-hour days with half the detectives off Monday and the other half off on Fridays. Detective supervisors work five eight-hour days.

Specialty units such as traffic, SWAT, and detectives have assigned take-home cars. Additionally, sergeants and higher-ranked officers also have assigned vehicles. Patrol cars have multiple users.

The police department was successful in clearing a total of 2,066 Part I cases in FY 2012–13. The definition of a high priority call in Asheville is any call dealing with a crime in progress or a situation where there is immediate danger to a person.

Conditions Affecting Service, Performance, and Costs

Asheville switched over its crime reporting format from UCR to IBR in June 2009.

Significant efforts have been made, starting in FY 2006–07, to reduce drug crime in Asheville. The number of Part I crimes has declined, which is believed to be due in part to the focus on reducing drug crime.

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls are not included in the response time. Due to a better classification of high priority calls at the Asheville communications unit, police have been able to lower their response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Sworn	219.0
FTE Positions—Other	50.0
Marked and Unmarked Patrol Vehicles	197
Part I Crimes Reported	
Homicide	4
Rape	30
Robbery	137
Assault	234
Burglary	725
Larceny	3,821
Auto Theft	353
Arson	52
TOTAL	5,356
Part II Crimes Reported	5,172
Part I Crimes Cleared	
Persons	253
Property	1,813
TOTAL	2,066
Reporting Format	IBR
Number of Calls Dispatched	115,348
Number of Traffic Accidents	4,937
Property Damage for Accidents	$15,641,624

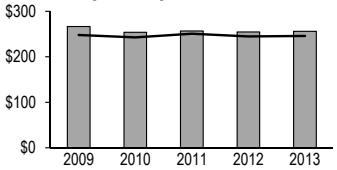
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	69.9%
Operating Costs	22.7%
Capital Costs	7.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$15,435,278
Operating Costs	$5,005,066
Capital Costs	$1,633,175
TOTAL	$22,073,519

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

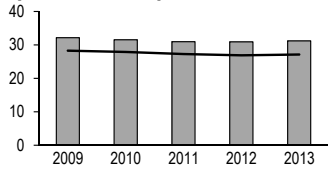
Resource Measures

Police Services Costs per Capita



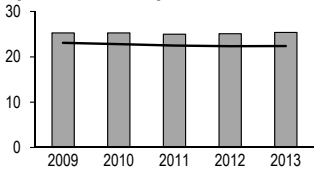
	2009	2010	2011	2012	2013
Asheville	$266.65	$254	$257	$254	$256
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	32.2	31.6	31.0	30.9	31.2
Average	28.3	27.9	27.3	26.9	27.2

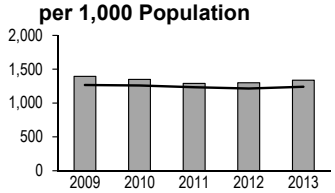
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	25.3	25.3	25.0	25.1	25.4
Average	23.1	22.8	22.5	22.4	22.4

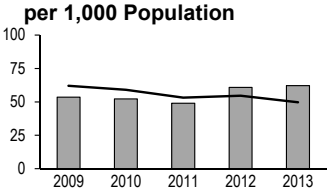
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	1,394	1,348	1,289	1,299	1,338
Average	1,267	1,259	1,234	1,213	1,241

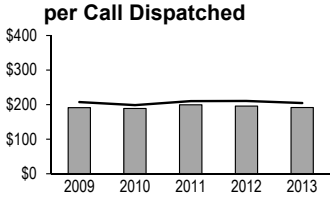
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	53.6	52.3	48.9	60.9	62.1
Average	62.0	59.0	53.2	54.7	49.7

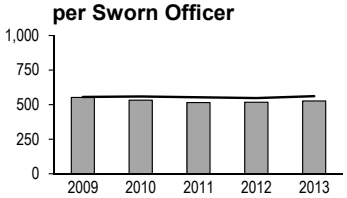
Efficiency Measures

Police Services Cost per Call Dispatched



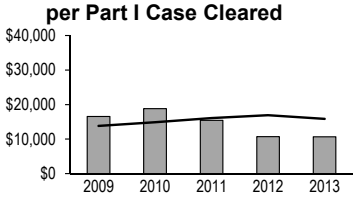
	2009	2010	2011	2012	2013
Asheville	$191	$189	$199	$196	$191
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



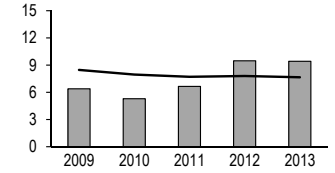
	2009	2010	2011	2012	2013
Asheville	552	533	516	517	527
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Asheville	$16,536	$18,814	$15,442	$10,698	$10,684
Average	$13,807	$14,860	$16,069	$16,930	$15,876

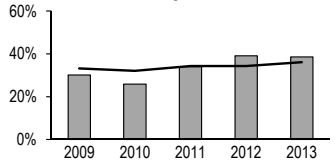
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Asheville	6.4	5.3	6.7	9.5	9.4
Average	8.5	8.0	7.7	7.8	7.7

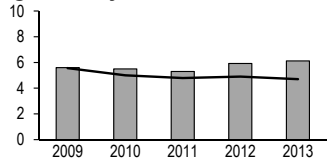
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Asheville	30.1%	25.9%	34.0%	39.1%	38.6%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Asheville	5.6	5.5	5.3	5.9	6.1
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Burlington Police Department provides an array of police services, including patrol, investigations, a telephone response unit, a canine unit, a motorcycle unit, a special response unit, a drug enforcement unit, an animal control officer, and other programs.

The town had 125 sworn officer positions authorized for the year, with an average length of service of ten years. Police services occupies its own separate building. There are also several substations and a separate facility for animal control services and a pet adoption center.

Burlington's uniform patrol officers work a rotating day or night shift. The officers rotate from days to nights or nights to days every twenty-eight days. They work a modified DuPont Schedule in which they work twelve-hour shifts for a total of 2,080 hours per year. The schedule includes eighty-four court hours and forty training hours. Half the officers work either days or nights, on Monday and Tuesday, off Wednesday and Thursday, work Friday, Saturday, and Sunday. They then are off Monday and Tuesday, work Wednesday and Thursday, and are off Friday, Saturday, and Sunday. The other half of the uniformed patrol officers work the opposite days on or off to provide twenty-four-hour, seven-day-a-week, fifty-two-week-a-year coverage.

Vehicles are assigned following a take-home policy. All sworn employees with the exception of the Chief, Deputy Chief, and Major have take-home vehicles.

The definition of a high priority call in Burlington is any call requiring immediate police response. This includes crimes in progress where there is a threat to life and officers responding to traffic crashes or other incidents creating a life-threatening situation.

The police department was successful in clearing a total of 1,295 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs
The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls are not included in the response time.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income	$46,461
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	125.0
FTE Positions—Other	30.0
Marked and Unmarked Patrol Vehicles	151
Part I Crimes Reported	
Homicide	1
Rape	24
Robbery	104
Assault	240
Burglary	505
Larceny	2,332
Auto Theft	131
Arson	588
TOTAL	3,925
Part II Crimes Reported	5,212
Part I Crimes Cleared	
Persons	257
Property	1,038
TOTAL	1,295
Reporting Format	IBR
Number of Calls Dispatched	69,601
Number of Traffic Accidents	2,471
Property Damage for Accidents	$6,150,041

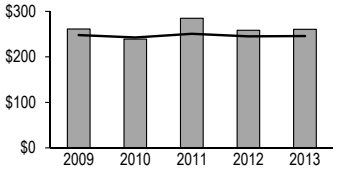
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	76.3%
Operating Costs	14.2%
Capital Costs	9.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,181,618
Operating Costs	$1,898,780
Capital Costs	$1,256,498
TOTAL	$13,336,896

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

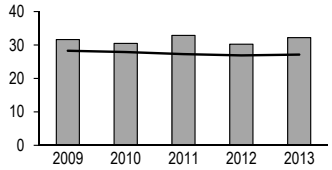
Resource Measures

Police Services Costs per Capita



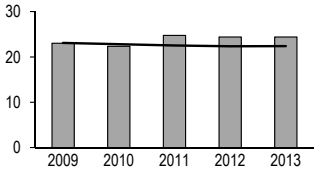
	2009	2010	2011	2012	2013
Burlington	$261.30	$239	$285	$258	$261
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	31.6	30.5	32.9	30.2	32.2
Average	28.3	27.9	27.3	26.9	27.2

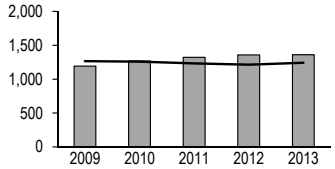
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	23.0	22.4	24.8	24.4	24.4
Average	23.1	22.8	22.5	22.4	22.4

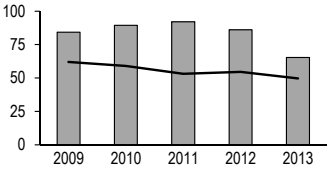
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	1,193	1,269	1,323	1,358	1,360
Average	1,267	1,259	1,234	1,213	1,241

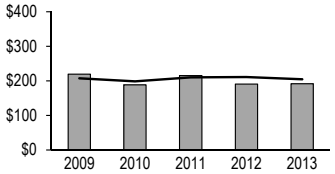
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	84.2	89.4	92.1	86.1	65.3
Average	62.0	59.0	53.2	54.7	49.7

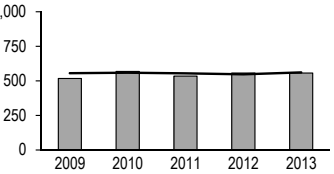
Efficiency Measures

Police Services Cost per Call Dispatched



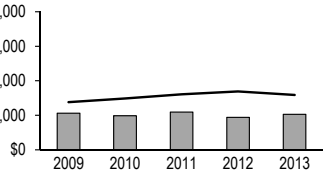
	2009	2010	2011	2012	2013
Burlington	$219	$188	$215	$190	$192
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



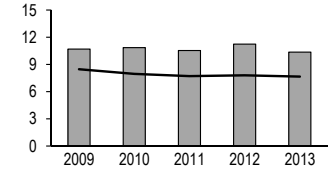
	2009	2010	2011	2012	2013
Burlington	518	568	534	557	557
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Burlington	$10,614	$9,853	$10,917	$9,431	$10,299
Average	$13,807	$14,860	$16,069	$16,930	$15,876

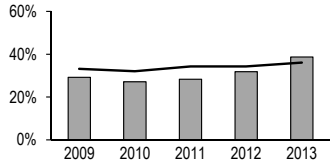
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Burlington	10.7	10.8	10.5	11.2	10.4
Average	8.5	8.0	7.7	7.8	7.7

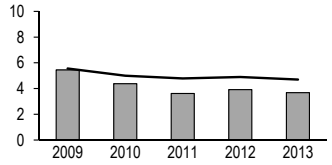
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Burlington	29.2%	27.1%	28.3%	31.8%	38.7%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Burlington	5.4	4.4	3.6	3.9	3.7
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Cary Police Department provides an array of police services, including patrol, investigations, a motorcycle unit, a special response unit, bicycle patrol, animal control, drug enforcement, a youth services program for public schools, and a canine unit.

The town had 179 sworn officer positions authorized for the fiscal year, with an average length of service of 10.3 years. The primary police headquarters is located in a three-story building shared with the town's technology services department. The department also operates three substations.

In order to provide continuous service to the citizens of Cary, personnel are assigned to permanent shifts. These shifts overlap by design to provide sufficient protection during shift changes and to provide additional coverage during the times of peak activity. Tuesday through Friday the staff consists of three platoons of officers working ten-hour shifts. Saturday through Monday the staff consists of two platoons of officers working twelve-and-a-half-hour shifts. Investigators work on-call schedules and are also scheduled to work some evening hours to ensure coverage during the most active times of the day.

Two uniformed patrol officers are assigned to each marked vehicle. Traffic officers and detectives are assigned individual vehicles. Only the detective on call is allowed to take home a vehicle, and the on-call assignment rotates.

The town defines a high priority call as one that is life-threatening in nature.

The police department was successful in clearing a total of 744 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income	$108,956
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	179.0
FTE Positions—Other	14.5
Marked and Unmarked Patrol Vehicles	130
Part I Crimes Reported	
Homicide	2
Rape	17
Robbery	34
Assault	55
Burglary	412
Larceny	1,614
Auto Theft	82
Arson	4
TOTAL	2,220
Part II Crimes Reported	2,691
Part I Crimes Cleared	
Persons	89
Property	655
TOTAL	744
Reporting Format	IBR
Number of Calls Dispatched	139,419
Number of Traffic Accidents	431
Property Damage for Accidents	$12,428,059

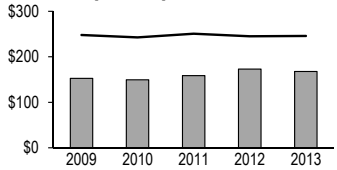
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	73.9%
Operating Costs	20.5%
Capital Costs	5.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,651,561
Operating Costs	$4,890,924
Capital Costs	$1,339,046
TOTAL	$23,881,531

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

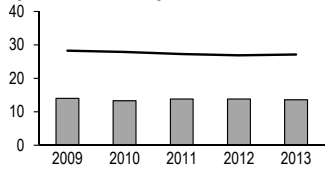
Resource Measures

Police Services Costs per Capita



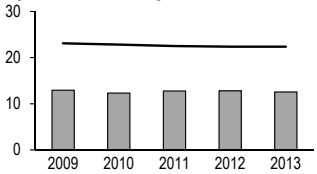
	2009	2010	2011	2012	2013
Cary	$152.58	$150	$159	$173	$168
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Cary	14.0	13.3	13.8	13.8	13.6
Average	28.3	27.9	27.3	26.9	27.2

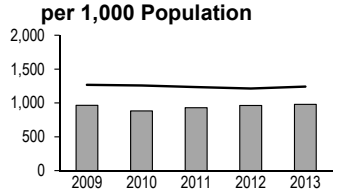
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Cary	12.9	12.3	12.8	12.8	12.6
Average	23.1	22.8	22.5	22.4	22.4

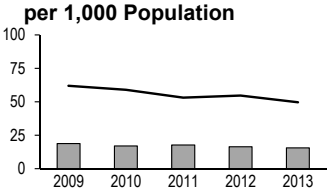
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Cary	964	883	931	964	979
Average	1,267	1,259	1,234	1,213	1,241

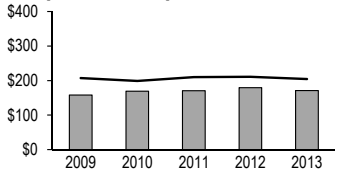
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Cary	18.8	17.1	17.7	16.5	15.6
Average	62.0	59.0	53.2	54.7	49.7

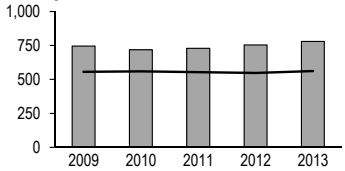
Efficiency Measures

Police Services Cost per Call Dispatched



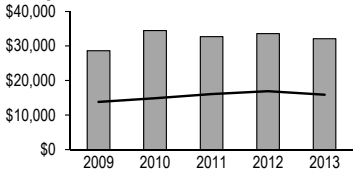
	2009	2010	2011	2012	2013
Cary	$158	$169	$170	$180	$171
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



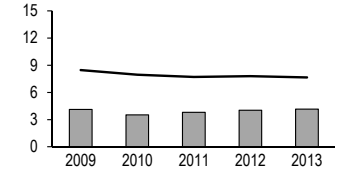
	2009	2010	2011	2012	2013
Cary	746	719	729	754	779
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Cary	$28,624	$34,450	$32,694	$33,603	$32,099
Average	$13,807	$14,860	$16,069	$16,930	$15,876

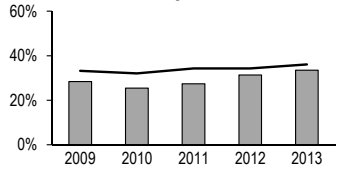
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Cary	4.1	3.5	3.8	4.0	4.2
Average	8.5	8.0	7.7	7.8	7.7

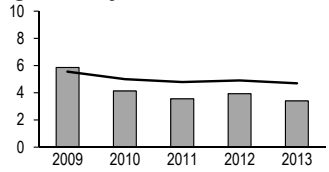
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Cary	28.4%	25.5%	27.4%	31.3%	33.5%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Cary	5.9	4.1	3.6	3.9	3.4
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Concord's police department provides an array of police services, including patrol, investigations, a traffic unit, a telephone response unit, a canine unit, a special response unit, a bicycle patrol unit, a drug enforcement unit, and other programs such as school resource officers.

The city had 158.25 sworn officer positions authorized for the fiscal year, with an average length of service of ten years. The police headquarters is in a new separate building located downtown. Four substations are used, two in fire stations and two in shopping malls.

Uniformed patrol officers work twelve-hour rotating shifts. Investigators work five eight-hour days on first and second shifts. District Commanders have the authority to change individual schedules to meet peak demands.

The city defines high priority emergency calls as those involving an assault in progress, personal injury, breaking and entering, or robbery in progress.

Concord uses a one-on-one car plan. Officers may take their vehicles home if they live in the city or within one mile of the city limits.

The police department was successful in clearing a total of 1,826 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls are not included.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Sworn	158.25
FTE Positions—Other	20.0
Marked and Unmarked Patrol Vehicles	178
Part I Crimes Reported	
Homicide	4
Rape	16
Robbery	51
Assault	43
Burglary	465
Larceny	2,267
Auto Theft	126
Arson	14
TOTAL	2,986
Part II Crimes Reported	1,954
Part I Crimes Cleared	
Persons	79
Property	1,747
TOTAL	1,826
Reporting Format	IBR
Number of Calls Dispatched	77,514
Number of Traffic Accidents	3,319
Property Damage for Accidents	$11,492,057

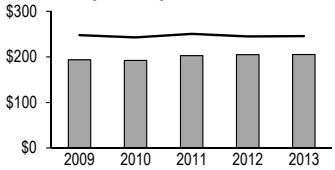
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.6%
Operating Costs	19.5%
Capital Costs	9.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$11,804,009
Operating Costs	$3,266,477
Capital Costs	$1,656,753
TOTAL	$16,727,239

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

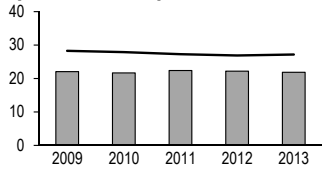
Resource Measures

Police Services Costs per Capita



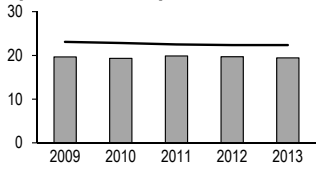
	2009	2010	2011	2012	2013
Concord	$193.71	$192	$203	$205	$205
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Concord	22.0	21.7	22.4	22.2	21.9
Average	28.3	27.9	27.3	26.9	27.2

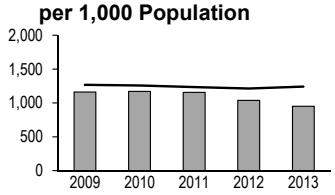
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Concord	19.7	19.3	19.9	19.7	19.4
Average	23.1	22.8	22.5	22.4	22.4

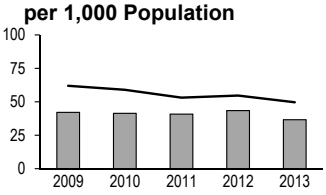
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Concord	1,161	1,171	1,156	1,038	952
Average	1,267	1,259	1,234	1,213	1,241

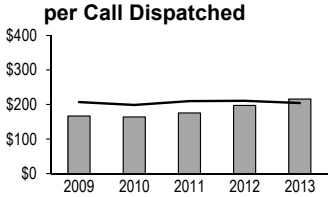
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Concord	42.1	41.4	40.8	43.4	36.7
Average	62.0	59.0	53.2	54.7	49.7

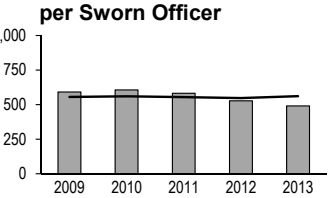
Efficiency Measures

Police Services Cost per Call Dispatched



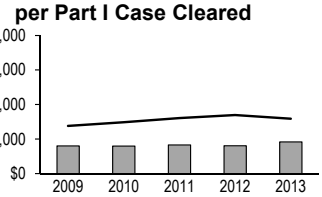
	2009	2010	2011	2012	2013
Concord	$167	$164	$175	$197	$216
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



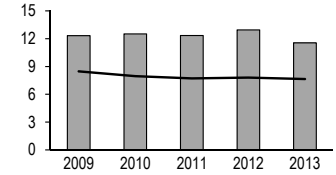
	2009	2010	2011	2012	2013
Concord	591	606	582	527	490
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Concord	$7,999	$7,944	$8,268	$8,032	$9,161
Average	$13,807	$14,860	$16,069	$16,930	$15,876

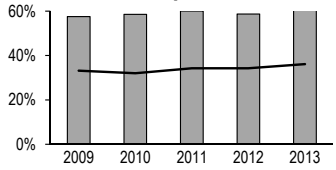
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Concord	12.3	12.5	12.3	12.9	11.5
Average	8.5	8.0	7.7	7.8	7.7

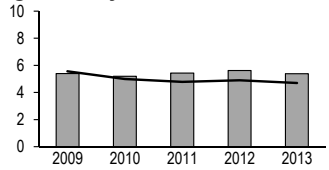
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Concord	57.5%	58.5%	60.1%	58.7%	61.2%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Concord	5.4	5.2	5.4	5.6	5.4
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Durham provides an array of police services, including patrol, investigations, a traffic unit, a telephone response unit, a forensics laboratory, a canine unit, a motorcycle unit, a special response unit, a bicycle patrol unit, drug enforcement, and other selected programs.

The city had 514 sworn officer positions authorized for the fiscal year, with an average length of service of 10.1 years. Police headquarters is in a five-story building located in the downtown area that houses administrative offices, training and recruitment, personnel services, crime analysis, fiscal services, information and technology, special operations, criminal investigations, records, community services, telephone response, and warrants. The city also maintains five substations, each staffed with a captain, a lieutenant, sergeants, corporals, master patrol officers, investigators, and a secretary.

The uniform patrol schedule includes four platoons, each working twelve-hour rotating shifts that total 168 hours in a twenty-eight-day period. Some officers work staggered hours to accommodate peak times.

Most investigators work Monday through Friday from 8:00 a.m. to 4:30 p.m. Adjustments can be made by bureau commanders, with some positions working four ten-hour days with varying reporting times.

Durham defines a high priority emergency call as a life-threatening or property-threatening situation in progress or an officer needing assistance.

Vehicles are assigned as pool patrol vehicles by district and personally to most detectives, command officers, and sworn administrative officers. Some specialized units and support and administrative positions have assigned vehicles.

The police department was successful in clearing a total of 3,313 Part I cases in FY 2002–13.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are not included in the average response time to high priority calls.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Positions—Sworn	514.0
FTE Positions—Other	117.0
Marked and Unmarked Patrol Vehicles	364
Part I Crimes Reported	
Homicide	25
Rape	84
Robbery	688
Assault	990
Burglary	3,426
Larceny	6,618
Auto Theft	782
Arson	55
TOTAL	12,668
Part II Crimes Reported	9,131
Part I Crimes Cleared	
Persons	938
Property	2,375
TOTAL	3,313
Reporting Format	IBR
Number of Calls Dispatched	296,449
Number of Traffic Accidents	11,236
Property Damage for Accidents	$36,208,829

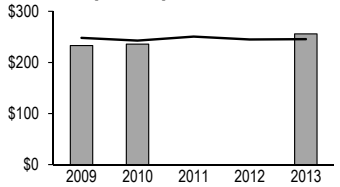
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.1%
Operating Costs	17.7%
Capital Costs	7.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$45,473,571
Operating Costs	$10,739,087
Capital Costs	$4,331,332
TOTAL	$60,543,990

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

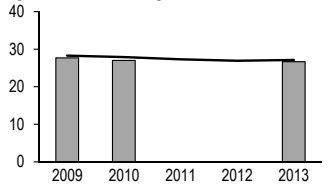
Resource Measures

Police Services Costs per Capita



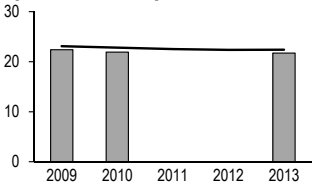
	2009	2010	2011	2012	2013
Durham	$233.00	$236			$256
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Durham	27.7	27.0			26.7
Average	28.3	27.9	27.3	26.9	27.2

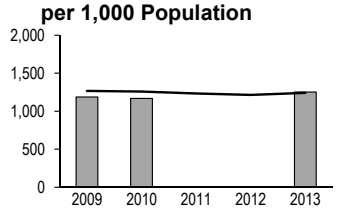
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Durham	22.4	21.9			21.7
Average	23.1	22.8	22.5	22.4	22.4

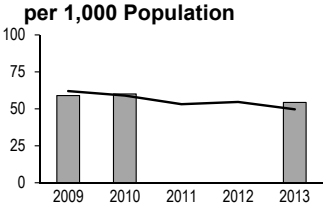
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Durham	1,188	1,168			1,253
Average	1,267	1,259	1,234	1,213	1,241

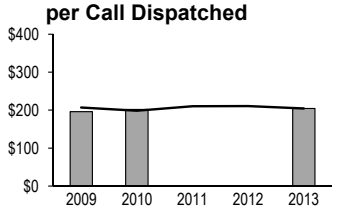
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Durham	59.0	60.1			54.4
Average	62.0	59.0	53.2	54.7	49.7

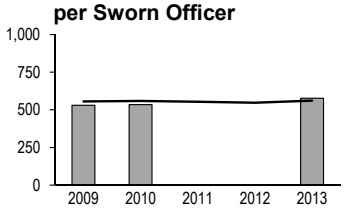
Efficiency Measures

Police Services Cost per Call Dispatched



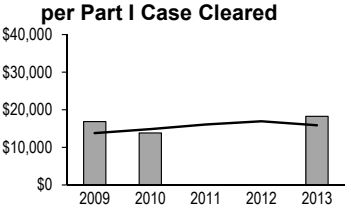
	2009	2010	2011	2012	2013
Durham	$196	$202			$204
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



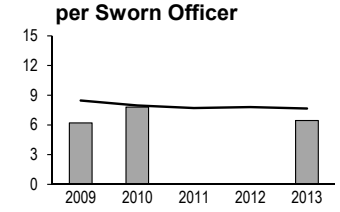
	2009	2010	2011	2012	2013
Durham	530	534			577
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Durham	$16,837	$13,836			$18,275
Average	$13,807	$14,860	$16,069	$16,930	$15,876

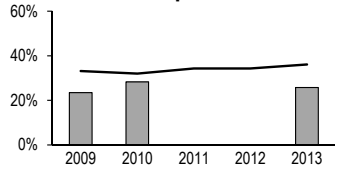
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Durham	6.2	7.8			6.4
Average	8.5	8.0	7.7	7.8	7.7

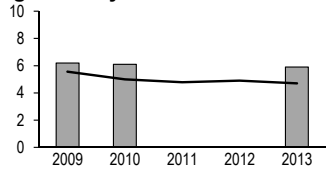
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Durham	23.5%	28.3%			25.7%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Durham	6.2	6.1			5.9
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Greensboro provides comprehensive police services, including patrol, investigations, a traffic unit, a telephone response unit, a forensics laboratory, a canine unit, a motorcycle unit, a special response unit, a bicycle patrol unit, a drug enforcement unit, and a student outreach and recruiting program.

The city had 673 sworn officer positions authorized for the fiscal year, with an average length of service of eleven years. The police department is housed in a downtown facility with other city departments. The city also has three substations that serve as remote line-up facilities.

Patrol officers work a four-days-on and four-days-off fixed schedule. There are four shifts each day, with each patrol officer shift lasting eleven hours. Investigators and administrative personnel work Monday through Friday from 8 a.m. to 5 p.m. Schedules can be adjusted at any time according to call demand, special events, or special incidents.

Line patrol officers do not take vehicles home. Patrol supervisors, division commanders, and some investigators take vehicles home, depending on their assignments.

Greensboro defines a high priority emergency call as one where there is a potential for imminent serious injury or death. The police department was successful in clearing a total of 4,670 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs
The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls with the exception of traffic stops and report-only calls.

Beginning in FY 2009–10, Greensboro refined its reporting of response time and now only includes patrol calls, which are the majority of calls. Calls to special units are no longer included. A change was also made in the prioritization of calls, which improved response time for the most urgent calls.

Dispatched calls rose noticeably over earlier years due to significant annexations to the city.

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Sworn	673.0
FTE Positions—Other	112.0
Marked and Unmarked Patrol Vehicles	240
Part I Crimes Reported	
Homicide	26
Rape	80
Robbery	568
Assault	708
Burglary	3,068
Larceny	8,341
Auto Theft	552
Arson	131
TOTAL	13,474
Part II Crimes Reported	16,737
Part I Crimes Cleared	
Persons	804
Property	3,866
TOTAL	4,670
Reporting Format	IBR
Number of Calls Dispatched	295,256
Number of Traffic Accidents	8,237
Property Damage for Accidents	$30,855,527

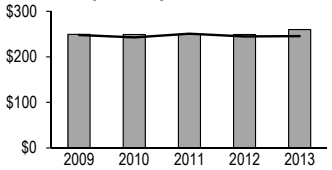
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	77.1%
Operating Costs	22.9%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$55,188,770
Operating Costs	$16,369,227
Capital Costs	$0
TOTAL	$71,557,997

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

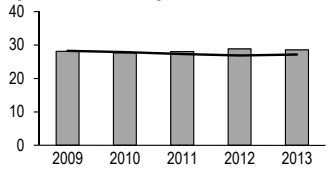
Resource Measures

Police Services Costs per Capita



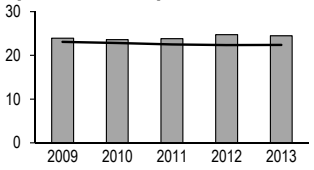
	2009	2010	2011	2012	2013
Greensboro	$249.43	$249	$249	$249	$260
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	28.1	27.6	28.0	28.8	28.5
Average	28.3	27.9	27.3	26.9	27.2

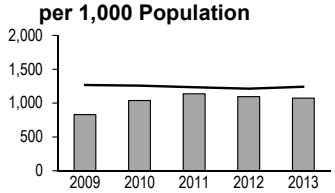
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	23.9	23.6	23.8	24.7	24.5
Average	23.1	22.8	22.5	22.4	22.4

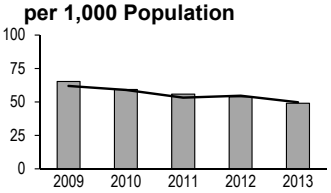
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	830	1,038	1,138	1,095	1,073
Average	1,267	1,259	1,234	1,213	1,241

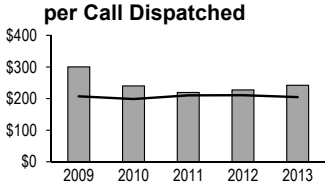
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	65.3	59.4	55.9	53.8	49.0
Average	62.0	59.0	53.2	54.7	49.7

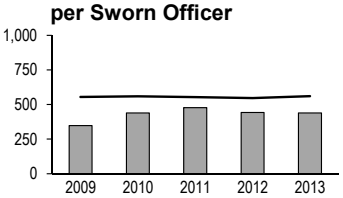
Efficiency Measures

Police Services Cost per Call Dispatched



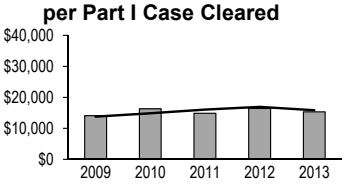
	2009	2010	2011	2012	2013
Greensboro	$301	$240	$219	$227	$242
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



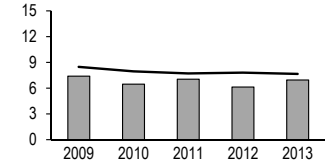
	2009	2010	2011	2012	2013
Greensboro	347	440	478	443	439
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Greensboro	$14,113	$16,338	$14,876	$16,439	$15,323
Average	$13,807	$14,860	$16,069	$16,930	$15,876

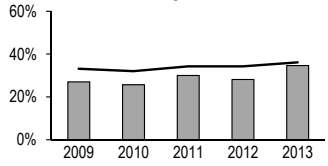
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Greensboro	7.4	6.5	7.0	6.1	6.9
Average	8.5	8.0	7.7	7.8	7.7

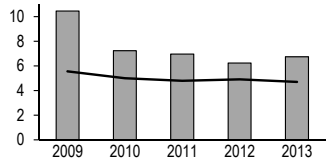
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Greensboro	27.1%	25.7%	30.0%	28.2%	34.7%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Greensboro	10.5	7.2	7.0	6.2	6.7
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Greenville provides a full array of police services, including patrol, investigations, a canine unit, a special response unit, bicycle patrol, and drug enforcement.

The city had 187 sworn officer positions authorized for the fiscal year, with an average length of service of 11.6 years. The police department occupies space in the city government building.

Patrol officers work a rotating schedule of two on/two off/three on/two off/two on/three off. There are four shifts each day for patrol officers, with the shifts lasting eleven hours. Investigators and administrative personnel work Monday through Friday, with eight-hour shifts. Schedules are subject to change based on call demand, special events, or unusual events.

Some patrol officers have take-home vehicles. There are seven or eight take-home cars per shift. They are assigned by seniority and whether or not the officer lives in the city limits. Officers on a shift who do not have a take-home car are assigned a pool car to drive each day. All investigators and administation personnel (with one exception) have take-home cars.

Greenville defines high priority emergency calls as those situations that present a potential for imminent serious injury or death. These calls are dispatched to the first available patrol unit, which may require a citywide dispatch.

The police department was successful in clearing a total of 1,213 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs
Greenville switched to a new records management system near the end of FY 2008–09. Due to complications with the system changeover, the city was not able to provide data on clearances for crimes for FY 2008–09.

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls are not included in the response times.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Sworn	187.0
FTE Positions—Other	53.0
Marked and Unmarked Patrol Vehicles	168
Part I Crimes Reported	
Homicide	6
Rape	19
Robbery	161
Assault	295
Burglary	1,227
Larceny	2,665
Auto Theft	117
Arson	3
TOTAL	4,493
Part II Crimes Reported	5,764
Part I Crimes Cleared	
Persons	153
Property	1,060
TOTAL	1,213
Reporting Format	IBR
Number of Calls Dispatched	88,828
Number of Traffic Accidents	3,634
Property Damage for Accidents	$13,059,809

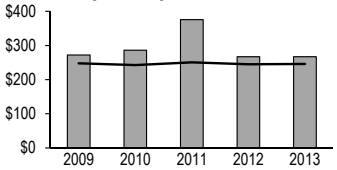
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	74.7%
Operating Costs	21.9%
Capital Costs	3.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,182,624
Operating Costs	$5,026,386
Capital Costs	$792,968
TOTAL	$23,001,978

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

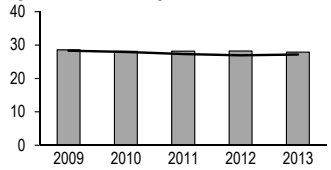
Resource Measures

Police Services Costs per Capita



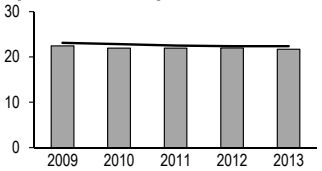
	2009	2010	2011	2012	2013
Greenville	$272.03	$286	$376	$267	$267
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	28.5	28.1	28.2	28.2	27.9
Average	28.3	27.9	27.3	26.9	27.2

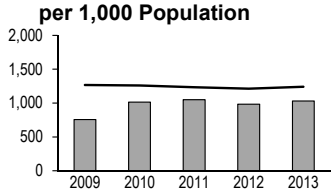
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	22.5	21.9	22.0	22.0	21.7
Average	23.1	22.8	22.5	22.4	22.4

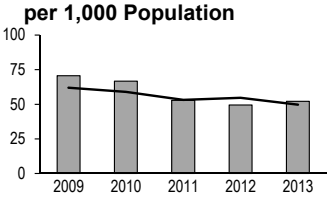
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	757	1,013	1,051	983	1,031
Average	1,267	1,259	1,234	1,213	1,241

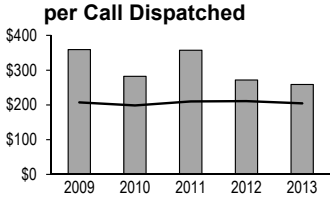
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	70.6	66.7	52.9	49.5	52.2
Average	62.0	59.0	53.2	54.7	49.7

Efficiency Measures

Police Services Cost per Call Dispatched

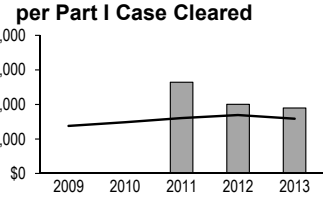


	2009	2010	2011	2012	2013
Greenville	$359	$282	$357	$272	$259
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer

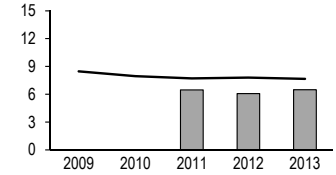
	2009	2010	2011	2012	2013
Greenville	337	462	478	447	475
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Greenville			$26,454	$20,020	$18,963
Average	$13,807	$14,860	$16,069	$16,930	$15,876

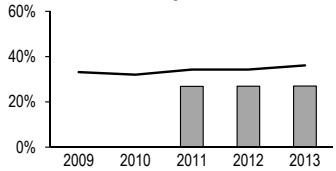
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Greenville			6.5	6.1	6.5
Average	8.5	8.0	7.7	7.8	7.7

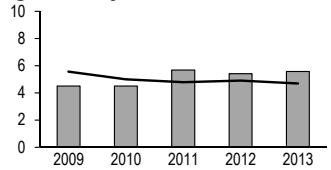
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Greenville			26.8%	26.9%	27.0%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Greenville	4.5	4.5	5.7	5.4	5.6
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Hickory provides a full array of police services, including patrol, investigations, a traffic unit, a laboratory facility, a canine unit, a special response unit, bicycle patrol, a jail/holding facility, animal control, drug enforcement, and a DARE program.

The city had 118 sworn officer positions authorized for the fiscal year, with an average length of service of 9.6 years. The police department occupies its own three-story facility, completed in January 1996. Each of the five community police areas has an office located in its respective community. These offices are not staffed. They are used for interviews, to obtain information, to store supplies, and to make phone calls.

Patrol officers work a fourteen-day, 80.5-hour cycle. During this period, officers work seven 11.5-hour days. Each of the five districts is commanded by a lieutenant who establishes schedules based on need.

Investigators work Monday through Friday, either from 8:30 a.m. to 5:00 p.m. or 3:30 p.m. to 12:00 a.m. for the second-shift on-call investigators.

Hickory uses the one-officer, one-car plan. Officers take vehicles home if they live in or within one mile of the city. Officers who are members of specialized units needed for emergency response, such as special operations, K-9, or criminial investigations, may also take their vehicles home.

Hickory defines high priority emergency calls as those situations that present an in-progress threat to life or serious property loss. Officers are authorized to utilize blue lights and sirens during responses and may exceed posted speed limits by up to 20 miles per hour.

The police department was successful in clearing a total of 777 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income	$54,093
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	118.0
FTE Positions—Other	34.0
Marked and Unmarked Patrol Vehicles	153
Part I Crimes Reported	
Homicide	3
Rape	14
Robbery	67
Assault	87
Burglary	435
Larceny	1,820
Auto Theft	162
Arson	10
TOTAL	2,598
Part II Crimes Reported	3,462
Part I Crimes Cleared	
Persons	96
Property	681
TOTAL	777
Reporting Format	IBR
Number of Calls Dispatched	67,930
Number of Traffic Accidents	3,276
Property Damage for Accidents	$7,481,370

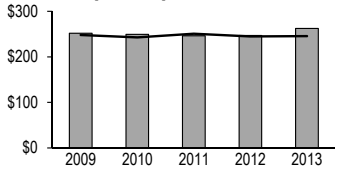
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	73.9%
Operating Costs	21.9%
Capital Costs	4.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,757,568
Operating Costs	$2,297,714
Capital Costs	$447,799
TOTAL	$10,503,081

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

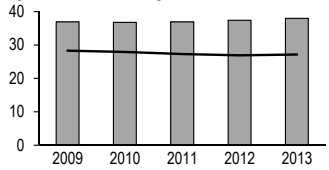
Resource Measures

Police Services Costs per Capita



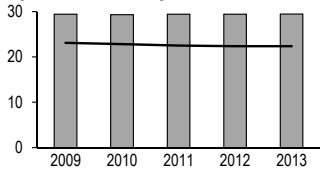
	2009	2010	2011	2012	2013
Hickory	$251.82	$249	$246	$247	$262
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	36.9	36.8	36.9	37.4	38.0
Average	28.3	27.9	27.3	26.9	27.2

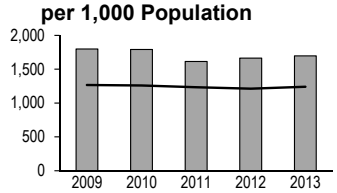
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	29.4	29.3	29.4	29.4	29.5
Average	23.1	22.8	22.5	22.4	22.4

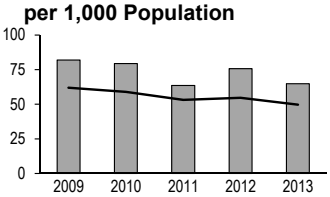
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	1,797	1,792	1,613	1,664	1,697
Average	1,267	1,259	1,234	1,213	1,241

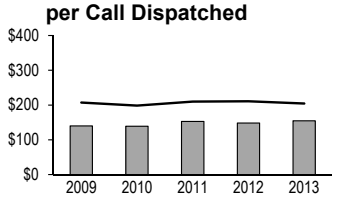
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	82.0	79.5	63.5	75.8	64.9
Average	62.0	59.0	53.2	54.7	49.7

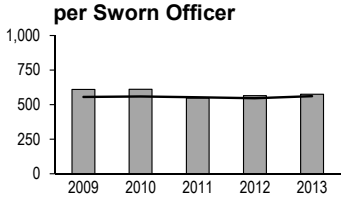
Efficiency Measures

Police Services Cost per Call Dispatched



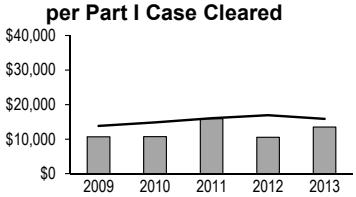
	2009	2010	2011	2012	2013
Hickory	$140	$139	$153	$148	$155
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



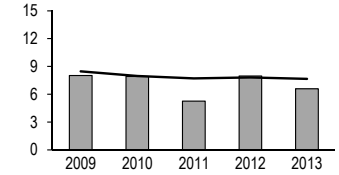
	2009	2010	2011	2012	2013
Hickory	611	611	548	565	576
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Hickory	$10,659	$10,732	$15,903	$10,524	$13,517
Average	$13,807	$14,860	$16,069	$16,930	$15,876

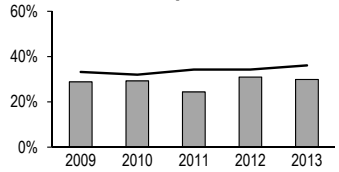
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Hickory	8.0	7.9	5.3	8.0	6.6
Average	8.5	8.0	7.7	7.8	7.7

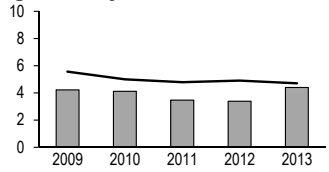
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Hickory	28.8%	29.2%	24.4%	31.0%	29.9%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Hickory	4.2	4.1	3.5	3.4	4.4
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

High Point's police department provides an array of police services, including patrol, investigations, traffic, a telephone response unit, a forensics laboratory, a canine unit, a motorcycle unit, a special response unit, a bicycle patrol unit, an animal control function, a drug enforcement unit, and other programs such as school resource officers.

The city had 229 sworn officer positions authorized for the fiscal year, with an average length of service of 10.8 years. The police department is located in a separate building from city hall.

Patrol officers work a 10.5-hour shift on either the first, second, or third shift. Officers are assigned to separate teams and alternate four days on and four days off. In order to provide coverage for peak hours, the second and third shifts overlap by 5.5 hours. This applies to both daytime and night coverage.

Detectives work a twenty-eight-day cycle of five days on and two days off. The first shift is from 8 a.m. to 5 p.m., and the second shift is from 4 p.m. to 12 a.m. Each week, three detectives rotate to cover the second shift.

Each officer is assigned a vehicle. Officers living within the city limits take vehicles home. If the officer lives outside of the city limits, the vehicle must be parked at an approved location within the city.

The city defines high priority emergency calls as those where the threat of physical injury or the level of danger created by a suspect or condition requires such a response.

The police department was successful in clearing a total of 1,921 Part I cases in FY 2012–13.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are not included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Sworn	229.0
FTE Positions—Other	38.0
Marked and Unmarked Patrol Vehicles	229
Part I Crimes Reported	
Homicide	5
Rape	26
Robbery	153
Assault	261
Burglary	1,224
Larceny	2,864
Auto Theft	288
Arson	38
TOTAL	4,859
Part II Crimes Reported	3,413
Part I Crimes Cleared	
Persons	281
Property	1,640
TOTAL	1,921
Reporting Format	UCR
Number of Calls Dispatched	122,412
Number of Traffic Accidents	2,734
Property Damage for Accidents	$11,587,908

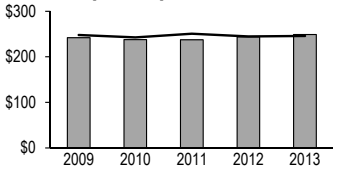
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	74.6%
Operating Costs	21.1%
Capital Costs	4.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$19,782,664
Operating Costs	$5,591,963
Capital Costs	$1,131,154
TOTAL	$26,505,781

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

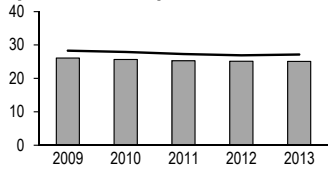
Resource Measures

Police Services Costs per Capita



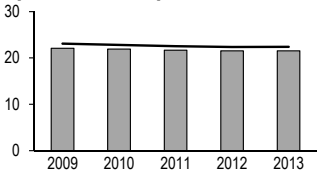
	2009	2010	2011	2012	2013
High Point	$241.89	$238	$238	$244	$249
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
High Point	26.1	25.7	25.3	25.1	25.1
Average	28.3	27.9	27.3	26.9	27.2

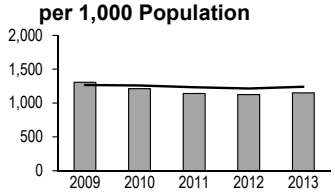
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
High Point	22.1	21.9	21.7	21.5	21.5
Average	23.1	22.8	22.5	22.4	22.4

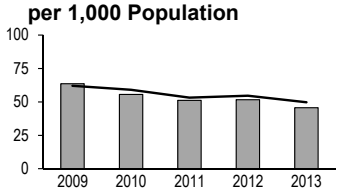
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
High Point	1,307	1,211	1,141	1,124	1,150
Average	1,267	1,259	1,234	1,213	1,241

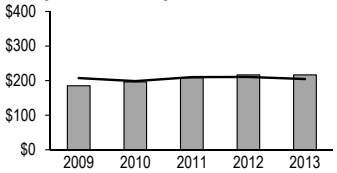
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
High Point	63.6	55.6	51.1	51.6	45.7
Average	62.0	59.0	53.2	54.7	49.7

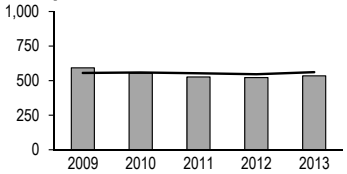
Efficiency Measures

Police Services Cost per Call Dispatched



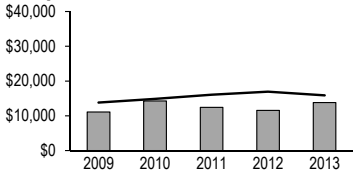
	2009	2010	2011	2012	2013
High Point	$185	$196	$208	$217	$217
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



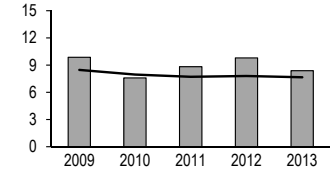
	2009	2010	2011	2012	2013
High Point	592	553	527	522	535
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
High Point	$11,107	$14,289	$12,421	$11,557	$13,798
Average	$13,807	$14,860	$16,069	$16,930	$15,876

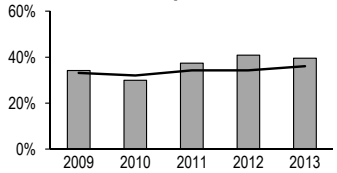
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
High Point	9.9	7.6	8.8	9.8	8.4
Average	8.5	8.0	7.7	7.8	7.7

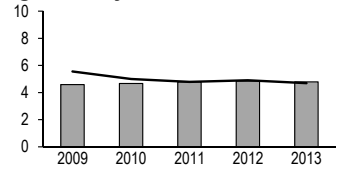
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
High Point	34.2%	29.9%	37.4%	40.9%	39.5%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
High Point	4.6	4.7	4.8	4.9	4.8
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Salisbury's police department provides an array of police services, including patrol, investigations, traffic, canine, special response, bicycle patrol, drug enforcement units, a school program, and other programs.

The city had eighty-two sworn officer positions authorized for the fiscal year, with an average length of service of 9.6 years. The police department is located in a two-story facility.

Uniformed officers work a variety of shift schedules. The most common schedule is one twelve-hour shift, with two days on and two off, three days on and two off, and then two days on and three off. A few officers work 10.5-hour shifts, with four days on and three off. This 10.5-hour shift serves as flex coverage during the day's heaviest call volume period and can be moved according to departmental need.

Officers are assigned a vehicle when hired and are allowed to take it home if they live within Rowan County. If they live within Rowan County but beyond five miles of the city limits, they have to reimburse the city for the cost of mileage in excess of the five miles.

The police department was successful in clearing a total of 611 Part I cases in FY 2012–13.

The city defines high priority emergency calls as those involving crimes that are in progress or calls that are life-threatening or potentially life-threatening.

Conditions Affecting Service, Performance, and Costs
The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls.

Salisbury has increased special initiatives to reduce crime, such as through projects aimed at "hot spots" and aggressive prosecutions through Project Safe.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income	$40,192
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	82.0
FTE Positions—Other	18.0
Marked and Unmarked Patrol Vehicles	90
Part I Crimes Reported	
Homicide	2
Rape	8
Robbery	98
Assault	88
Burglary	453
Larceny	1,303
Auto Theft	105
Arson	7
TOTAL	2,064
Part II Crimes Reported	2,188
Part I Crimes Cleared	
Persons	89
Property	522
TOTAL	611
Reporting Format	IBR
Number of Calls Dispatched	30,610
Number of Traffic Accidents	1,720
Property Damage for Accidents	NA

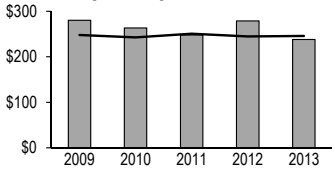
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	68.4%
Operating Costs	19.8%
Capital Costs	11.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,441,601
Operating Costs	$1,572,371
Capital Costs	$943,301
TOTAL	$7,957,273

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

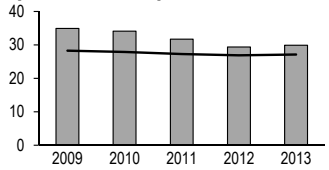
Resource Measures

Police Services Costs per Capita



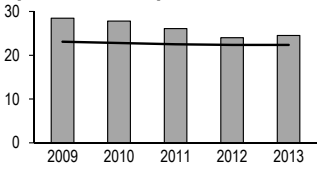
	2009	2010	2011	2012	2013
Salisbury	$280.11	$264	$248	$279	$238
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	35.0	34.1	31.7	29.4	29.9
Average	28.3	27.9	27.3	26.9	27.2

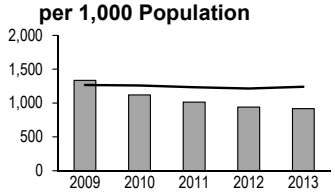
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	28.5	27.8	26.1	24.0	24.5
Average	23.1	22.8	22.5	22.4	22.4

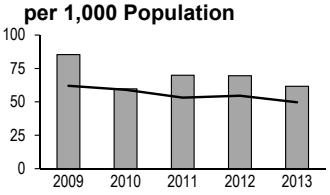
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	1,336	1,121	1,013	940	915
Average	1,267	1,259	1,234	1,213	1,241

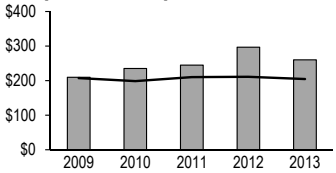
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	85.3	59.7	70.0	69.6	61.7
Average	62.0	59.0	53.2	54.7	49.7

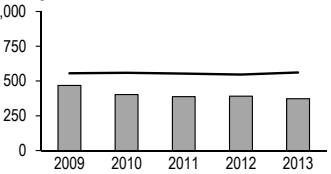
Efficiency Measures

Police Services Cost per Call Dispatched



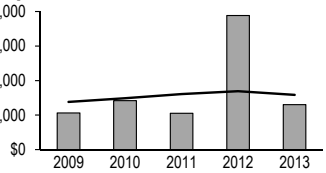
	2009	2010	2011	2012	2013
Salisbury	$210	$235	$245	$297	$260
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



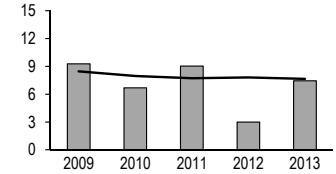
	2009	2010	2011	2012	2013
Salisbury	469	403	388	391	373
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Salisbury	$10,603	$14,177	$10,523	$38,821	$13,023
Average	$13,807	$14,860	$16,069	$16,930	$15,876

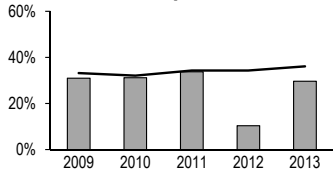
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Salisbury	9.3	6.7	9.0	3.0	7.5
Average	8.5	8.0	7.7	7.8	7.7

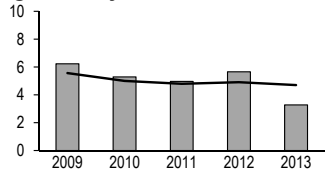
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Salisbury	31.0%	31.1%	33.7%	10.3%	29.6%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Salisbury	6.2	5.3	5.0	5.7	3.3
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wilmington operates a full-service police department, including patrol, investigations, a traffic unit, a telephone response unit, a canine unit, a mounted/equine unit, a special response unit, drug enforcement, a warrants unit, and other crime prevention programs.

The city had 263 sworn officer positions authorized for the fiscal year, with an average length of service of twelve years. The police department took occupancy of a new facility early in 2007 located on the north side of the city. The department has one substation housing the special operations division and a second substation for the Southeast Patrol region. There are eight shifts for patrol officers. There are two shifts for investigators, a day shift and an evening one.

Take-home vehicles are assigned at the discretion of the chief or deputy chief. Generally, the chief, deputy chiefs, captains, lieutenants, and sergeants receive take-home cars. Additionally, specialty units such as the emergency response team and traffic are assigned take-home vehicles. Under the Individual Vehicle Assignment Program (IVAP), all sworn personnel with two years of service who live within fifteen miles of the Wilmington city limits are assigned take-home cars.

The police department was successful in clearing a total of 1,998 Part I cases in FY 2012–13.

Wilmington defines high priority emergency calls as those involving incidents in progress and presenting the potential for injury or property damage or situations where a suspect is at the scene and will elude apprehension or create a potential for personal injury, damage, or loss if officers do not arrive rapidly.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income	$57,892
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	263.0
FTE Positions—Other	56.0
Marked and Unmarked Patrol Vehicles	277
Part I Crimes Reported	
Homicide	8
Rape	31
Robbery	244
Assault	333
Burglary	1,589
Larceny	3,575
Auto Theft	306
Arson	8
TOTAL	6,094
Part II Crimes Reported	5,415
Part I Crimes Cleared	
Persons	366
Property	1,632
TOTAL	1,998
Reporting Format	UCR
Number of Calls Dispatched	173,980
Number of Traffic Accidents	3,930
Property Damage for Accidents	$17,279,168

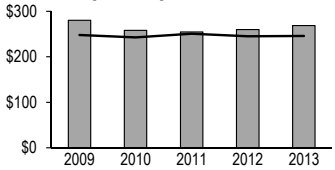
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	64.2%
Operating Costs	25.1%
Capital Costs	10.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$18,901,439
Operating Costs	$7,385,247
Capital Costs	$3,162,710
TOTAL	$29,449,396

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

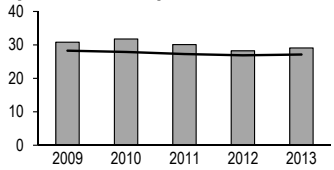
Resource Measures

Police Services Costs per Capita



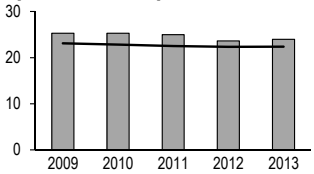
	2009	2010	2011	2012	2013
Wilmington	$280.25	$258	$255	$260	$268
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	30.8	31.8	30.1	28.2	29.1
Average	28.3	27.9	27.3	26.9	27.2

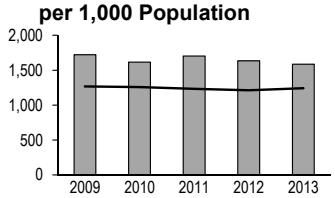
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	25.3	25.3	25.0	23.6	24.0
Average	23.1	22.8	22.5	22.4	22.4

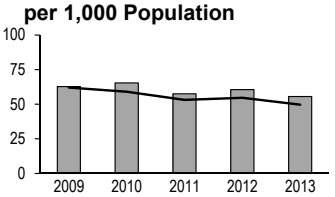
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	1,720	1,617	1,704	1,634	1,586
Average	1,267	1,259	1,234	1,213	1,241

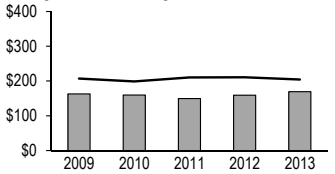
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	62.8	65.3	57.5	60.5	55.6
Average	62.0	59.0	53.2	54.7	49.7

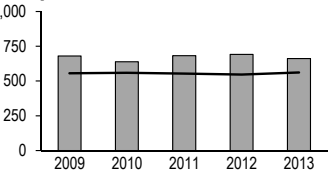
Efficiency Measures

Police Services Cost per Call Dispatched



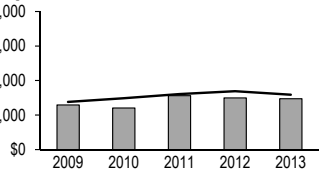
	2009	2010	2011	2012	2013
Wilmington	$163	$160	$149	$159	$169
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



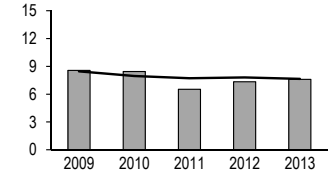
	2009	2010	2011	2012	2013
Wilmington	680	639	682	692	662
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Wilmington	$12,925	$12,054	$15,602	$14,965	$14,739
Average	$13,807	$14,860	$16,069	$16,930	$15,876

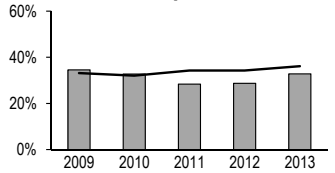
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Wilmington	8.6	8.5	6.5	7.3	7.6
Average	8.5	8.0	7.7	7.8	7.7

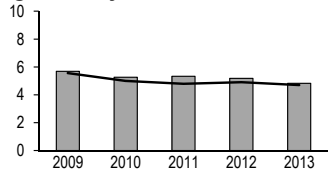
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Wilmington	34.5%	32.7%	28.4%	28.7%	32.8%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Wilmington	5.7	5.3	5.3	5.2	4.8
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wilson's police department provides an array of police services, including patrol, investigations, a telephone response unit, a forensics laboratory, a canine unit, a part-time mounted equine unit, a special response unit, street crimes, drug enforcement, and other services.

The city had 119 sworn officer positions authorized for the fiscal year, with an average length of service of 10.01 years. The main police department headquarters is located in downtown Wilson, housing administration, records, property, major case investigations, police information services, victim services, evidence, and recruitment and training. There are six substations.

Patrol officers work twelve-hour shifts, working fourteen days of a twenty-eight day cycle (168 hours). Shifts are either 7 a.m. to 7 p.m. or 7 p.m. to 7 a.m. and are rotated every two weeks. Department needs may cause shifts to vary. Investigators generally work eight-hour shifts five days per week. Shifts are 8 a.m. to 5 p.m.

Each patrol officer is assigned a vehicle and may take the vehicle home if he or she resides in the city. Officers living outside the city limits park their vehicles at businesses.

The police department was successful in clearing a total of 1,043 Part I cases in FY 2012–13.

Wilson defines high priority emergency calls as calls related to crimes in progress that require immediate response: murder, rape, robbery, burglary, arson/fire, and assaults.

Conditions Affecting Service, Performance, and Costs

The average response time to high priority calls reflects the response time of the first unit to arrive. Self-initiated calls with a response time of zero are not included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income	$43,442
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	119.0
FTE Positions—Other	15.0
Marked and Unmarked Patrol Vehicles	127
Part I Crimes Reported	
Homicide	5
Rape	6
Robbery	77
Assault	152
Burglary	603
Larceny	1,524
Auto Theft	92
Arson	11
TOTAL	2,470
Part II Crimes Reported	3,489
Part I Crimes Cleared	
Persons	172
Property	871
TOTAL	1,043
Reporting Format	UCR
Number of Calls Dispatched	98,304
Number of Traffic Accidents	2,225
Property Damage for Accidents	NA

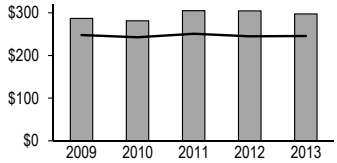
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	68.8%
Operating Costs	23.5%
Capital Costs	7.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,113,954
Operating Costs	$3,450,609
Capital Costs	$1,141,508
TOTAL	$14,706,071

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

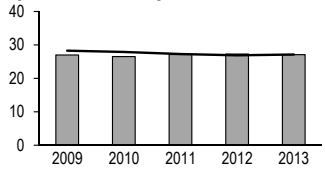
Resource Measures

Police Services Costs per Capita



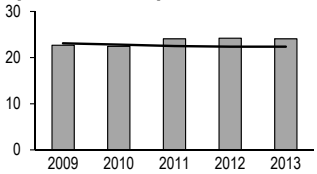
	2009	2010	2011	2012	2013
Wilson	$286.91	$281	$305	$305	$297
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	27.0	26.5	27.1	27.3	27.1
Average	28.3	27.9	27.3	26.9	27.2

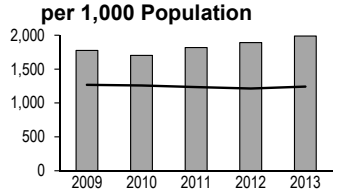
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	22.7	22.4	24.1	24.2	24.1
Average	23.1	22.8	22.5	22.4	22.4

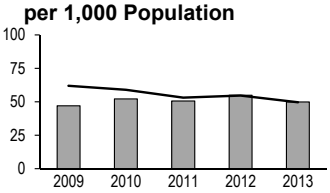
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	1,776	1,702	1,820	1,892	1,988
Average	1,267	1,259	1,234	1,213	1,241

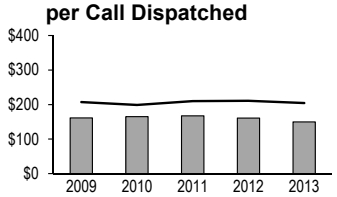
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	47.1	52.2	50.6	55.0	50.0
Average	62.0	59.0	53.2	54.7	49.7

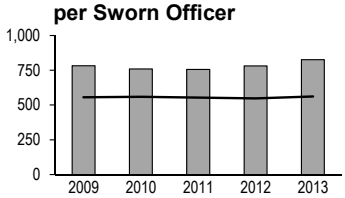
Efficiency Measures

Police Services Cost per Call Dispatched



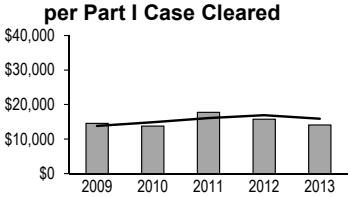
	2009	2010	2011	2012	2013
Wilson	$162	$165	$167	$161	$150
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



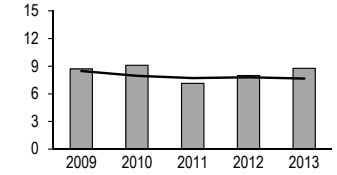
	2009	2010	2011	2012	2013
Wilson	783	759	756	781	826
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Wilson	$14,532	$13,778	$17,735	$15,751	$14,100
Average	$13,807	$14,860	$16,069	$16,930	$15,876

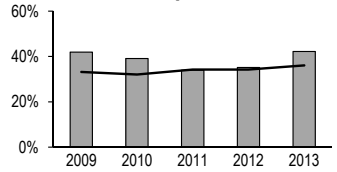
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Wilson	8.7	9.1	7.1	8.0	8.8
Average	8.5	8.0	7.7	7.8	7.7

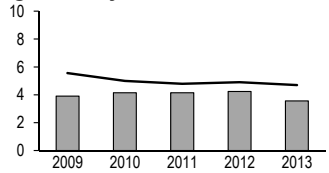
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Wilson	41.9%	39.1%	33.9%	35.2%	42.2%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Wilson	3.9	4.2	4.2	4.2	3.6
Average	5.6	5.0	4.8	4.9	4.7

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Winston-Salem provides an array of police services to its citizens, including patrol, investigations, a traffic enforcement unit, a DWI Task Force, a telephone response unit, a canine unit, a special response unit, bicycle patrol, drug enforcement, a gang unit, and other crime prevention programs.

The city had 569 sworn officer positions authorized for the fiscal year, with an average length of service of 11.4 years. The police department occupies the public safety center. It houses the police department, emergency communications, and the fire department administration. The special investigations division occupies offices in leased space in another facility. A downtown bike patrol office is maintained in the central downtown area.

The department employs a forward-rotating schedule of five shifts. Officers work five days on and four days off. Shifts are ten hours in length. The majority of investigators work Monday through Friday from 8 a.m. to 5 p.m.

Patrol vehicles are assigned to individual officers. Officers residing within Forsyth County take their vehicles home. If officers reside outside of the county, they park their vehicles in a residential or business area within the city limits.

The police department was successful in clearing a total of 4,758 Part I crimes in FY 2012–13.

Winston-Salem defines highest priority emergency calls as those dealing with a significant threat of imminent injury to persons or with crimes against persons that are in progress or just occurred and where the suspect is still there.

Conditions Affecting Service, Performance, and Costs
The average response time to high priority calls reflects the response time of the first arriving unit. Self-initiated calls with a response time of zero are included in the average response time to high priority calls.

The Winston-Salem Police Department does not investigate arsons, so arsons are not included in the crimes reported here. Arson investigations are handled by the Winston-Salem Fire Department.

For FY 2011–12, the Winston-Salem/Forsyth County School System contracted with the Winston-Salem Police Department for the provision of eighteen school resource officers to serve fourteen middle and high schools within Winston-Salem. The school system reimburses the city for eleven months worth of the cost of the officers.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491

Service Profile

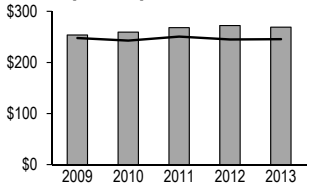
FTE Positions—Sworn	569.0
FTE Positions—Other	117.0
Marked and Unmarked Patrol Vehicles	474
Part I Crimes Reported	
Homicide	4
Rape	92
Robbery	432
Assault	1,007
Burglary	4,218
Larceny	8,685
Auto Theft	689
Arson	NA
TOTAL	15,127
Part II Crimes Reported	34,735
Part I Crimes Cleared	
Persons	805
Property	3,953
TOTAL	4,758
Reporting Format	IBR
Number of Calls Dispatched	277,196
Number of Traffic Accidents	8,410
Property Damage for Accidents	$25,216,498

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.8%
Operating Costs	15.3%
Capital Costs	8.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$47,576,419
Operating Costs	$9,613,023
Capital Costs	$5,581,602
TOTAL	$62,771,044

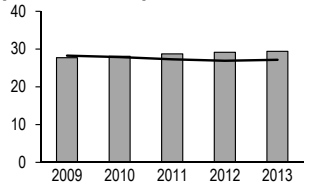
Resource Measures

Police Services Costs per Capita



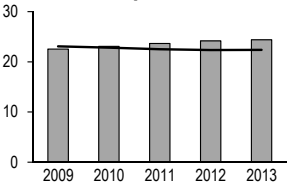
	2009	2010	2011	2012	2013
Winston-Salem	$253.76	$259	$268	$272	$269
Average	$248	$243	$251	$245	$246

Total Police Services Personnel per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	27.7	28.1	28.7	29.2	29.4
Average	28.3	27.9	27.3	26.9	27.2

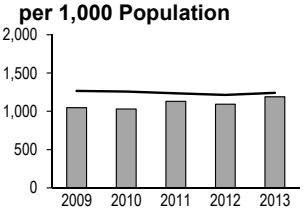
Sworn Police Officers per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	22.6	23.1	23.7	24.2	24.4
Average	23.1	22.8	22.5	22.4	22.4

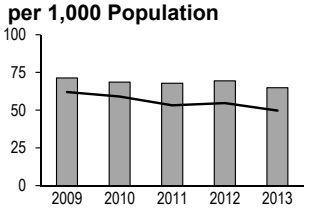
Workload Measures

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	1,046	1,029	1,131	1,092	1,188
Average	1,267	1,259	1,234	1,213	1,241

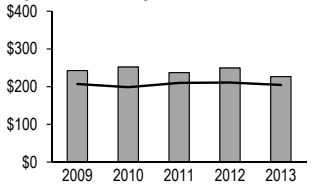
Part I Crimes per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	71.4	68.6	67.8	69.5	64.9
Average	62.0	59.0	53.2	54.7	49.7

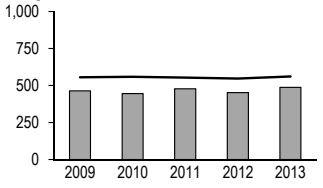
Efficiency Measures

Police Services Cost per Call Dispatched



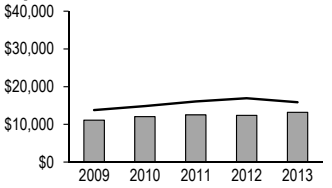
	2009	2010	2011	2012	2013
Winston-Salem	$242	$252	$237	$249	$226
Average	$207	$199	$210	$211	$204

Calls Dispatched per Sworn Officer



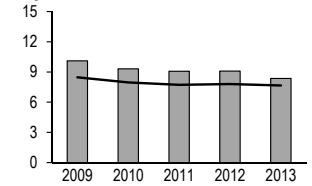
	2009	2010	2011	2012	2013
Winston-Salem	464	446	478	452	487
Average	555	559	554	547	561

Police Services Cost per Part I Case Cleared



	2009	2010	2011	2012	2013
Winston-Salem	$11,138	$12,055	$12,500	$12,401	$13,193
Average	$13,807	$14,860	$16,069	$16,930	$15,876

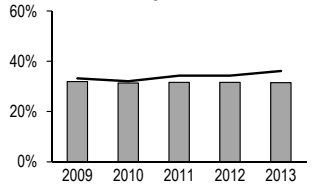
Part I Cases Cleared per Sworn Officer



	2009	2010	2011	2012	2013
Winston-Salem	10.1	9.3	9.1	9.1	8.4
Average	8.5	8.0	7.7	7.8	7.7

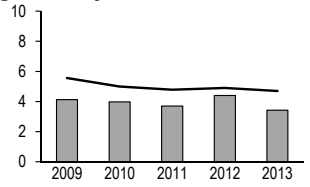
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2009	2010	2011	2012	2013
Winston-Salem	31.9%	31.4%	31.6%	31.6%	31.5%
Average	33.2%	32.0%	34.3%	34.3%	36.1%

Response Time to High Priority Calls in Minutes



	2009	2010	2011	2012	2013
Winston-Salem	4.1	4.0	3.7	4.4	3.4
Average	5.6	5.0	4.8	4.9	4.7

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Performance and Cost Data

EMERGENCY COMMUNICATIONS

PERFORMANCE MEASURES FOR EMERGENCY COMMUNICATIONS

SERVICE DEFINITION

This service refers to the receipt and handling of 911 and other calls by an emergency communications center. Such a center must answer all calls, including those that come in over 911 lines and others that come over regular phone lines. Some calls result in the dispatch of a police or other emergency response unit. Others do not.

NOTES ON PERFORMANCE MEASURES

1. Number of Calls Answered and Number of Calls Dispatched per 1,000 Population

These are used as measures of workload. All calls coming into a police emergency communications center must be answered; therefore these measures assess service workload. Calls coming into a center also reflect the actual or existing, if not full potential, need for emergency communications services. Many calls coming into a center are dispatched. Others come in over regular telephone lines, and still others may be referred to the center by an external call-taker, such as a county emergency communications center.

2. Telecommunicators

Telecommunicators are the personnel who handle the calls in the communication centers. They may take calls, dispatch calls, or do both. Telecommunicators receive specialized training. They work on a shift schedule that generally allows twenty-four-hour-a-day, seven-day-a-week coverage.

3. Average Number of Seconds from Initial Ring to Answer and Percentage of Calls Answered within Twenty Seconds

These are effectiveness measures that assess how quickly telecommunicators answer calls.

4. Average Processing Time (Seconds)

This is an effectiveness measure, representing the average time in seconds between when the telecommunicator answers the telephone and when Computer-Aided Dispatch (CAD) entry begins. This measure is often referred to as “talk time.”

5. For Calls Dispatched, Average Number of Seconds from CAD Entry to Dispatch—Highest Priority Calls

Some calls result in the dispatch of a police or other emergency response unit to a threatening or other similar emergency situation. Other calls result in a dispatch to a serious—but not emergency—situation. Other calls do not result in a dispatch. This measure assesses dispatch time for high priority, emergency situations.

Emergency Communications

Summary of Key Dimensions of Service

City or Town	Population Served	Number of FTEs	Average Length of Service for Call Takers (in Years)	Total Incoming Calls Handled	Total E-911 Calls Handled	Total Dispatches	Outgoing Calls Other than Dispatches
Apex	39,768	9.3	12.3	45,961	3,434	34,530	8,145
Asheville	86,207	24.0	7.9	198,326	31,847	115,828	38,092
Burlington	51,195	14.0	5.8	na	na	88,681	na
Cary	142,412	23.0	4.8	209,876	70,001	134,192	52,341
Concord	81,461	21.5	7.7	108,843	30,300	95,374	36,471
Durham	280,921	81.0	7.1	437,137	346,397	330,399	190,201
Greensboro	501,058	104.0	8.8	609,999	370,812	453,980	161,583
Greenville	86,142	17.0	10.0	136,878	49,054	88,828	NA
Hickory	40,039	14.0	6.8	91,743	7,823	67,932	NA
High Point	106,406	27.0	11.5	279,830	84,406	141,952	86,163
Salisbury	33,442	10.0	6.3	64,142	11,871	30,610	NA
Winston-Salem	233,232	49.0	8.2	480,681	212,598	304,804	70,612

NOTES

The population served by the municipal emergency communications center may go beyond municipal boundaries up to the entire county in cases where the service is a consolidated center.

EXPLANATORY FACTORS

These are factors that the project found affected emergency communication performance and cost in one or more of the municipalities:

Types of emergency response units dispatched, such as police, fire, and EMS
Number and proportion of nonemergency calls received by center
Types of assistance or advice, such as medical, that telecommunicators provide over the phone
Technology available to telecommunication centers
City's definition of what constitutes an "emergency" and "highest priority" call
Service to city only or to city and outlying areas
Training of telecommunicators
Demographic makeup of community
Organizational configuration and staffing for service

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Apex Emergency Communications Center is a division within the Apex Police Department. This center is a secondary public safety answering point within Wake County, using Raleigh computer-aided dispatch as a remote position. The communications center dispatches calls for police, fire, public works, and utilities.

The town owns a 150-foot radio tower which is tied into the Wake County radio system. The system is an 800 MHz system tied into the state VIPER system for radio operations.

Apex's emergency communications center handled a total of 45,961 incoming calls in the fiscal year and dispatched 34,530 calls. The city defines highest priority emergency calls as those with immediate life or property risk or in-progress calls.

Conditions Affecting Service, Performance, and Costs

Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

CAD entry for Apex does not begin immediately but is activated by operators.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income U.S. Census 2010	$97,201
County	Wake

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	9.00
Other	0.25
Total Positions	9.25
Average Length of Service for Call-Takers	12.3 years
Total Incoming Calls	45,961
Total 911 Calls	3,434
Total Calls Dispatched	34,530
Outgoing Calls Other than Dispatch	8,145
Revenue from E-911 Fees	None

Full Cost Profile

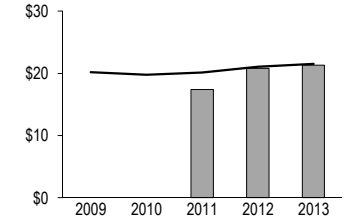
Cost Breakdown by Percentage	
Personal Services	78.0%
Operating Costs	17.9%
Capital Costs	4.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$661,313
Operating Costs	$151,791
Capital Costs	$34,623
TOTAL	$847,727

Apex Emergency Communications

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

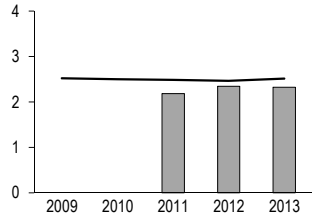
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Apex			$17.41	$20.82	$21.32
Average	$20.20	$19.76	$20.15	$21.07	$21.51

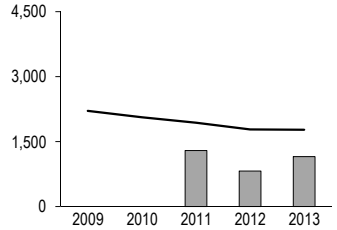
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			2.19	2.35	2.33
Average	2.52	2.50	2.49	2.47	2.51

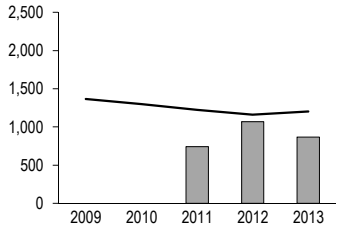
Workload Measures

Total Calls Answered per 1,000 Population



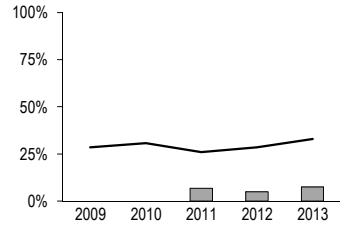
	2009	2010	2011	2012	2013
Apex			1,293	822	1,156
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Apex			743	1,070	868
Average	1,364	1,298	1,222	1,160	1,202

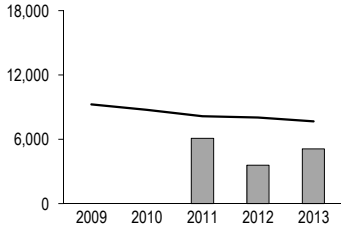
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Apex			6.9%	5.0%	7.5%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

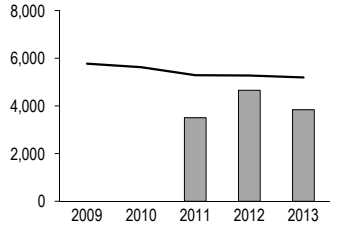
Efficiency Measures

Calls Answered per Telecommunicator



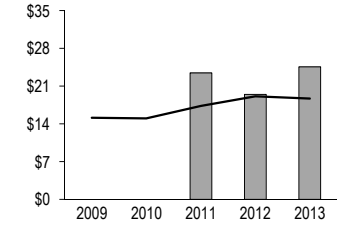
	2009	2010	2011	2012	2013
Apex			6,099	3,576	5,107
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Apex			3,505	4,657	3,837
Average	5,769	5,631	5,295	5,274	5,192

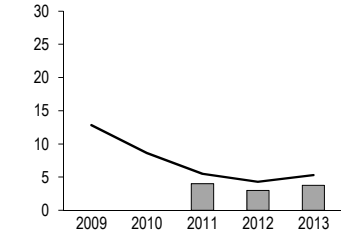
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Apex			$23.44	$19.47	$24.55
Average	$15.12	$15.04	$17.31	$19.09	$18.67

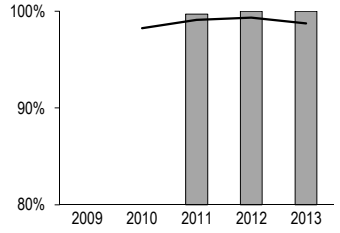
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



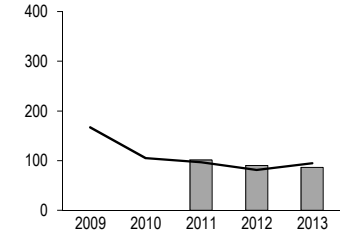
	2009	2010	2011	2012	2013
Apex			4	3	4
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Apex			100%	100%	100%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Apex			101	90	86
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Asheville's Communication Unit handles emergency calls for police and other assistance calls coming into its center from the city. The center is organizationally located in the Support Services Division of the police department. The city handles adminstrative calls, requests for police response, and E-911 calls.

The communications center operates twenty-four hours a day, seven days a week, using three rotating shifts. The communications center uses a call-taker for its E-911 emergency calls. Buncombe County takes such calls and directs them by computer to the city's communication center. Non-emergency calls, however, come directly into the city's communications center.

The city owns its communications infrastructure, consisting of three towers. One tower is used for repeated radio communications, while the other two towers are stand-alone sites which require officers/telecommunicators to manually switch channels. The city uses the Motorola Simulcast system.

Asheville's emergency communications center handled a total of 198,326 incoming calls in the fiscal year and dispatched 115,828 calls. The city defines highest priority emergency calls as crimes in progress and situations that are property- or life-threatening.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Computer-Aided Dispatch (CAD) entry is an immediate action beginning when a telecommunicator hits "new call" or "new event."
Asheville's community policing initiative encourages citizens to report criminal activity, and this has generated more calls over time. The wider use of cell phones has also made it easier for citizens to respond immediately, which has probably increased calls as well.

Asheville's communication unit has made an effort to better categorize high priority calls, which has helped reduce the time between the start of CAD entry to dispatch.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350
County	Buncombe

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	No
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	23.0
Other	1.0
Total Positions	24.0
Average Length of Service for Call-Takers	7.9 years
Total Incoming Calls	198,326
Total 911 Calls	31,847
Total Calls Dispatched	115,828
Outgoing Calls Other than Dispatch	38,092
Revenue from E-911 Fees	None

Full Cost Profile

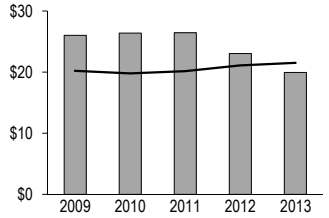
Cost Breakdown by Percentage	
Personal Services	61.7%
Operating Costs	36.8%
Capital Costs	1.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,060,556
Operating Costs	$631,660
Capital Costs	$26,442
TOTAL	$1,718,658

Asheville Emergency Communications

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

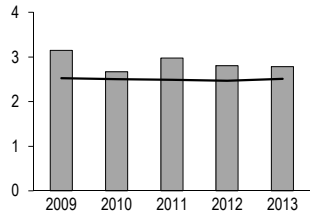
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Asheville	$26.01	$26.39	$26.45	$23.01	$19.94
Average	$20.20	$19.76	$20.15	$21.07	$21.51

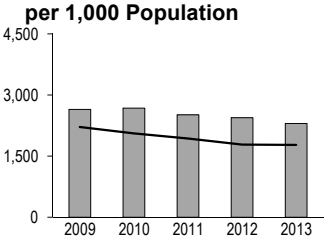
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	3.15	2.67	2.98	2.80	2.78
Average	2.52	2.50	2.49	2.47	2.51

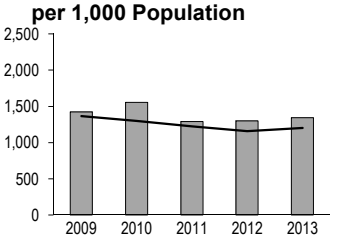
Workload Measures

Total Calls Answered per 1,000 Population



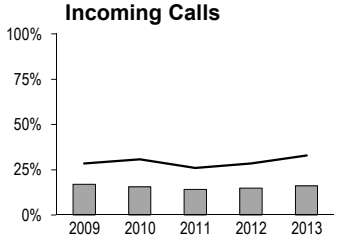
	2009	2010	2011	2012	2013
Asheville	2,651	2,677	2,519	2,448	2,301
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	1,425	1,556	1,289	1,299	1,344
Average	1,364	1,298	1,222	1,160	1,202

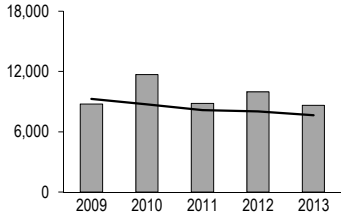
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Asheville	17.0%	15.5%	14.2%	14.9%	16.1%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

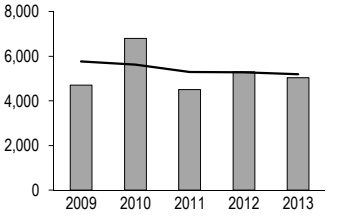
Efficiency Measures

Calls Answered per Telecommunicator



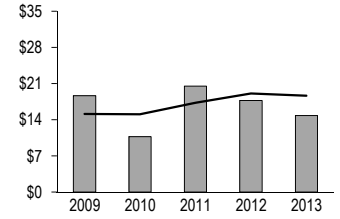
	2009	2010	2011	2012	2013
Asheville	8,771	11,702	8,814	9,983	8,623
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Asheville	4,713	6,803	4,511	5,297	5,036
Average	5,769	5,631	5,295	5,274	5,192

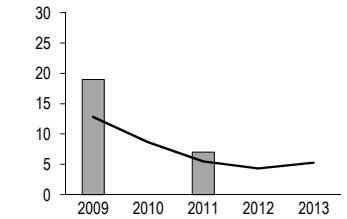
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Asheville	$18.65	$10.72	$20.52	$17.72	$14.84
Average	$15.12	$15.04	$17.31	$19.09	$18.67

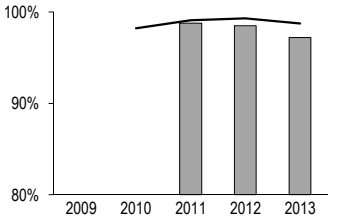
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



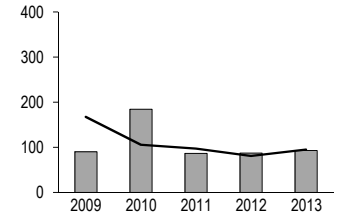
	2009	2010	2011	2012	2013
Asheville	19		7		
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Asheville			99%	98%	97%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Asheville	90	184	86	87	93
Average	167	105	97	81	95

Burlington Emergency Communications

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The emegency communications center is a division within the Burlington Police Department. The unit is responsible for dispatching police and fire personnel for the city.

Burlington uses a mixed-mode analog/digital twenty-eight-channel trunked system with five towers shared with Greensboro and Guilford County. The communications infrastructure is a joint venture with Guilford County and the City of Greensboro. Burlington owns the subscriber units and infrastructure on its end of the system. The system is interfaced with the original Guilford/Greensboro system.

Burlington's communication center dispatched 88,681 calls. The city defines highest priority emergency calls as any report that relates to a significant threat of imminent injury to a person or substantial damage to property.

Conditions Affecting Service, Performance, and Costs
The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

CAD entry is an immediate action with a new call or command line keystroke initiation.

The drop in the measure "average time in seconds from CAD entry to dispatch " primarily reflects a change in reporting rather than service changes. In earlier years, some calls which did not require an emergency response were being included. The lastest data is a more accurate reflection as it only includes calls for service requiring an emergency response.

Burlington was not able to provide the number of incoming or E-911 calls for FY 2012–13.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461
County	Alamance

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	12.0
Other	2.0
Total Positions	14.0
Average Length of Service for Call-Takers	5.8 years
Total Incoming Calls	NA
Total 911 Calls	NA
Total Calls Dispatched	88,681
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	None

Full Cost Profile

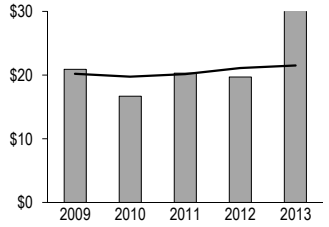
Cost Breakdown by Percentage	
Personal Services	46.3%
Operating Costs	49.5%
Capital Costs	4.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$717,111
Operating Costs	$766,300
Capital Costs	$64,347
TOTAL	$1,547,758

Burlington Emergency Communications

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

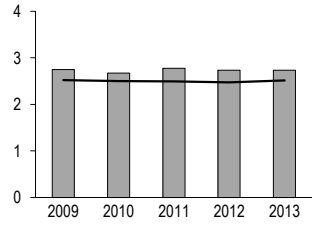
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Burlington	$20.89	$16.68	$20.29	$19.68	$30.23
Average	$20.20	$19.76	$20.15	$21.07	$21.51

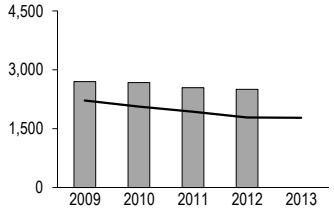
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	2.75	2.67	2.77	2.73	2.73
Average	2.52	2.50	2.49	2.47	2.51

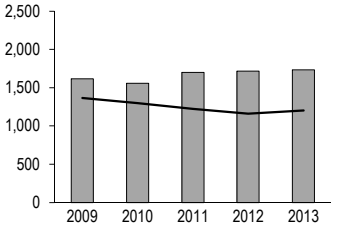
Workload Measures

Total Calls Answered per 1,000 Population



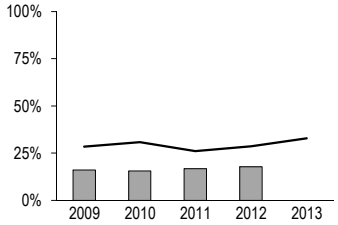
	2009	2010	2011	2012	2013
Burlington	2,699	2,677	2,544	2,504	
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	1,615	1,556	1,698	1,717	1,732
Average	1,364	1,298	1,222	1,160	1,202

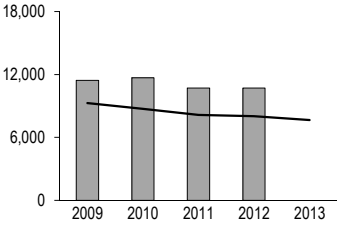
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Burlington	16.0%	15.5%	16.8%	17.7%	
Average	28.5%	30.8%	26.0%	28.5%	32.9%

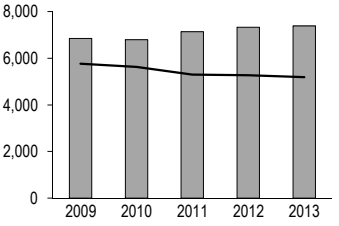
Efficiency Measures

Calls Answered per Telecommunicator



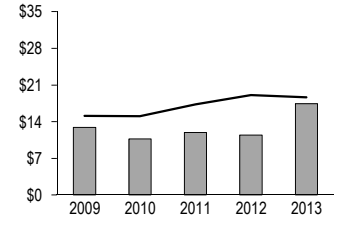
	2009	2010	2011	2012	2013
Burlington	11,453	11,702	10,699	10,699	
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Burlington	6,854	6,803	7,144	7,335	7,390
Average	5,769	5,631	5,295	5,274	5,192

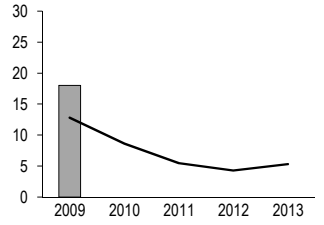
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Burlington	$12.93	$10.72	$11.95	$11.46	$17.45
Average	$15.12	$15.04	$17.31	$19.09	$18.67

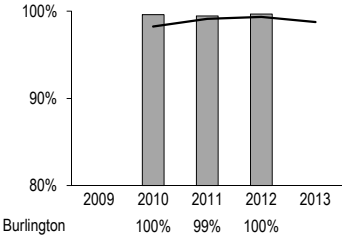
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



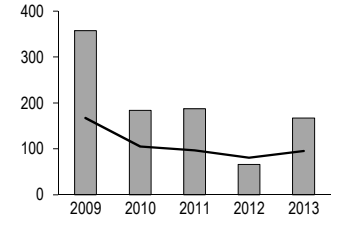
	2009	2010	2011	2012	2013
Burlington	18				
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Burlington		100%	99%	100%	
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One



	2009	2010	2011	2012	2013
Burlington	357	184	187	66	167
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Cary Police Department handles all emergency and non-emergency communications for the town of Cary, dispatching all police and fire services for the town. The communications center is staffed with full-time telecommunicators, including five shift supervisors, who answer all emergency and non-emergency calls for service.

Cary uses the Motorola SmartNet 800 MHz radio system, with all the radio equipment being owned by the town. The town has two emergency back-up channels, one for police and one for fire. The transmission tower is located ten miles south of the communications center and is linked via microwave.

Cary's center handled a total of 209,876 calls in the fiscal year, dispatching 134,192 calls. The city defines highest priority emergency calls as any report that relates to a significant threat of imminent injury to a person or substantial damage to property.

Cary received $409,306 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

During FY 2011, the Town of Cary switched to a new Computer-Assisted Dispatch (CAD) system. The new CAD system has a manual dispatch, where the old system did this automatically. The process change has resulted in the average seconds for dispatch increasing over the prior year. As the telecommunicators have become familiar with the system, the average dispatch time is expected to come back down.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income U.S. Census 2010	$108,956
County	Wake

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	21.0
Other	2.0
Total Positions	23.0
Average Length of Service for Call-Takers	4.8 years
Total Incoming Calls	209,876
Total 911 Calls	70,001
Total Calls Dispatched	134,192
Outgoing Calls Other than Dispatch	52,341
Revenue from E-911 Fees	$409,306

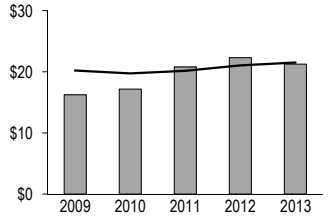
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.9%
Operating Costs	22.3%
Capital Costs	4.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,210,373
Operating Costs	$676,004
Capital Costs	$145,003
TOTAL	$3,031,380

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

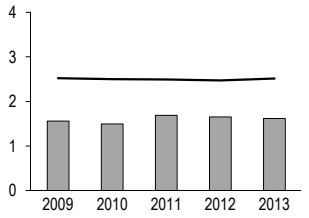
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Cary	$16.26	$17.17	$20.81	$22.29	$21.29
Average	$20.20	$19.76	$20.15	$21.07	$21.51

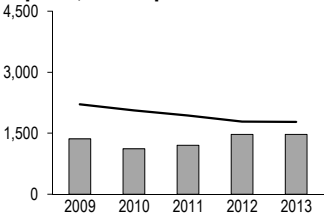
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	1.56	1.49	1.69	1.65	1.62
Average	2.52	2.50	2.49	2.47	2.51

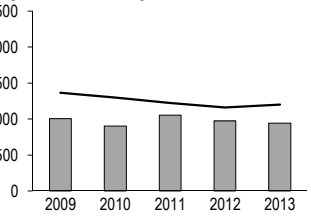
Workload Measures

Total Calls Answered per 1,000 Population



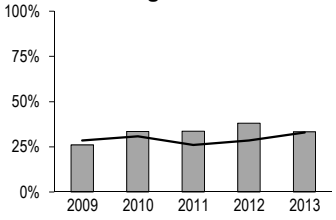
	2009	2010	2011	2012	2013
Cary	1,366	1,120	1,208	1,472	1,474
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Cary	1,005	902	1,056	972	942
Average	1,364	1,298	1,222	1,160	1,202

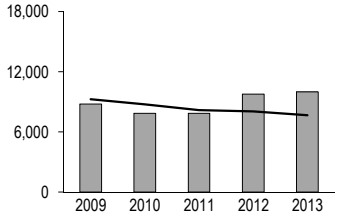
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Cary	26.1%	33.4%	33.6%	38.1%	33.4%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

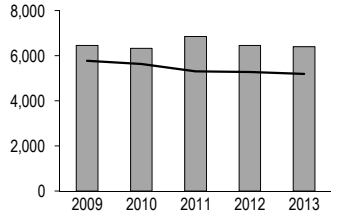
Efficiency Measures

Calls Answered per Telecommunicator



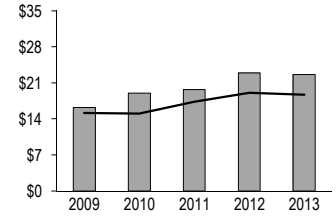
	2009	2010	2011	2012	2013
Cary	8,773	7,853	7,833	9,752	9,994
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Cary	6,455	6,328	6,848	6,443	6,390
Average	5,769	5,631	5,295	5,274	5,192

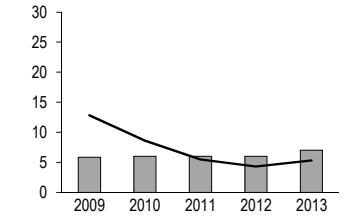
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Cary	$16.17	$19.03	$19.71	$22.93	$22.59
Average	$15.12	$15.04	$17.31	$19.09	$18.67

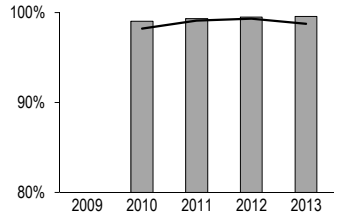
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



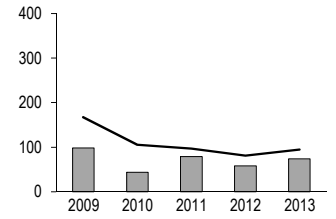
	2009	2010	2011	2012	2013
Cary	6	6	6	6	7
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Cary		99%	99%	99%	100%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Cary	98	44	79	58	74
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Concord's emergency communications center handles E-911 and non-emergency calls for the city. The emergency communications function of the city is separate from the police and fire functions and does not answer or transfer administrative calls for those departments. The emergency communications center does answer calls for utility and other city departments after hours, which is reflected in the number of incoming calls.

The city uses an 800 MHz system, which is a twelve-channel, five-site system shared with Cabarrus County and the City of Kannapolis.

Concord's center handled a total of 108,843 calls in the fiscal year, dispatching 95,374 calls.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643
County	Cabarrus

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	20.5
Other	1.0
Total Positions	21.5
Average Length of Service for Call-Takers	7.7 years
Total Incoming Calls	108,843
Total 911 Calls	30,300
Total Calls Dispatched	95,374
Outgoing Calls Other than Dispatch	36,471
Revenue from E-911 Fees	None

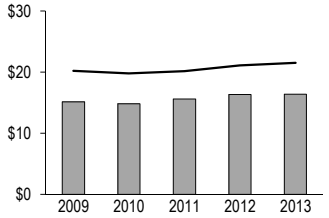
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	84.5%
Operating Costs	13.9%
Capital Costs	1.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,127,434
Operating Costs	$185,313
Capital Costs	$20,996
TOTAL	$1,333,743

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

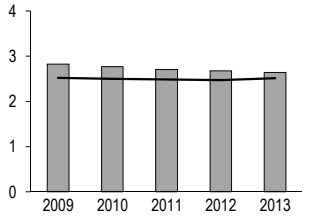
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Concord	$15.13	$14.78	$15.60	$16.30	$16.37
Average	$20.20	$19.76	$20.15	$21.07	$21.51

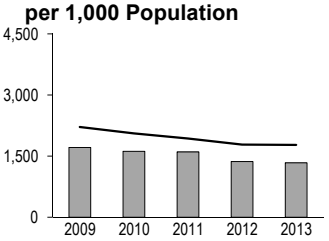
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	2.82	2.77	2.70	2.67	2.64
Average	2.52	2.50	2.49	2.47	2.51

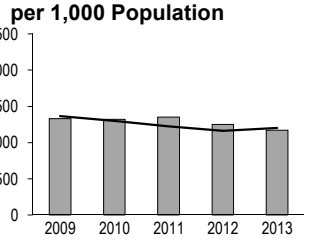
Workload Measures

Total Calls Answered per 1,000 Population



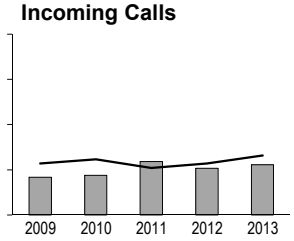
	2009	2010	2011	2012	2013
Concord	1,710	1,618	1,600	1,367	1,336
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Concord	1,329	1,322	1,350	1,249	1,171
Average	1,364	1,298	1,222	1,160	1,202

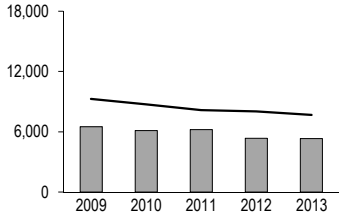
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Concord	20.9%	21.9%	29.4%	25.7%	27.8%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

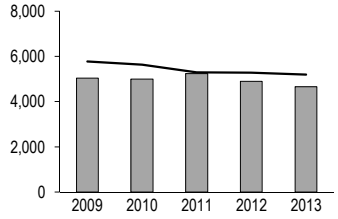
Efficiency Measures

Calls Answered per Telecommunicator



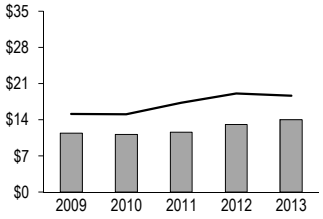
	2009	2010	2011	2012	2013
Concord	6,487	6,123	6,205	5,359	5,309
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Concord	5,043	5,004	5,236	4,900	4,652
Average	5,769	5,631	5,295	5,274	5,192

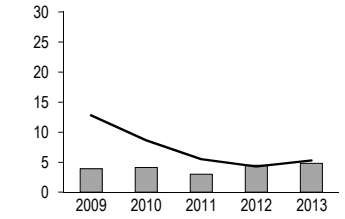
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Concord	$11.38	$11.18	$11.56	$13.05	$13.98
Average	$15.12	$15.04	$17.31	$19.09	$18.67

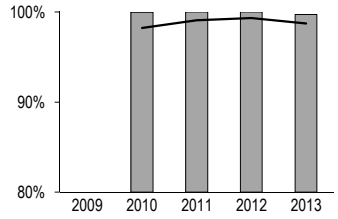
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



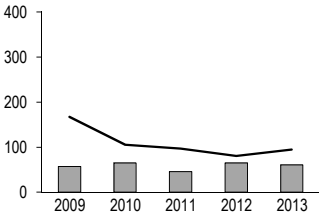
	2009	2010	2011	2012	2013
Concord	4	4	3	4	5
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Concord		100%	100%	100%	100%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Concord	57	65	46	65	61
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Durham Emergency Communications Center operates under an interlocal agreement between the City of Durham and Durham County, managing public safety calls for law enforcement, emergency medical services, and fire services. The Durham Emergency Communications Center is a public safety answering point (PSAP). Only the Durham County Sheriff's Department is not dispatched from the 911 communications center.

The center is a separate agency within city government that is funded by both the city and the county. All 911 calls for the city and county are received in the communications center and answered by telecommunicators. The center is not part of the police department.

Durham owns and maintains three towers of its own and rents space for one tower. The city uses a twenty-channel trunked 800 MHz Motorola system.

Durham's communication center handled a total of 437,137 incoming calls in FY 2001–12, dispatching 330,399 calls. The city defines highest priority emergency calls as life-threatening or property-threatening situations in progress or an officer needing assistance.

Durham received $1,413,750 in E-911 revenues to support the system operations.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)–Durham County	280,921
Land Area (Square Miles)	296.60
Persons per Square Mile	947
Median Family Income U.S. Census 2010	$58,976
County	Durham

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	69.0
Other	12.0
Total Positions	81.0
Average Length of Service for Call-Takers	7.1 years
Total Incoming Calls	437,137
Total 911 Calls	346,397
Total Calls Dispatched	330,399
Outgoing Calls Other than Dispatch	190,201
Revenue from E-911 Fees	$1,413,750

Full Cost Profile

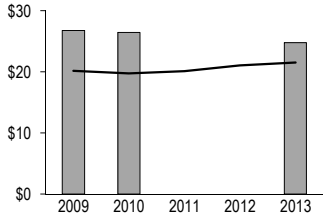
Cost Breakdown by Percentage	
Personal Services	60.6%
Operating Costs	32.7%
Capital Costs	6.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,217,830
Operating Costs	$2,275,142
Capital Costs	$471,796
TOTAL	$6,964,768

Durham Emergency Communications

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

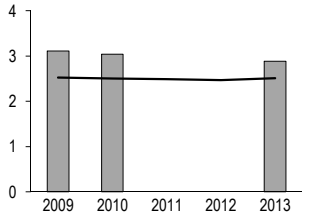
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Durham	$26.79	$26.48			$24.79
Average	$20.20	$19.76	$20.15	$21.07	$21.51

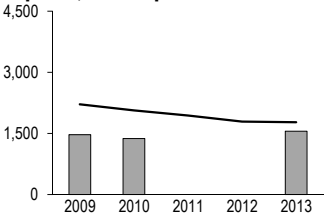
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	3.11	3.04			2.88
Average	2.52	2.50	2.49	2.47	2.51

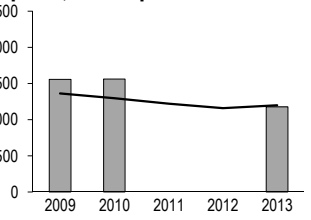
Workload Measures

Total Calls Answered per 1,000 Population



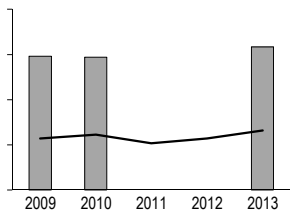
	2009	2010	2011	2012	2013
Durham	1,467	1,374			1,556
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Durham	1,560	1,561			1,176
Average	1,364	1,298	1,222	1,160	1,202

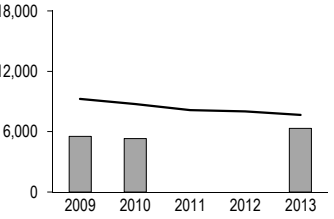
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Durham	74.1%	73.6%			79.2%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

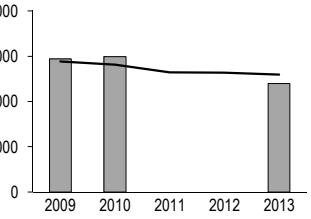
Efficiency Measures

Calls Answered per Telecommunicator



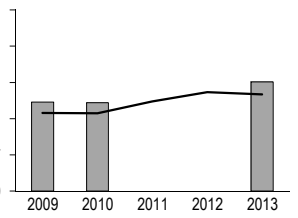
	2009	2010	2011	2012	2013
Durham	5,538	5,300			6,335
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Durham	5,889	5,983			4,788
Average	5,769	5,631	5,295	5,274	5,192

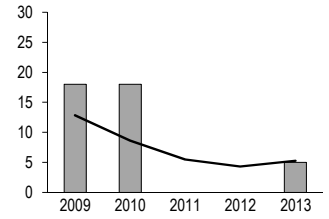
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Durham	$17.17	$17.07			$21.08
Average	$15.12	$15.04	$17.31	$19.09	$18.67

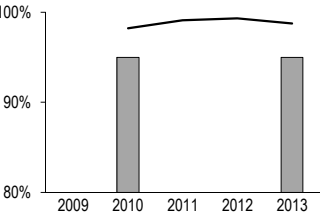
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



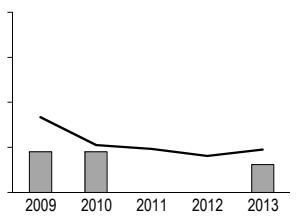
	2009	2010	2011	2012	2013
Durham	18	18			5
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Durham		95%			95%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Durham	90	90			62
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Guilford Metro 911 operates under an interlocal agreement between the City of Greensboro and Guilford County. The public safety answering point serves as a separate department providing emergency communications for the City of Greensboro, Guilford County, and Gibsonville (except for the City of High Point Police and Fire departments). The services include dispatch and call intake for all law agencies, fire agencies, and EMS. The consolidation process enabled the first update of all 911 equipment in ten years and the creation of a back-up E-911 center to improve disaster preparedness. These changes contributed to slightly higher operational costs.

Guilford Metro 911 uses a twenty-eight-channel Motorola SmartNet 800 MHz radio system. The system has five tower sites and is jointly owned with Guilford County.

Greensboro's communications center handled a total of 609,999 incoming calls in the fiscal year, dispatching 453,980 calls. The city defines highest priority emergency calls as call types that require the fastest response, such as shootings, robberies, and domestic violence.

Greensboro received $2,715,590 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Municipal Profile

Population (OSBM 2012)–Guilford County	501,058
Land Area (Square Miles)	649.42
Persons per Square Mile	772
Median Family Income U.S. Census 2010	$52,752
County	Guilford

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	92.0
Other	12.0
Total Positions	104.0
Average Length of Service for Call-Takers	8.8 years
Total Incoming Calls	609,999
Total 911 Calls	370,812
Total Calls Dispatched	453,980
Outgoing Calls Other than Dispatch	161,583
Revenue from E-911 Fees	$2,715,590

Full Cost Profile

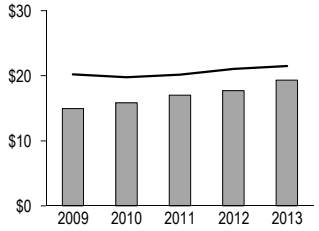
Cost Breakdown by Percentage	
Personal Services	63.4%
Operating Costs	36.6%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,139,285
Operating Costs	$3,550,347
Capital Costs	$0
TOTAL	$9,689,632

Greensboro Emergency Communications

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

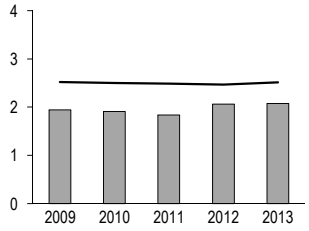
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Greensboro	$14.94	$15.84	$17.04	$17.69	$19.34
Average	$20.20	$19.76	$20.15	$21.07	$21.51

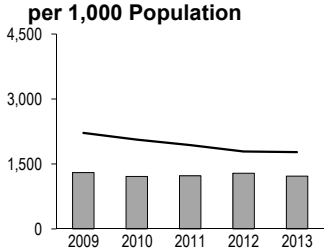
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.94	1.91	1.84	2.06	2.08
Average	2.52	2.50	2.49	2.47	2.51

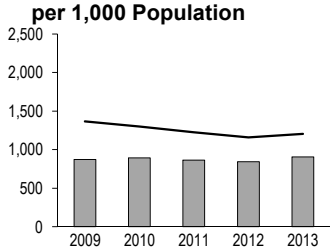
Workload Measures

Total Calls Answered per 1,000 Population



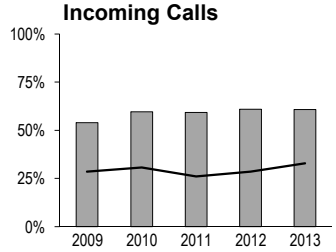
	2009	2010	2011	2012	2013
Greensboro	1,304	1,215	1,224	1,287	1,217
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	873	891	862	842	906
Average	1,364	1,298	1,222	1,160	1,202

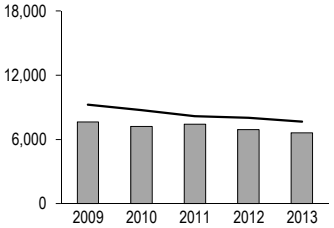
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Greensboro	53.9%	59.6%	59.3%	60.9%	60.8%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

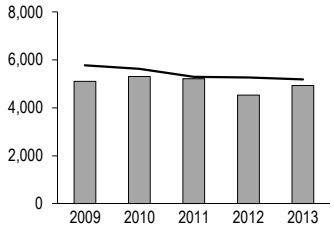
Efficiency Measures

Calls Answered per Telecommunicator



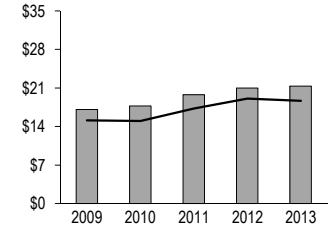
	2009	2010	2011	2012	2013
Greensboro	7,632	7,226	7,412	6,926	6,630
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Greensboro	5,108	5,302	5,217	4,534	4,935
Average	5,769	5,631	5,295	5,274	5,192

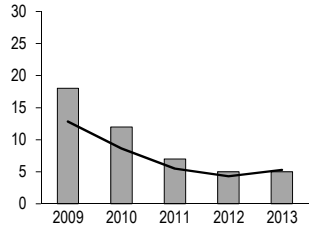
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Greensboro	$17.12	$17.77	$19.77	$21.00	$21.34
Average	$15.12	$15.04	$17.31	$19.09	$18.67

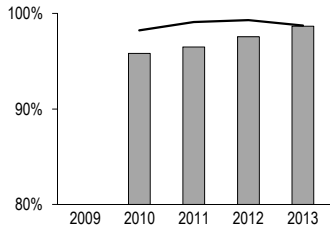
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



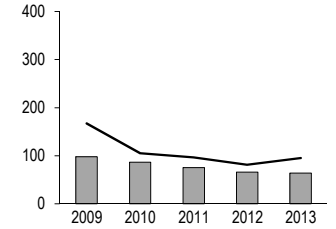
	2009	2010	2011	2012	2013
Greensboro	18	12	7	5	5
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Greensboro		96%	96%	98%	99%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Greensboro	98	86	75	66	64
Average	167	105	97	81	95

Greenville Emergency Communications

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Greenville's emergency communications center is a secondary public safety answering point, with Pitt County being the primary answering point. Pitt County initially receives all 911 calls and dispatches fire and EMS calls inside the city limits. All 911 calls for police services are transferred to the Greenville Police Department emergency communications center for dispatch. Calls can also be directly made to the police department over a dedicated emergency line.

The city does not own its own communications system and infrastructure. Greenville operates on the VIPER system maintained by the North Carolina State Highway Patrol. This system if fully maintained and operated by the state. The system has one tower located within the city limits and fully supports communication interoperability among all law enforcement agencies in Pitt County and with Greenville Fire/Rescue and East Care medical transport.

Greenville's center took in 136,878 incoming calls in the fiscal year and dispatched 88,828 calls.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Starting in June 2009, a new system allowed CAD entry to be automatically generated by hitting a "New Call" icon.

Telecommunicators in Greenville are also tasked with overseeing public safety cameras through several large monitors. When needed, they are instructed to log events requiring a response as service calls. This video monitoring results in higher staffing needs in the emergency communications center.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395
County	Pitt

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	No
Other	No
FTE Positions	
Telecommunicators/Call-Takers	16.0
Other	1.0
Total Positions	17.0
Average Length of Service for Call-Takers	10.0 years
Total Incoming Calls	136,878
Total 911 Calls	49,054
Total Calls Dispatched	88,828
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	None

Full Cost Profile

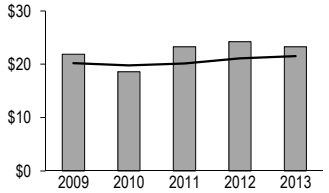
Cost Breakdown by Percentage	
Personal Services	57.9%
Operating Costs	39.1%
Capital Costs	3.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,159,289
Operating Costs	$781,592
Capital Costs	$60,180
TOTAL	$2,001,061

Greenville Emergency Communications

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

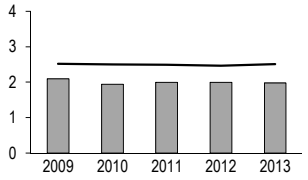
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Greenville	$21.85	$18.55	$23.27	$24.20	$23.23
Average	$20.20	$19.76	$20.15	$21.07	$21.51

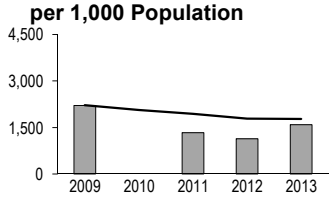
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	2.10	1.94	2.00	2.00	1.97
Average	2.52	2.50	2.49	2.47	2.51

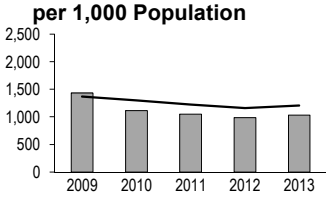
Workload Measures

Total Calls Answered per 1,000 Population



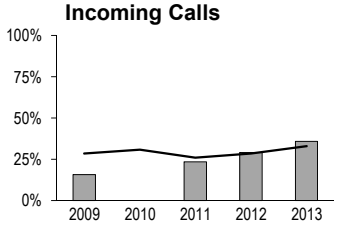
	2009	2010	2011	2012	2013
Greenville	2,207		1,336	1,133	1,589
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	1,431	1,115	1,051	983	1,031
Average	1,364	1,298	1,222	1,160	1,202

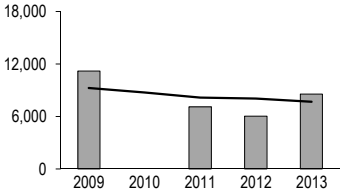
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Greenville	15.8%		23.5%	29.1%	35.8%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

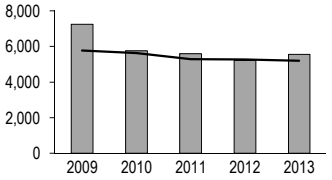
Efficiency Measures

Calls Answered per Telecommunicator



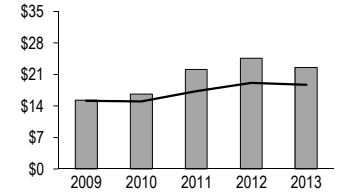
	2009	2010	2011	2012	2013
Greenville	11,184		7,108	6,021	8,555
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Greenville	7,252	5,753	5,592	5,223	5,552
Average	5,769	5,631	5,295	5,274	5,192

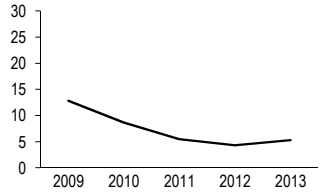
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Greenville	$15.27	$16.64	$22.14	$24.63	$22.53
Average	$15.12	$15.04	$17.31	$19.09	$18.67

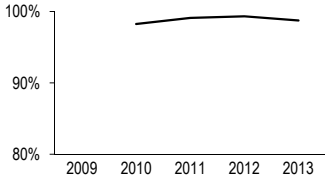
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



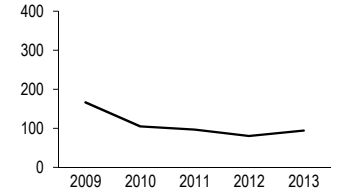
	2009	2010	2011	2012	2013
Greenville					
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Greenville					
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Greenville					
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Hickory's emergency communications center is a secondary public safety answering point, with Catawba County being the primary answering point. Catwaba County initially receives all 911 calls and dispatches fire and EMS calls inside the city limits. All 911 calls for police services are transferred to the emergency communications center for dispatch. Any emergency calls for other city services are transferred to the emergency communications center between 3:30 p.m. and 7:00 a.m.

The city owns its communications system and infrastructure. It uses an Ericson 800 MHz radio system. There is one 1,350-foot tower and antennas at two other sites. The system serves approximately 200 users in five city departments.

Hicory's communications center handled 91,743 incoming calls during the fiscal year, dispatching 67,932 calls.

Conditions Affecting Service, Performance, and Costs

During FY 2011–12, the software tracking emergency communication calls crashed, and the data for calls could not be recovered for the entire year.

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Incoming calls in Hickory are down because of changes in how calls are routed. Several special units now have their own administrative phones, so calls no longer come through the emergency communications center. Additionally, the animal control unit's operations were moved out of the police department, so their calls are now being fed through code enforcement.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income U.S. Census 2010	$54,093
County	Catawba

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	No
Other	No
FTE Positions	
Telecommunicators/Call-Takers	14.0
Other	0.0
Total Positions	14.0
Average Length of Service for Call-Takers	6.8 years
Total Incoming Calls	91,743
Total 911 Calls	7,823
Total Calls Dispatched	67,932
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	None

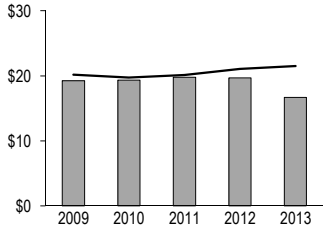
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	82.8%
Operating Costs	17.1%
Capital Costs	0.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$552,450
Operating Costs	$114,032
Capital Costs	$934
TOTAL	$667,416

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

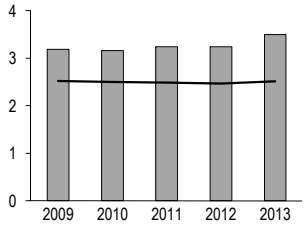
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Hickory	$19.26	$19.33	$19.77	$19.71	$16.67
Average	$20.20	$19.76	$20.15	$21.07	$21.51

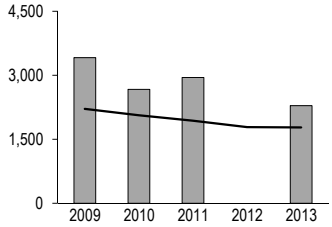
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	3.19	3.16	3.24	3.24	3.50
Average	2.52	2.50	2.49	2.47	2.51

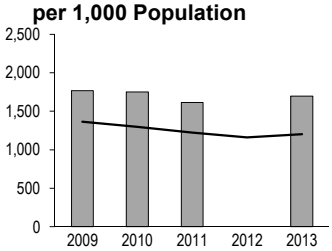
Workload Measures

Total Calls Answered per 1,000 Population



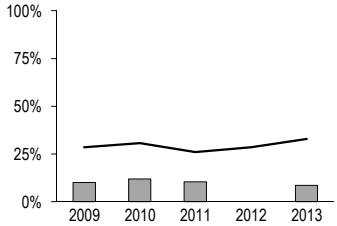
	2009	2010	2011	2012	2013
Hickory	3,411	2,670	2,947		2,291
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	1,768	1,752	1,613		1,697
Average	1,364	1,298	1,222	1,160	1,202

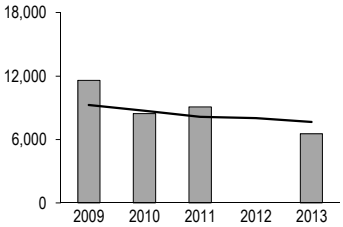
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Hickory	10.0%	12.0%	10.4%		8.5%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

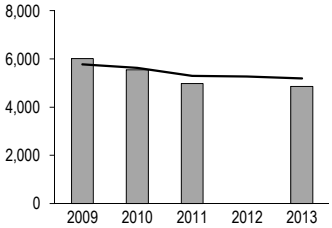
Efficiency Measures

Calls Answered per Telecommunicator



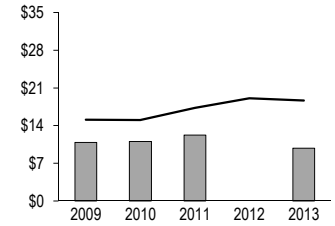
	2009	2010	2011	2012	2013
Hickory	11,587	8,450	9,086		6,553
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Hickory	6,007	5,546	4,974		4,852
Average	5,769	5,631	5,295	5,274	5,192

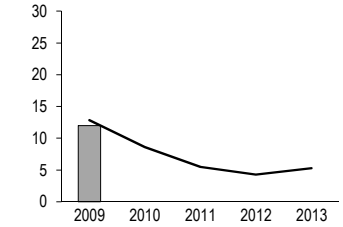
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Hickory	$10.90	$11.03	$12.25		$9.82
Average	$15.12	$15.04	$17.31	$19.09	$18.67

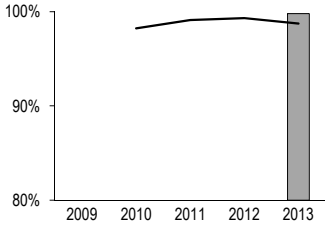
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



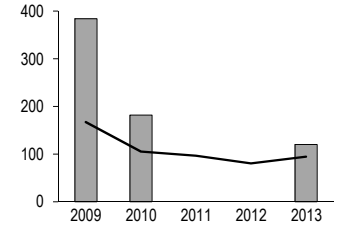
	2009	2010	2011	2012	2013
Hickory	12				
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Hickory					100%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Hickory	384	182			120
Average	167	105	97	81	95

High Point — Emergency Communications

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

High Point's emergency communications center is a civilian-staffed and city-managed department. The center functions as a primary public safety answering point, dispatching all police and fire calls within the city; medical calls are routed to Guilford County EMS.

The center has ten consoles, seven of which are dispatch positions. Operations are conducted by four teams of five telecommunicators and a supervisor. All telecommunicators are cross-trained in fire and police dispatch and function as call-takers and dispatchers. Personnel assigned to the center work rotating twelve-hour shifts.

The city of High Point owns its communications infrastructure. Communications utilizes an 800 MHz radio system that implements analog and digital talk groups. The city uses a Motorola SmartNet system with three towers.

High Point's center handled a total of 279,830 calls in the fiscal year, dispatching 141,952 calls. The city defines highest priority emergency calls as situations likely to result in loss of life, injury, or property damage and crimes in progress.

High Point received $462,211 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

High Point was unable to provide data on certain measures, given a change in technology.

There was a high volume of personnel exits in the police department during FY 2010–11 due to retirements and resignations, and because of a city-wide hiring freeze many positions were left vacant. As a result, there were fewer officers on the street to respond to dispatched calls, resulting in a higher dispatched response time.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720
County	Guilford

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	No
FTE Positions	
Telecommunicators/Call-Takers	26.0
Other	1.0
Total Positions	27.0
Average Length of Service for Call-Takers	11.5 years
Total Incoming Calls	279,830
Total 911 Calls	84,406
Total Calls Dispatched	141,952
Outgoing Calls Other than Dispatch	86,163
Revenue from E-911 Fees	$462,211

Full Cost Profile

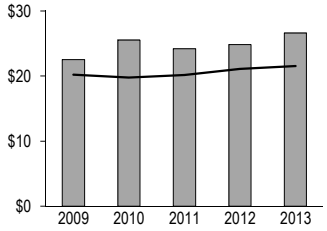
Cost Breakdown by Percentage	
Personal Services	75.9%
Operating Costs	20.4%
Capital Costs	3.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,149,988
Operating Costs	$576,726
Capital Costs	$105,739
TOTAL	$2,832,453

High Point — Emergency Communications

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

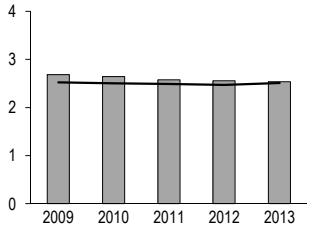
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
High Point	$22.51	$25.53	$24.18	$24.81	$26.62
Average	$20.20	$19.76	$20.15	$21.07	$21.51

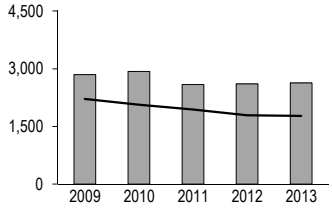
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	2.68	2.64	2.58	2.56	2.54
Average	2.52	2.50	2.49	2.47	2.51

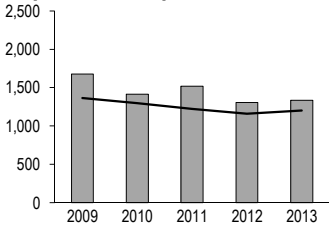
Workload Measures

Total Calls Answered per 1,000 Population



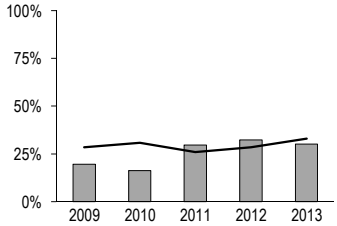
	2009	2010	2011	2012	2013
High Point	2,847	2,925	2,589	2,603	2,630
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
High Point	1,677	1,415	1,517	1,305	1,334
Average	1,364	1,298	1,222	1,160	1,202

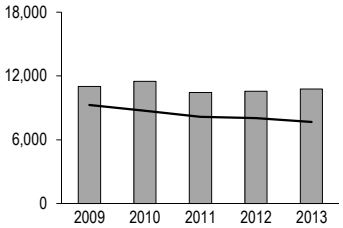
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
High Point	19.6%	16.2%	29.7%	32.3%	30.2%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

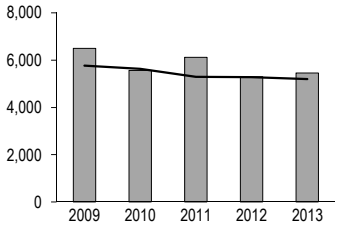
Efficiency Measures

Calls Answered per Telecommunicator



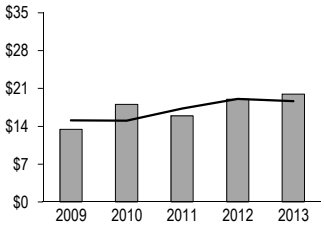
	2009	2010	2011	2012	2013
High Point	11,020	11,501	10,434	10,563	10,763
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
High Point	6,491	5,563	6,114	5,296	5,460
Average	5,769	5,631	5,295	5,274	5,192

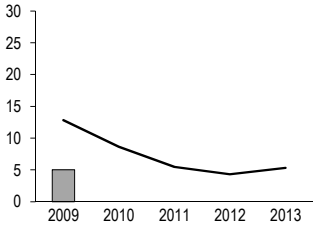
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
High Point	$13.42	$18.04	$15.94	$19.01	$19.95
Average	$15.12	$15.04	$17.31	$19.09	$18.67

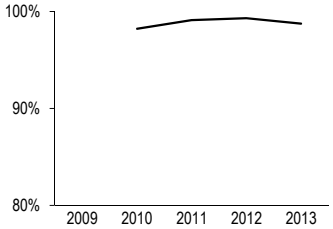
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



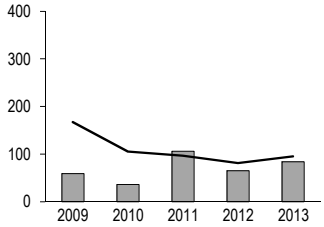
	2009	2010	2011	2012	2013
High Point	5				
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
High Point					
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
High Point	59	36	106	65	84
Average	167	105	97	81	95

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The emergency communications center is located in the police department and processes 911 emergency and non-emergency calls. Fire and EMS calls are handled by Rowan County. Many of the calls come directly to the center. Others from city residents go initially to the Rowan County communications center and are then immediately switched to the city's police communications center. The city's center operates twenty-four hours a day, seven days a week.

The city owns its communications equipment, including infrastructure. The system is a Motorola 800 MHz trunked SmartNet system with a single, twenty-channel analog site and two GHz microwave sites.

Salisbury's communication center reported total incoming calls of 64,142 for the fiscal year, dispatching 30,610 calls. The city defines highest priority emergency calls as those involving crimes in progress and calls involving injury or imminent injury to a person.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Salisbury was unable to provide data for some of the effectiveness measures in past years, given the structure of its database.

The money collected from the E-911 fee in Salisbury all goes to Rowan County.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192
County	Rowan

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	No
Other	No
FTE Positions	
Telecommunicators/Call-Takers	10.0
Other	0.0
Total Positions	10.0
Average Length of Service for Call-Takers	6.3 years
Total Incoming Calls	64,142
Total 911 Calls	11,871
Total Calls Dispatched	30,610
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	None

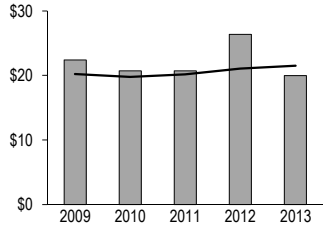
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	71.9%
Operating Costs	24.5%
Capital Costs	3.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$479,638
Operating Costs	$163,226
Capital Costs	$23,863
TOTAL	$666,727

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

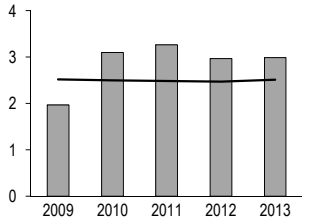
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Salisbury	$22.40	$20.69	$20.72	$26.34	$19.94
Average	$20.20	$19.76	$20.15	$21.07	$21.51

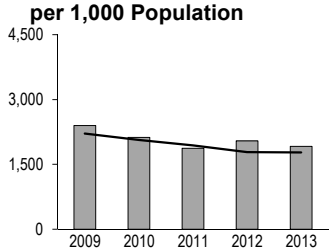
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	1.97	3.10	3.26	2.97	2.99
Average	2.52	2.50	2.49	2.47	2.51

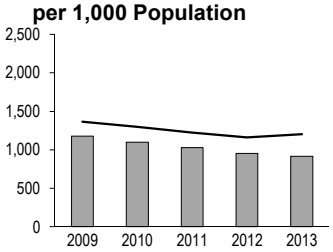
Workload Measures

Total Calls Answered per 1,000 Population



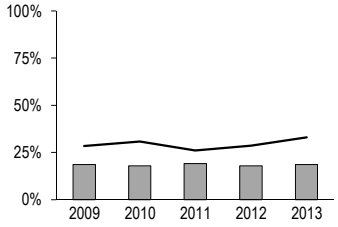
	2009	2010	2011	2012	2013
Salisbury	2,396	2,120	1,872	2,044	1,918
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	1,179	1,099	1,028	955	915
Average	1,364	1,298	1,222	1,160	1,202

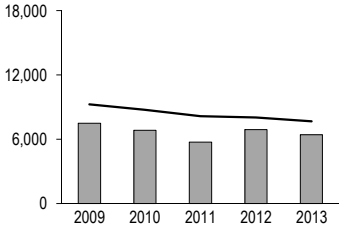
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Salisbury	18.6%	17.8%	19.1%	17.9%	18.5%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

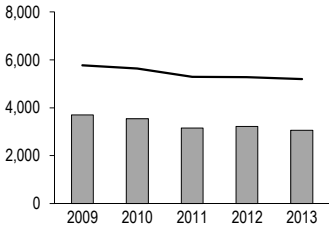
Efficiency Measures

Calls Answered per Telecommunicator



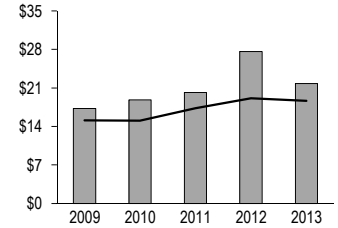
	2009	2010	2011	2012	2013
Salisbury	7,502	6,838	5,739	6,890	6,414
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Salisbury	3,693	3,545	3,152	3,217	3,061
Average	5,769	5,631	5,295	5,274	5,192

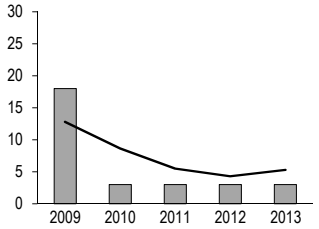
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Salisbury	$17.29	$18.83	$20.15	$27.59	$21.78
Average	$15.12	$15.04	$17.31	$19.09	$18.67

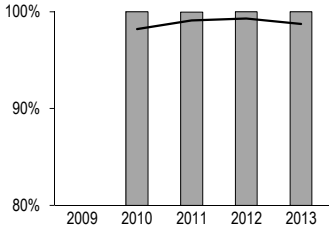
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



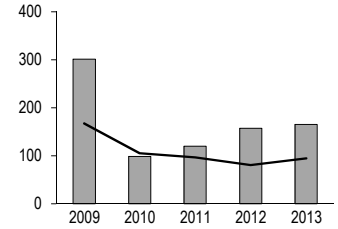
	2009	2010	2011	2012	2013
Salisbury	18	3	3	3	3
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Salisbury		100%	100%	100%	100%
Average		98%	99%	99%	99%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Salisbury	301	99	120	157	165
Average	167	105	97	81	95

Winston-Salem Emergency Communications

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Winston-Salem's emergency communications center is part of the police department and handles 911 and non-emergency calls for police and fire. Calls received for EMS, the Sheriff's Office, county fire, and the highway patrol are transferred to the appropriate agency. All telecommunicators are hired and trained as call-takers and dispatchers.

The city owns the infrastructure but contracts with local vendors to provide telecommunications services. The City of Winston-Salem and Forsyth County implemented a voice radio system in October 2004. The Motoroloa ASTRO 800 MHz Trunked Simulcast system is made up of eight tower sites utilizing fifteen channels. The Winston-Salem Police Department uses a non-trunked 800 MHz system for the mobile data system, with one transmitter site using three channels.

Winston-Salem's center handled a total of 480,681 calls in the fiscal year, dispatching 304,804 calls. The city defines highest priority emergency calls as calls with a significant threat of imminent injury to persons or calls for crimes against persons that are in progress or just occurred and the suspect is still there.

Conditions Affecting Service, Performance, and Costs

The measure "percent of E-911 calls answered within twenty seconds" is a new measure added for FY 2009–10.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491
County	Forsyth

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	No
FTE Positions	
Telecommunicators/Call-Takers	48.0
Other	1.0
Total Positions	49.0
Average Length of Service for Call-Takers	8.2 years
Total Incoming Calls	480,681
Total 911 Calls	212,598
Total Calls Dispatched	304,804
Outgoing Calls Other than Dispatch	70,612
Revenue from E-911 Fees	$582,762

Full Cost Profile

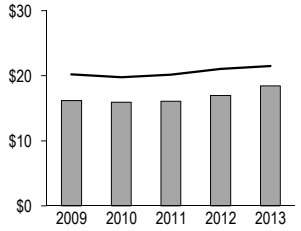
Cost Breakdown by Percentage	
Personal Services	68.9%
Operating Costs	26.9%
Capital Costs	4.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,961,768
Operating Costs	$1,157,755
Capital Costs	$182,166
TOTAL	$4,301,689

Winston-Salem Emergency Communications

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

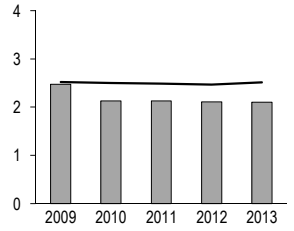
Resource Measures

Emergency Communications Services Costs per Capita



	2009	2010	2011	2012	2013
Winston-Salem	$16.16	$15.93	$16.07	$16.96	$18.44
Average	$20.20	$19.76	$20.15	$21.07	$21.51

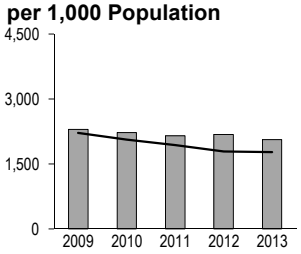
Emergency Communications FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	2.47	2.13	2.13	2.11	2.10
Average	2.52	2.50	2.49	2.47	2.51

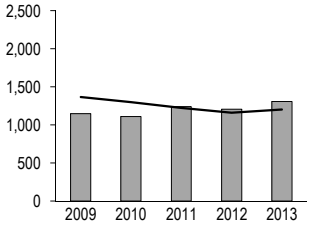
Workload Measures

Total Calls Answered per 1,000 Population



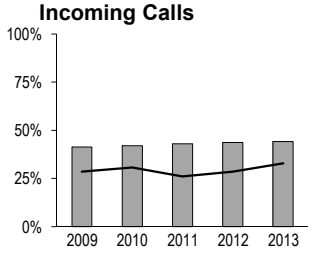
	2009	2010	2011	2012	2013
Winston-Salem	2,295	2,225	2,152	2,179	2,061
Average	2,214	2,062	1,935	1,786	1,775

Calls Dispatched per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	1,147	1,108	1,240	1,207	1,307
Average	1,364	1,298	1,222	1,160	1,202

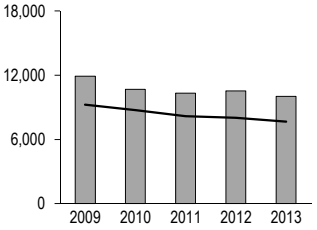
E-911 Calls as a Percentage of All Incoming Calls



	2009	2010	2011	2012	2013
Winston-Salem	41.3%	41.9%	43.0%	43.6%	44.2%
Average	28.5%	30.8%	26.0%	28.5%	32.9%

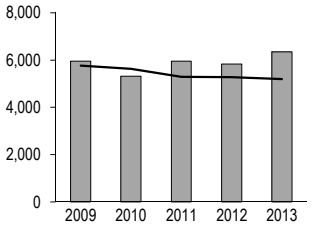
Efficiency Measures

Calls Answered per Telecommunicator



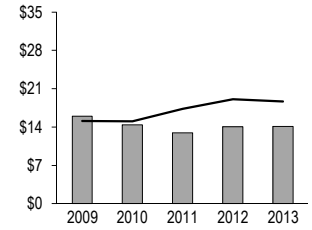
	2009	2010	2011	2012	2013
Winston-Salem	11,915	10,677	10,327	10,536	10,014
Average	9,260	8,737	8,159	8,031	7,663

Calls Dispatched per Telecommunicator



	2009	2010	2011	2012	2013
Winston-Salem	5,956	5,314	5,951	5,836	6,350
Average	5,769	5,631	5,295	5,274	5,192

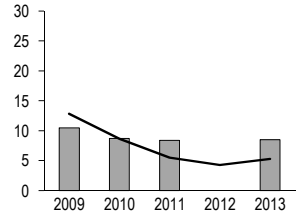
Emergency Communications Cost per Call Dispatched



	2009	2010	2011	2012	2013
Winston-Salem	$15.97	$14.38	$12.96	$14.06	$14.11
Average	$15.12	$15.04	$17.31	$19.09	$18.67

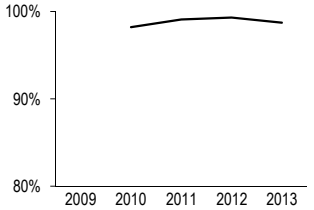
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



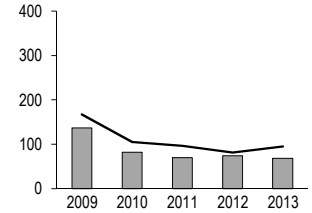
	2009	2010	2011	2012	2013
Winston-Salem	11	9	8		9
Average	13	9	5	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2009	2010	2011	2012	2013
Winston-Salem					
Average	98%	99%	99%	99%	

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2009	2010	2011	2012	2013
Winston-Salem	137	82	70	74	68
Average	167	105	97	81	95

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

ASPHALT MAINTENANCE AND REPAIR

PERFORMANCE MEASURES FOR ASPHALT MAINTENANCE AND REPAIR

SERVICE DEFINITION

Asphalt Maintenance and Repair includes the activities of pothole repair, repaving, surface treatment, structure adjustments, milling, and utility cuts. It does not include reconstruction, handicap ramps, storm drainage, sidewalks, curb and gutter, right of way maintenance, street cleaning and sweeping, pavement marking, lane widening, unpaved street maintenance, or snow and ice removal.

NOTES ON PERFORMANCE MEASURES

1. Lane Miles Maintained

This measure refers to total lane miles that a municipality maintains, including state streets and municipal streets. The standard lane mile is 12 feet in width and 5,280 feet in length. Some jurisdictions do not track lane miles. Therefore, a methodology must be employed to calculate lane miles for participation.

2. Potholes and Utility Cuts per Lane Mile

Breaks in pavement due to potholes or to intentional utility cuts affects asphalt maintenance workload in the short term and long term because of breaks in the pavement integrity.

3. Cost of Road Treatment per Lane Mile

This is the cost of different types of asphalt treatment that a municipality may use to maintain or repair roads. Treatments include preservation work such as crack or slurry sealing; resurfacing, which is typically one to two inches of new asphalt; and rehabilitation, which combines resurfacing with milling work to repair more damaged roads.

4. Cost of Asphalt Maintenance and Repair

Total cost of asphalt maintenance and repair represents the total direct, indirect, and capital costs taken from the accounting form. “Cost of maintenance” represents total cost from the accounting form minus cost of any treatment efforts by contract and municipal crews.

5. Percentage of Street Segments Rated 85 or Better and Below 45

Many municipalities use standard rating systems for assessing street pavement condition. These systems apply professionally determined criteria and embody scales that provide relatively objective ratings. These measures indicate the proportion of street segments that are rated 85 or better, which is good condition, and those rated below 45, which is poor condition, on the most recent street pavement assessment.

6. Percentage of Potholes Repaired within Twenty-Four Hours

Repair of potholes in a timely manner is important for maintaining pavement integrity and minimizing further damage to the street and vehicle traffic.

Asphalt Maintenance and Repair

Summary of Key Dimensions of Service

			Total Lane Miles Treated by Type			Percent Treated			
City or Town	Lane Miles Maintained	Number of Registered Motor Vehicles	Preservation	Resurfacing	Rehabilitation	Preservation	Resurfacing	Rehabilitation	FTE Positions for City Staff
Apex	258.7	32,065	0.0	8.6	0.0	0.0%	3.3%	0.0%	9.0
Asheville	713.1	66,542	0.0	0.0	4.3	0.0%	0.0%	0.6%	23.7
Burlington	531.6	NA	11.4	7.2	4.0	2.1%	1.4%	0.8%	4.3
Cary	948.8	113,880	0.0	23.9	0.8	0.0%	2.5%	0.1%	14.5
Charlotte	5261.8	547,513	24.2	29.5	119.1	0.5%	0.6%	2.3%	121.0
Concord	673.1	64,250	0.0	0.0	0.0	0.0%	0.0%	0.0%	11.6
Durham	1888.1	163,951	10.5	0.0	87.0	0.6%	0.0%	4.6%	44.0
Greensboro	3633.0	199,811	18.1	23.0	0.0	0.5%	0.6%	0.0%	51.0
Greenville	537.3	53,008	0.7	0.0	0.0	0.1%	0.0%	0.0%	10.0
Hickory	719.2	30,709	0.0	9.1	0.0	0.0%	1.3%	0.0%	7.0
High Point	1479.0	60,556	37.4	10.9	2.1	2.5%	0.7%	0.1%	15.3
Salisbury	342.4	21,740	0.0	1.8	2.3	0.0%	0.5%	0.7%	5.3
Wilmington	796.8	123,205	0.0	6.2	2.0	0.0%	0.8%	0.2%	14.0
Wilson	956.2	NA	1.1	11.9	0.0	0.1%	1.2%	0.0%	5.5
Winston-Salem	2183.5	170,373	14.8	0.1	15.2	0.7%	0.0%	0.7%	43.0

EXPLANATORY FACTORS

These are factors that the project found affected asphalt maintenance and repair performance and cost in one or more of the municipalities:

Costs of materials in different cities
Weather conditions and terrain
Vehicle burden placed on streets
Age of street infrastructure
Depth of materials applied in repaving
Extent of contracting

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Town of Apex's Streets Department was responsible for maintaining approximately 259 lane miles during FY 2012–13. The Streets Department is part of the Public Works and Utilites Division for the town.

The town treated 8.6 lane miles during the fiscal year, equating to approximately 3.3 percent of total lane miles. All of this work was resurfacing work. The work was done by a contractor, with the average depth used at one inch. The contractor used 9,196 tons of asphalt for the resurfacing.

The city reported that 79 percent of its lane miles were rated 85 or better on the pavement condition rating. The rating was performed by US Infrastructure of Carolina, Inc. using windshield surveying in 2011.

The number of potholes reported for FY 2012–13 was forty-two.

The percentage of potholes repaired within twenty-four hours was approximately 50 percent. The town only repairs within one day those potholes which are considered large and dangerous. Smaller potholes are repaired when the streets crews can get to them.

The Streets Department also repaired fifty-five utility cuts and made a large number of maintenance patches requiring 5,952 tons of asphalt.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	6.00
FTE Positions—Other	3.00
Lane Miles Maintained	258.7
Lane Miles Treated	
Preservation	0.0
Resurfacing	8.6
Rehabilitation	0.0
TOTAL	8.6
Total Costs for All Treatment Types	$868,401
Potholes Repaired	42
Number of Utility Cuts	55
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	32,065
Registered Vehicles/Square Mile	2,052
Average Cost per Ton of Hot Asphalt during Year	$92.45

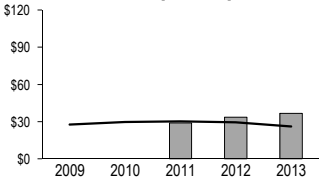
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	21.7%
Operating Costs	71.9%
Capital Costs	6.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$316,272
Operating Costs	$1,049,548
Capital Costs	$94,278
TOTAL	$1,460,098

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

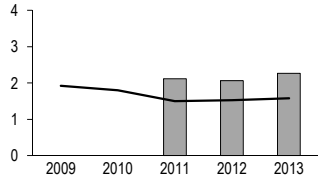
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



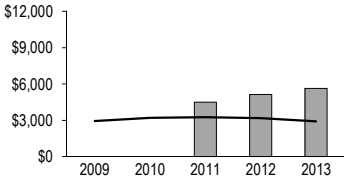
	2009	2010	2011	2012	2013
Apex			$29.02	$33.70	$36.72
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			2.12	2.07	2.26
Average	1.92	1.80	1.50	1.52	1.58

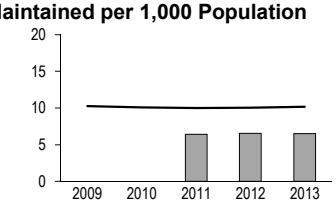
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Apex			$4,509	$5,130	$5,643
Average	$2,941	$3,208	$3,263	$3,184	$2,916

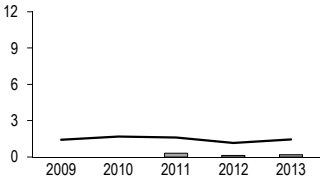
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



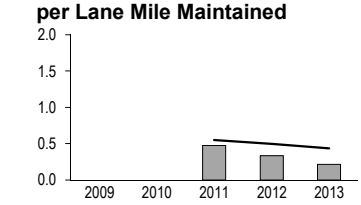
	2009	2010	2011	2012	2013
Apex			6.4	6.6	6.5
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Apex			0.31	0.12	0.16
Average	1.41	1.67	1.59	1.15	1.43

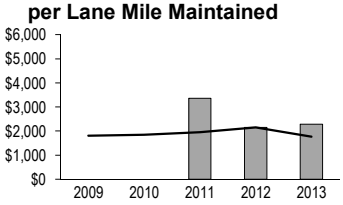
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Apex			0.47	0.33	0.21
Average			0.55	0.50	0.44

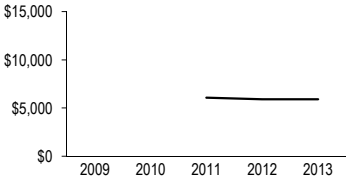
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



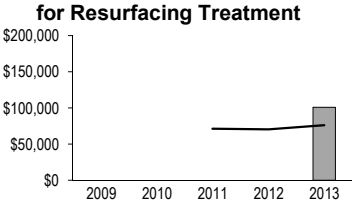
	2009	2010	2011	2012	2013
Apex			$3,358	$2,150	$2,287
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



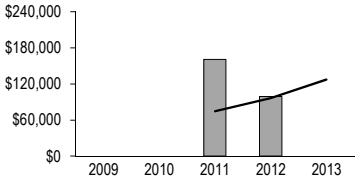
	2009	2010	2011	2012	2013
Apex					
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



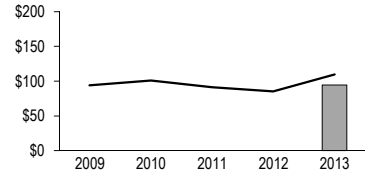
	2009	2010	2011	2012	2013
Apex					$100,97
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Apex			$160,64	$99,040	
Average			$74,579	$96,484	$127,06

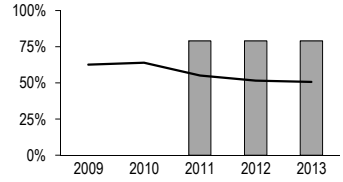
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Apex					$94
Average	$94	$101	$91	$85	$110

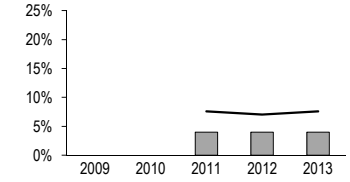
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



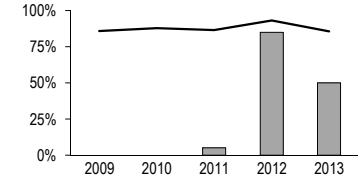
	2009	2010	2011	2012	2013
Apex			79%	79%	79%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Apex			4.0%	4.0%	4.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Apex			5%	85%	50%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Asheville was responsible for maintaining approximately 713 lane miles during FY 2012–13. The city treated 4.3 lane miles during the year, equating to approximately 0.6 percent of total lane miles.

Most of the repair work done was rehabilitation, requiring milling and then resurfacing. Most of the work completed, 3.93 miles in total, was done by city crews, while a contractor rehabilitated 0.32 lane miles. A total of 5,807 tons of asphalt was used, with an average depth laid of 2.5 inches by city crews.

The city reported that 3.0 percent of its lane miles were rated 85 or above on its most recent street pavement condition rating. This rating was done by in-house staff using the Institute for Transportation Research and Education (ITRE) system in 2009.

The number of potholes reported for FY 2012–13 was 5,092. The percentage of potholes repaired within twenty-four hours was approximately 99 percent.

The city has a permitting system for any utility cuts that must be made either by city or contractor crews. A total of 1,050 utility cuts were repaired during the year.

Conditions Affecting Service, Performance, and Costs

Due to the somewhat harsher mountain weather in Asheville compared to the other benchmarking partners, problems with pavement, such as potholes, tend to be more common.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

The large number of construction utility cuts reduced the amount of preventive maintenance work that the street crews were able to manage during the year.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Topography	Hill, mountains
Climate	Moderate; ice and snow

Service Profile

FTE Positions—Crews	21.00
FTE Positions—Other	2.66
Lane Miles Maintained	713.1
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	4.3
TOTAL	4.3
Total Costs for All Treatment Types	$783,343
Potholes Repaired	5,092
Number of Utility Cuts	1,050
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	66,542
Registered Vehicles/Square Mile	1,466
Average Cost per Ton of Hot Asphalt during Year	$80.67

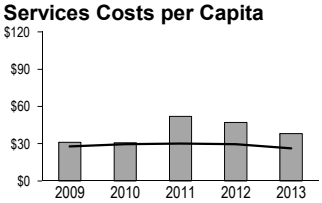
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	30.1%
Operating Costs	57.7%
Capital Costs	12.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$989,301
Operating Costs	$1,895,260
Capital Costs	$399,056
TOTAL	$3,283,617

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

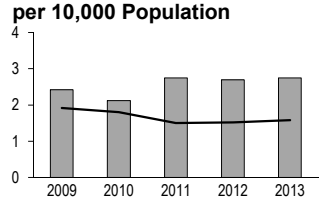
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



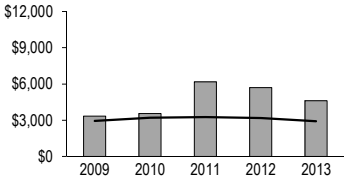
	2009	2010	2011	2012	2013
Asheville	$31.14	$30.50	$51.90	$47.23	$38.09
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	2.42	2.12	2.75	2.70	2.74
Average	1.92	1.80	1.50	1.52	1.58

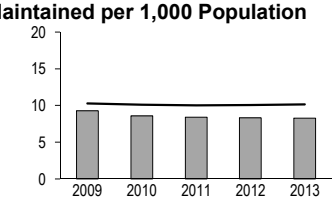
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Asheville	$3,354	$3,556	$6,183	$5,684	$4,605
Average	$2,941	$3,208	$3,263	$3,184	$2,916

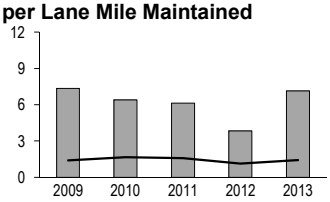
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



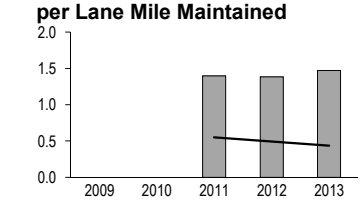
	2009	2010	2011	2012	2013
Asheville	9.3	8.6	8.4	8.3	8.3
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Asheville	7.36	6.41	6.13	3.84	7.14
Average	1.41	1.67	1.59	1.15	1.43

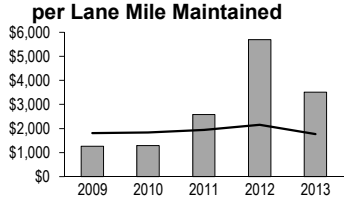
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Asheville			1.40	1.39	1.47
Average			0.55	0.50	0.44

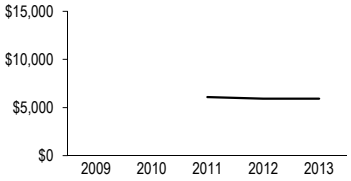
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



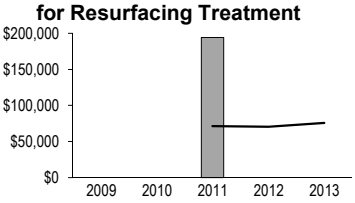
	2009	2010	2011	2012	2013
Asheville	$1,268	$1,295	$2,582	$5,684	$3,506
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



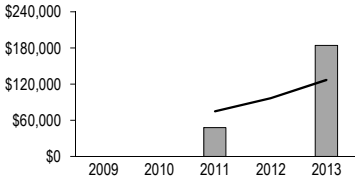
	2009	2010	2011	2012	2013
Asheville					
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



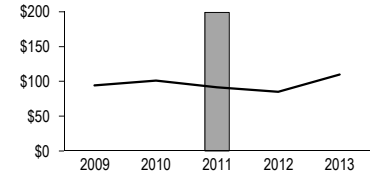
	2009	2010	2011	2012	2013
Asheville			$194,07		
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Asheville			$47,973		$184,31
Average			$74,579	$96,484	$127,06

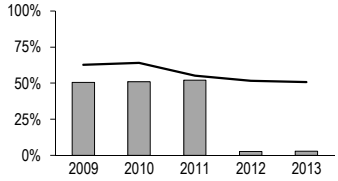
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Asheville			$199		
Average	$94	$101	$91	$85	$110

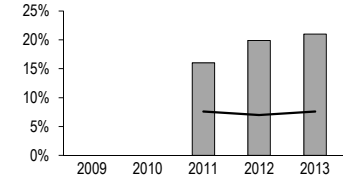
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



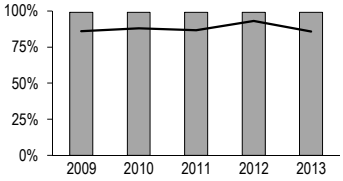
	2009	2010	2011	2012	2013
Asheville	51%	51%	52%	3%	3%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Asheville			16.0%	19.9%	21.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Asheville	99%	99%	99%	99%	99%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Burlington was responsible for maintaining 532 lane miles during FY 2012–13. The city treated a total of 22.6 lane miles, equating to approximately 4.3 percent of total lane miles.

Of the street work done, 11.4 miles were given preservation treatment such as crack sealing or thin overlays. The preservation work was done by contractors and city crews.Resurfacing work was done on 7.2 miles. All of the work involving resurfacing was done by contractors ,who used 5,471 tons of asphalt and laid an average 1.5 inch thickness on repaired pavement. Rehabilitation work was done by contractors on 4.0 lane miles, with milling followed by resurfacing.

The city reported that 73 percent of its street lane miles rated 85 or above on its most recent rating. The most recent study relied on US Infrastructure of Carolina, Inc. and the Institute for Transportation Research and Education (ITRE) system and was conducted in 2012.

The city reported a total of eighty-nine potholes,with 100 percent of them repaired within twenty-four hours. The city takes a proactive approach and eliminates many potential potholes before they form. The city covers one-sixth of the city each month looking for potential problems. There were 105 utility cuts in roads repaired during the year, with the repairs being done by the city after private utilities got permits.

Conditions Affecting Service, Performance, and Costs

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	4.00
FTE Positions—Other	0.25
Lane Miles Maintained	531.6
Lane Miles Treated	
Preservation	11.4
Resurfacing	7.2
Rehabilitation	4.0
TOTAL	22.6
Total Costs for All Treatment Types	$488,322
Potholes Repaired	89
Number of Utility Cuts	105
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	NA
Registered Vehicles/Square Mile	NA
Average Cost per Ton of Hot Asphalt during Year	$79.50

Full Cost Profile

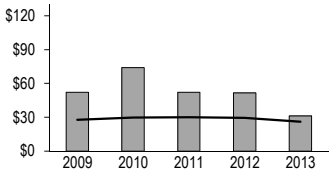
Cost Breakdown by Percentage	
Personal Services	11.6%
Operating Costs	56.3%
Capital Costs	32.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$185,037
Operating Costs	$896,984
Capital Costs	$512,216
TOTAL	$1,594,237

Burlington — Asphalt Maintenance and Repair

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

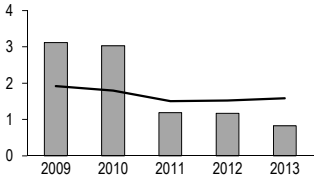
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



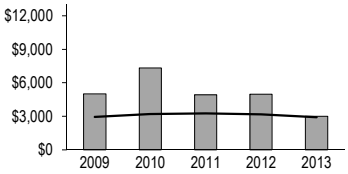
	2009	2010	2011	2012	2013
Burlington	$52.22	$74.10	$52.07	$51.74	$31.14
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	3.12	3.03	1.19	1.17	0.83
Average	1.92	1.80	1.50	1.52	1.58

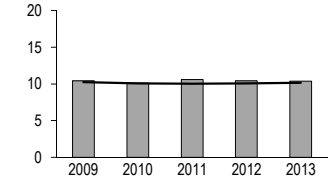
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Burlington	$5,008	$7,325	$4,922	$4,973	$2,999
Average	$2,941	$3,208	$3,263	$3,184	$2,916

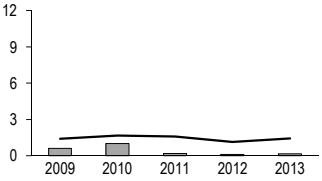
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



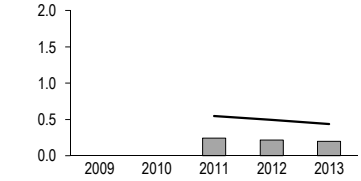
	2009	2010	2011	2012	2013
Burlington	10.4	10.1	10.6	10.4	10.4
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Burlington	0.63	1.01	0.18	0.12	0.17
Average	1.41	1.67	1.59	1.15	1.43

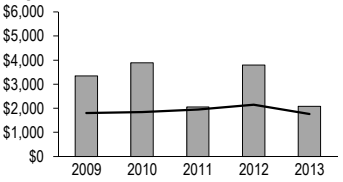
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Burlington			0.24	0.22	0.20
Average			0.55	0.50	0.44

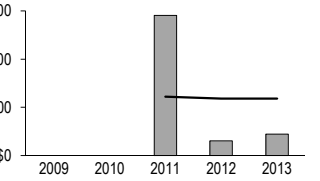
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



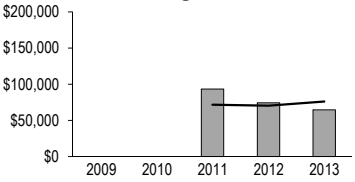
	2009	2010	2011	2012	2013
Burlington	$3,338	$3,881	$2,060	$3,796	$2,080
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



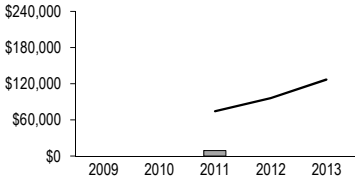
	2009	2010	2011	2012	2013
Burlington			$14,531	$1,515	$2,229
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



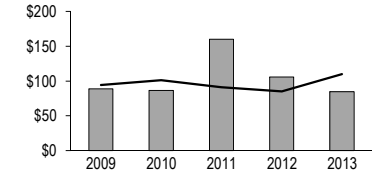
	2009	2010	2011	2012	2013
Burlington			$93,113	$74,343	$64,472
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Burlington			$9,379		
Average			$74,579	$96,484	$127,061

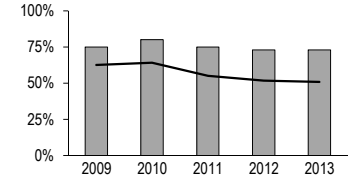
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Burlington	$89	$86	$160	$106	$85
Average	$94	$101	$91	$85	$110

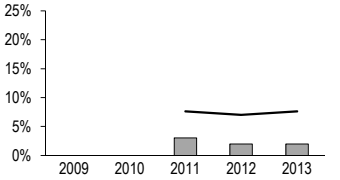
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



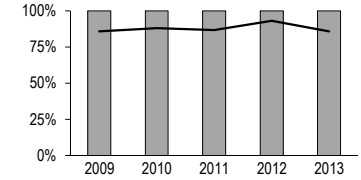
	2009	2010	2011	2012	2013
Burlington	75%	80%	75%	73%	73%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Burlington			3.0%	2.0%	2.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Burlington	100%	100%	100%	100%	100%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Cary was responsible for maintaining approximately 949 lane miles during FY 2012–13. A total of 24.7 lane miles received some form of repair work, equating to approximately 2.6 percent of total lane miles.

For repair work done, 23.9 lane miles were resurfaced by contract crews and an additional 0.8 lane miles were rehabilitated by contractors with milling followed by resurfacing. A total of 22,514 tons of asphalt was used during the fiscal year by contractors for these resurfacing projects. The average resurfacing depth used was 1.3 inches by contractor crews.

The town reported that 358 percent of its street segments rated 85 or above on its most recent pavement condition rating. The most recent study relied on US Infrastructure of Carolina, Inc. using the Institute for Transportation Research and Education (ITRE) system and was conducted in 2013.

The number of potholes reported for FY 2012–13 was eighty-one. The percentage of potholes repaired within twenty-four hours was 81 percent.

A total of 186 utility cuts were made and repaired during the year. The town repairs its own cuts within five days. Other planned utility cuts require a permit before breaking pavement.

A total of sixty-six maintenance patches were also made during the year to fix problems other than utility cuts and potholes.

Conditions Affecting Service, Performance, and Costs

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	12.50
FTE Positions—Other	2.00
Lane Miles Maintained	948.8
Lane Miles Treated	
Preservation	0.0
Resurfacing	23.9
Rehabilitation	0.8
TOTAL	24.7
Total Costs for All Treatment Types	$1,557,773
Potholes Repaired	81
Number of Utility Cuts	186
Number of Maintenance Patches (exclusive of potholes and utility cuts)	66
Registered Vehicles	113,880
Registered Vehicles/Square Mile	2,087
Average Cost per Ton of Hot Asphalt during Year	$78.00

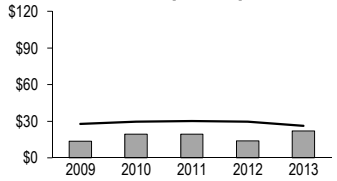
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	8.6%
Operating Costs	86.7%
Capital Costs	4.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$270,879
Operating Costs	$2,737,857
Capital Costs	$147,318
TOTAL	$3,156,054

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

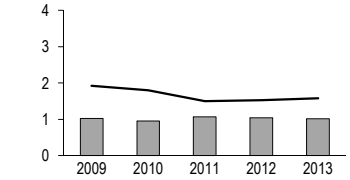
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



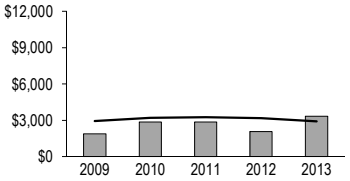
	2009	2010	2011	2012	2013
Cary	$13.56	$19.39	$19.46	$13.84	$22.16
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	1.02	0.95	1.06	1.04	1.02
Average	1.92	1.80	1.50	1.52	1.58

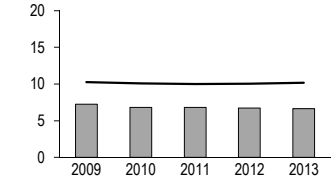
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Cary	$1,875	$2,848	$2,860	$2,058	$3,326
Average	$2,941	$3,208	$3,263	$3,184	$2,916

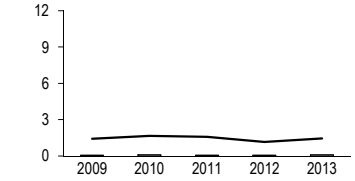
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



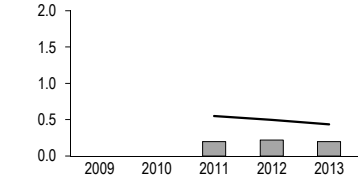
	2009	2010	2011	2012	2013
Cary	7.2	6.8	6.8	6.7	6.7
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Cary	0.07	0.09	0.07	0.07	0.09
Average	1.41	1.67	1.59	1.15	1.43

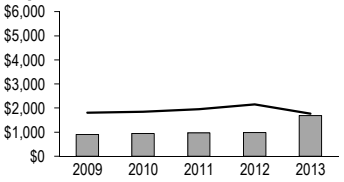
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Cary			0.20	0.22	0.20
Average			0.55	0.50	0.44

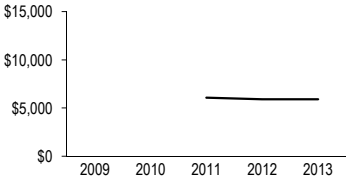
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



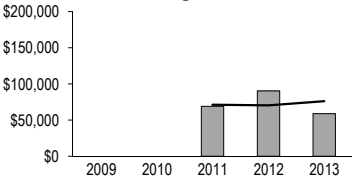
	2009	2010	2011	2012	2013
Cary	$897	$947	$967	$987	$1,685
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



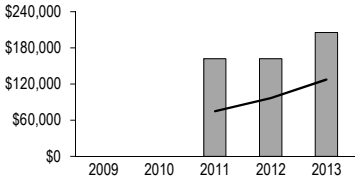
	2009	2010	2011	2012	2013
Cary					
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



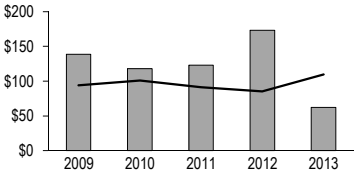
	2009	2010	2011	2012	2013
Cary			$69,124	$90,445	$58,734
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Cary			$162,05	$161,76	$205,38
Average			$74,579	$96,484	$127,06

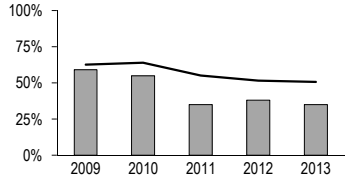
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Cary	$139	$118	$123	$173	$62
Average	$94	$101	$91	$85	$110

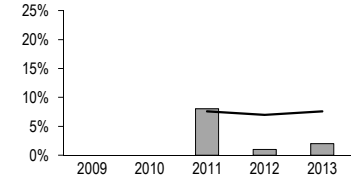
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



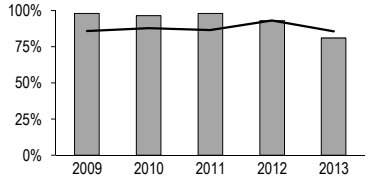
	2009	2010	2011	2012	2013
Cary	59%	55%	35%	38%	35%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Cary			8.0%	1.0%	2.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Cary	98%	97%	98%	93%	81%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Charlotte Street Maintenance Division provides service in the areas of maintenance and repair of street drainage structures; sidewalks; storm debris clean-up; and speciality repair items such as brick walls, decorative pavers, fences, and guardrails. During FY 2012–13, the city was responsible for maintaining approximately 5,262 lane miles and treated 172.8 lane miles, equating to approximately 3.3 percent of total lane miles.

Of the treatement work done during the year, 24.2 lane miles received preservation work, completed by city crews, such as crack sealing or thin overlays. Resurfacing work covered 29.5 lane miles and done by contractors and city crews. Additionally, 119.1 lane miles were rehabilitated by contractors with milling followed by resurfacing. A total of 93,970 tons of asphalt was used during the fiscal year for resurfacing by contractors and city crews. The average resurfacing depth used was 1.11 inches by contractors and 1 inch by city crews.

The city reported that 57 percent of its lane miles rated 85 or above on its most recent pavement condition rating conducted in 2013. The roads were rated using the Hansen Pavement Management system relying on the Institute for Transportation Research and Education (ITRE) degradation curves.

The number of potholes reported for FY 2012–13 was 862. The percentage of potholes repaired within twenty-four hours was 89 percent. A total of 3,639 utility cuts were also repaired duirng the year by contractors and the Street Maintenance Division.

Conditions Affecting Service, Performance, and Costs

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	103.00
FTE Positions—Other	18.00
Lane Miles Maintained	5,261.8
Lane Miles Treated	
Preservation	24.2
Resurfacing	29.5
Rehabilitation	119.1
TOTAL	172.8
Total Costs for All Treatment Types	$7,577,497
Potholes Repaired	862
Number of Utility Cuts	3,639
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	547,513
Registered Vehicles/Square Mile	1,816
Average Cost per Ton of Hot Asphalt during Year	$55.92

Full Cost Profile

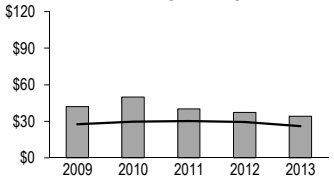
Cost Breakdown by Percentage	
Personal Services	27.3%
Operating Costs	56.9%
Capital Costs	15.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,131,983
Operating Costs	$14,844,458
Capital Costs	$4,105,443
TOTAL	$26,081,884

Charlotte — Asphalt Maintenance and Repair

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

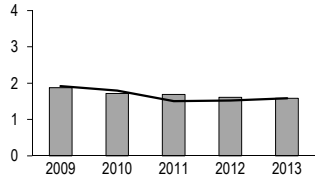
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



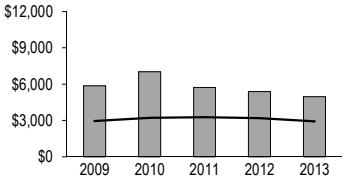
	2009	2010	2011	2012	2013
Charlotte	$41.95	$49.95	$40.12	$37.45	$34.07
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	1.87	1.71	1.69	1.61	1.58
Average	1.92	1.80	1.50	1.52	1.58

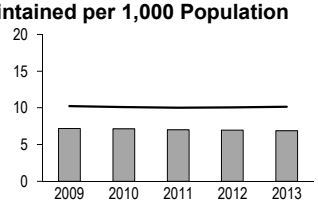
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Charlotte	$5,848	$7,007	$5,718	$5,369	$4,957
Average	$2,941	$3,208	$3,263	$3,184	$2,916

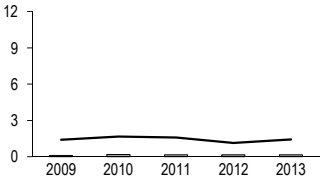
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



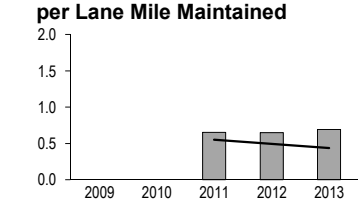
	2009	2010	2011	2012	2013
Charlotte	7.2	7.1	7.0	7.0	6.9
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Charlotte	0.11	0.17	0.15	0.15	0.16
Average	1.41	1.67	1.59	1.15	1.43

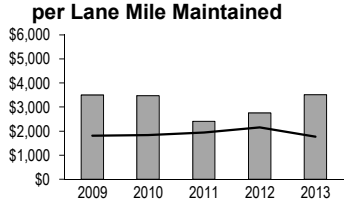
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Charlotte			0.65	0.65	0.69
Average			0.55	0.50	0.44

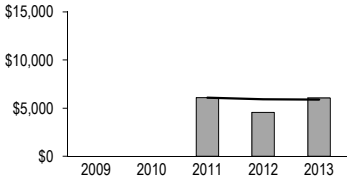
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



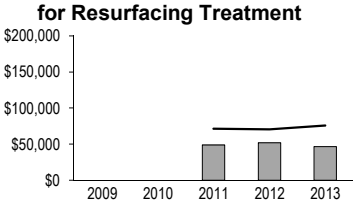
	2009	2010	2011	2012	2013
Charlotte	$3,492	$3,477	$2,412	$2,757	$3,517
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



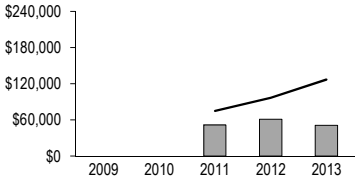
	2009	2010	2011	2012	2013
Charlotte			$6,078	$4,557	$6,042
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



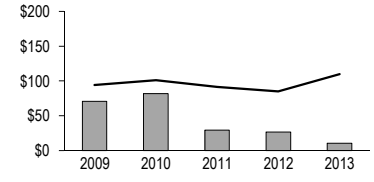
	2009	2010	2011	2012	2013
Charlotte			$48,995	$52,045	$46,571
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Charlotte			$51,720	$61,060	$50,852
Average			$74,579	$96,484	$127,06

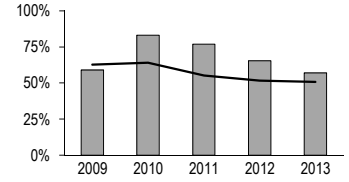
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Charlotte	$71	$82	$29	$26	$11
Average	$94	$101	$91	$85	$110

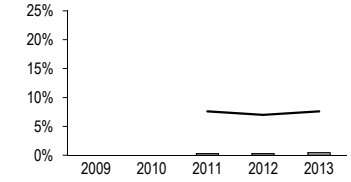
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



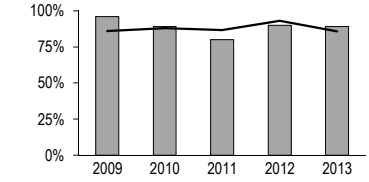
	2009	2010	2011	2012	2013
Charlotte	59%	83%	77%	65%	57%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Charlotte			0.3%	0.3%	0.5%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Charlotte	96%	89%	80%	90%	89%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Concord was responsible for maintaining approximately 673 lane miles during FY 2012–13. No lane miles were treated during the fiscal year.

The city reported that 55 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2013 using a city system based on North Carolina Department of Transportation ratings.

The number of potholes reported for FY 2011–12 was twenty-eight, including those reported by citizens and the city. The percentage of potholes repaired within twenty-four hours was 95 percent. Concord also reported 291 utility cuts that were repaired and fifty-five maintenance patches for work other than potholes or utility cuts.

Conditions Affecting Service, Performance, and Costs
The costs associated with asphalt maintenance and resurfacing are influenced by competition among providers due to the location of three asphalt plants within the city limits.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	8.75
FTE Positions—Other	2.80
Lane Miles Maintained	673.1
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	0.0
TOTAL	0.0
Total Costs for All Treatment Types	$0
Potholes Repaired	28
Number of Utility Cuts	291
Number of Maintenance Patches (exclusive of potholes and utility cuts)	55
Registered Vehicles	64,250
Registered Vehicles/Square Mile	1,066
Average Cost per Ton of Hot Asphalt during Year	$58.00

Full Cost Profile

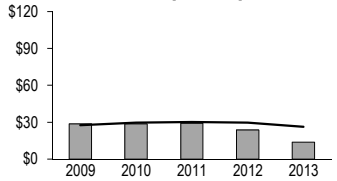
Cost Breakdown by Percentage	
Personal Services	56.4%
Operating Costs	30.2%
Capital Costs	13.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$636,919
Operating Costs	$340,723
Capital Costs	$151,317
TOTAL	$1,128,959

Concord — Asphalt Maintenance and Repair

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

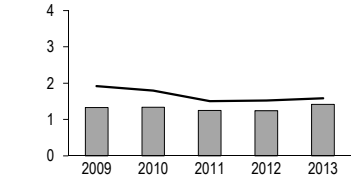
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



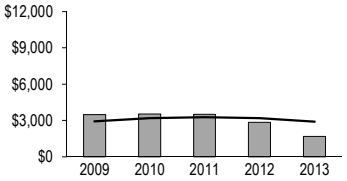
	2009	2010	2011	2012	2013
Concord	$28.74	$28.63	$29.26	$23.73	$13.86
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	1.33	1.34	1.25	1.24	1.42
Average	1.92	1.80	1.50	1.52	1.58

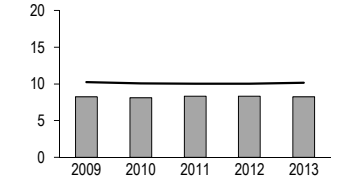
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Concord	$3,478	$3,529	$3,511	$2,846	$1,677
Average	$2,941	$3,208	$3,263	$3,184	$2,916

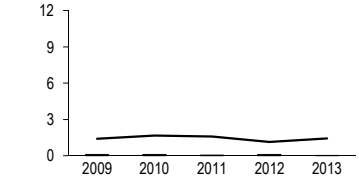
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



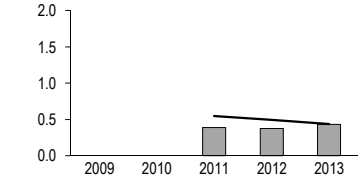
	2009	2010	2011	2012	2013
Concord	8.3	8.1	8.3	8.3	8.3
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Concord	0.12	0.11	0.06	0.11	0.04
Average	1.41	1.67	1.59	1.15	1.43

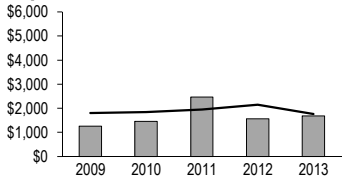
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Concord			0.39	0.38	0.43
Average			0.55	0.50	0.44

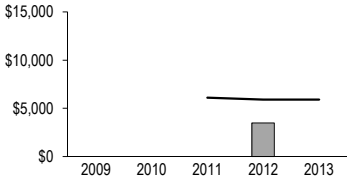
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



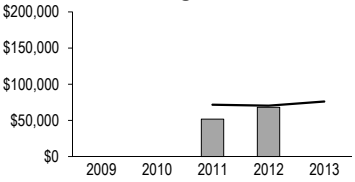
	2009	2010	2011	2012	2013
Concord	$1,259	$1,453	$2,462	$1,562	$1,677
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



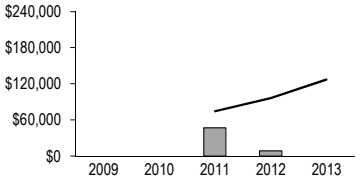
	2009	2010	2011	2012	2013
Concord				$3,469	
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



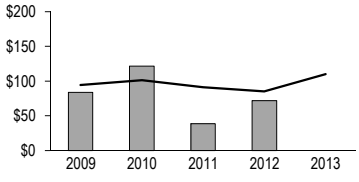
	2009	2010	2011	2012	2013
Concord			$51,857	$67,919	
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Concord			$46,637	$8,569	
Average			$74,579	$96,484	$127,06

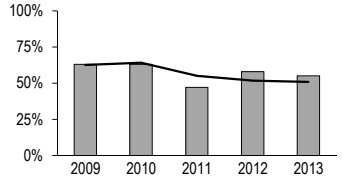
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Concord	$84	$122	$39	$72	
Average	$94	$101	$91	$85	$110

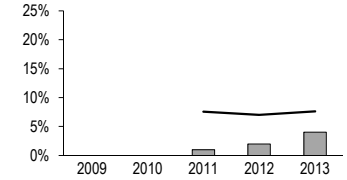
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



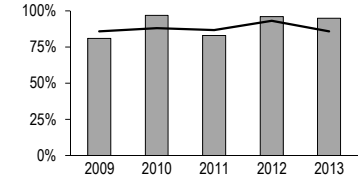
	2009	2010	2011	2012	2013
Concord	63%	63%	47%	58%	55%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Concord			1.0%	2.0%	4.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Concord	81%	97%	83%	96%	95%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Durham was responsible for maintaining approximately 1,888 lane miles during FY 2012–13, including 384.9 lane miles of state roads. A total of 97.5 lane miles were treated during the year, equating to about 5.2 of total lane miles.

The city obtained authority through a bond authorization for a significant increase in street repaving. This project will spend these additional funds over several years. The city resurfaced 10.5 miles using city crews. Additionally, 87 lane miles were rehabilitated, including milling followed by resurfacing. This rehabilitation work was done by contract crews. The average resurfacing depth in the city was 1.5 inches.

The number of potholes reported for FY 2012–13 was 1,729 including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was 28 percent.

Conditions Affecting Service, Performance, and Costs
Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	39.00
FTE Positions—Other	5.00
Lane Miles Maintained	1,888.1
Lane Miles Treated	
Preservation	10.5
Resurfacing	0.0
Rehabilitation	87.0
TOTAL	97.5
Total Costs for All Treatment Types	$5,532,526
Potholes Repaired	1,729
Number of Utility Cuts	395
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	163,951
Registered Vehicles/Square Mile	1,508
Average Cost per Ton of Hot Asphalt during Year	$67.33

Full Cost Profile

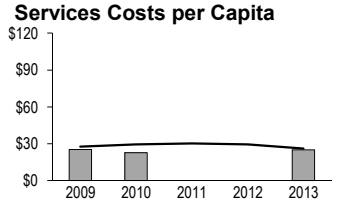
Cost Breakdown by Percentage	
Personal Services	37.4%
Operating Costs	43.6%
Capital Costs	19.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,214,761
Operating Costs	$2,579,269
Capital Costs	$1,124,517
TOTAL	$5,918,547

Durham — Asphalt Maintenance and Repair

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

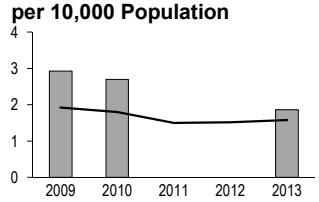
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



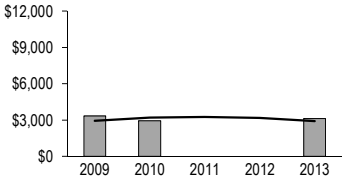
	2009	2010	2011	2012	2013
Durham	$25.28	$22.79			$25.02
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	2.93	2.70			1.86
Average	1.92	1.80	1.50	1.52	1.58

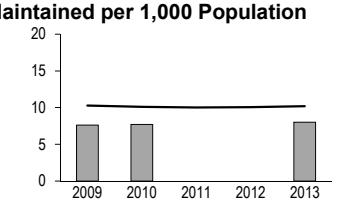
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Durham	$3,327	$2,951			$3,135
Average	$2,941	$3,208	$3,263	$3,184	$2,916

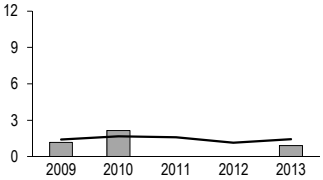
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



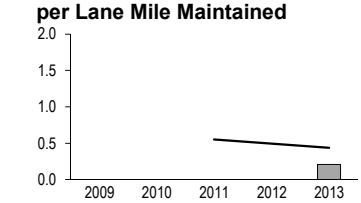
	2009	2010	2011	2012	2013
Durham	7.6	7.7			8.0
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Durham	1.17	2.14			0.92
Average	1.41	1.67	1.59	1.15	1.43

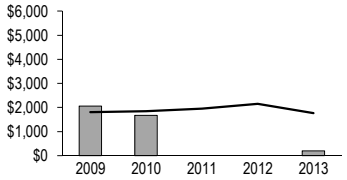
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Durham					0.21
Average			0.55	0.50	0.44

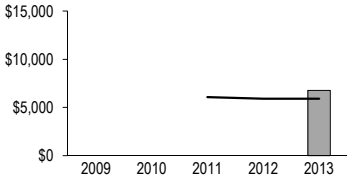
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



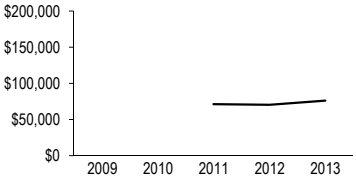
	2009	2010	2011	2012	2013
Durham	$2,055	$1,672			$204
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



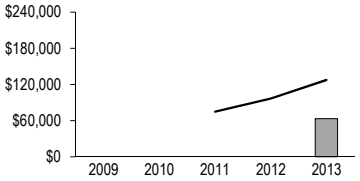
	2009	2010	2011	2012	2013
Durham					$6,781
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



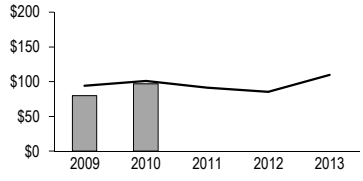
	2009	2010	2011	2012	2013
Durham					
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Durham					$62,791
Average			$74,579	$96,484	$127,06

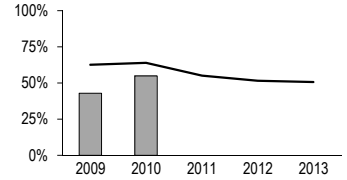
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Durham	$80	$97			
Average	$94	$101	$91	$85	$110

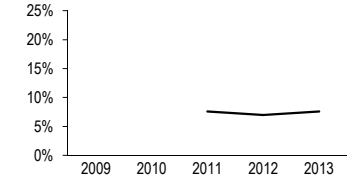
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



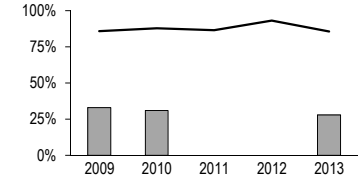
	2009	2010	2011	2012	2013
Durham	43%	55%			
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Durham					
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Durham	33%	31%			28%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Greensboro was responsible for maintaining 3,630 lane miles during FY 2012–13. This includes 925 lane miles of state roads. Greensboro treated a total of 41.1 lane miles during the year, equating to about 1.1 percent of total lane miles.

Of the treatment work done on Greensboro's streets, 18.1 of the lane miles had preservation work such as crack sealing or thin overlays performed. All of this preservation work was done by city crews. Resurfacing work was done on 23 lane miles by contract crews. This resurfacing work required a total of 12,700 tons of asphalt and used an average resurfacing depth of 1.25 inches.

The city reported that 34 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2012 by a consultant using the Institute for Transportation Research and Education (ITRE) system.

The number of potholes reported for FY 2012–13 was 2,231. The percentage of potholes repaired within twenty-four hours was 74 percent. A total of 452 utility cuts were also repaired, with city crews repairing water and sewer cuts but private contractors repairing others after getting permits from the city. A further ninety-seven maintenance patches were completed beyond potholes and utility cuts.

Conditions Affecting Service, Performance, and Costs

Changes in tracking software have improved the accuracy of potholes reported and asphalt used.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	45.00
FTE Positions—Other	6.00
Lane Miles Maintained	3,630.0
Lane Miles Treated	
Preservation	18.1
Resurfacing	23.0
Rehabilitation	0.0
TOTAL	41.1
Total Costs for All Treatment Types	$2,172,300
Potholes Repaired	2,231
Number of Utility Cuts	452
Number of Maintenance Patches (exclusive of potholes and utility cuts)	97
Registered Vehicles	199,811
Registered Vehicles/Square Mile	NA
Average Cost per Ton of Hot Asphalt during Year	$67.00

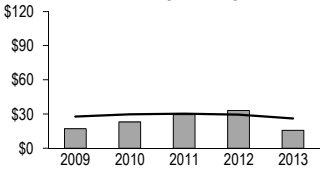
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	37.5%
Operating Costs	62.5%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,619,631
Operating Costs	$2,701,604
Capital Costs	$0
TOTAL	$4,321,235

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

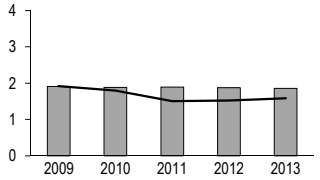
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



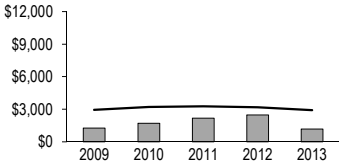
	2009	2010	2011	2012	2013
Greensboro	$17.07	$22.90	$29.43	$33.09	$15.71
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.91	1.88	1.89	1.87	1.85
Average	1.92	1.80	1.50	1.52	1.58

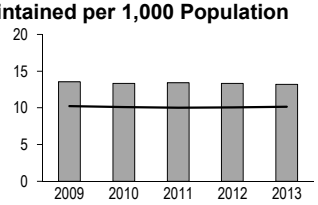
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Greensboro	$1,259	$1,719	$2,193	$2,482	$1,189
Average	$2,941	$3,208	$3,263	$3,184	$2,916

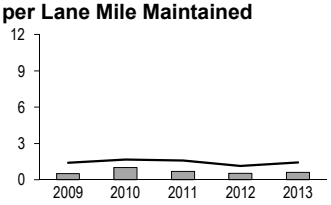
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



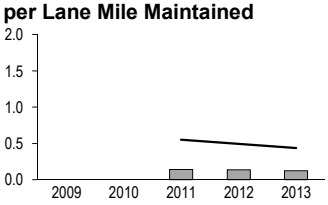
	2009	2010	2011	2012	2013
Greensboro	13.6	13.3	13.4	13.3	13.2
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Greensboro	0.50	1.02	0.69	0.53	0.61
Average	1.41	1.67	1.59	1.15	1.43

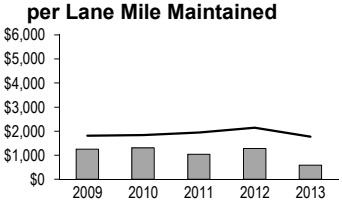
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Greensboro			0.14	0.14	0.12
Average			0.55	0.50	0.44

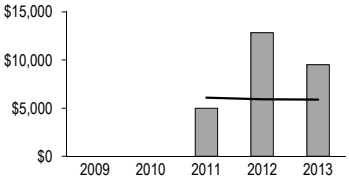
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



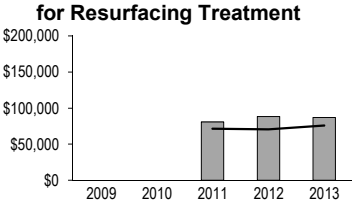
	2009	2010	2011	2012	2013
Greensboro	$1,259	$1,305	$1,044	$1,280	$592
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



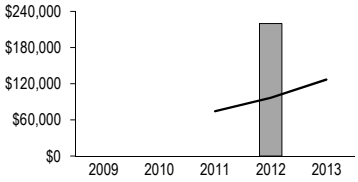
	2009	2010	2011	2012	2013
Greensboro			$5,000	$12,843	$9,519
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



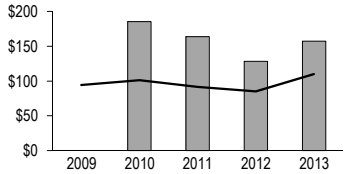
	2009	2010	2011	2012	2013
Greensboro			$80,579	$88,161	$86,957
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Greensboro				$220,000	
Average			$74,579	$96,484	$127,061

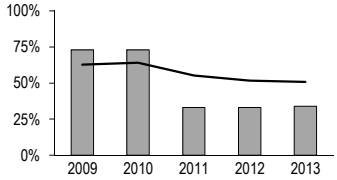
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Greensboro		$185	$164	$128	$157
Average	$94	$101	$91	$85	$110

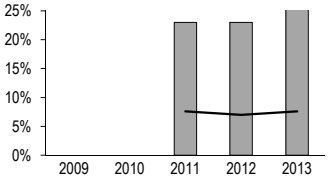
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



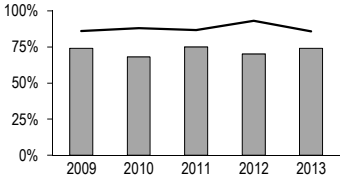
	2009	2010	2011	2012	2013
Greensboro	73%	73%	33%	33%	34%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Greensboro			23.0%	23.0%	27.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Greensboro	74%	68%	75%	70%	74%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Greenville was responsible for maintaining approximately 611 lane miles during FY 2012–13, all city streets. During the year, Greenville reported that 0.7 lane miles were given some form of treatment, equating to 0.1 percent of total lane miles.

City crews treated 0.7 lane miles with preservation techniques such as crack sealing and thin-layer overlays.

The number of potholes reported for FY 2012–13 was 481, including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was reported as 100 percent. The streets division also repaired 237 utility cuts during the year. City crews also made fifty maintenance patches beyond potholes and utility cuts, using a total of 1,339 tons of asphalt.

Greenville reported that 62 percent of lane miles were rated 85 or better on its most recent pavement condition rating, conducted in 2007 by US Infrastructure of Carolina, Inc.

Conditions Affecting Service, Performance, and Costs
Greenville joined the project in 2009, with the first year of reporting being for FY 2008–09.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than due to actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	9.00
FTE Positions—Other	1.00
Lane Miles Maintained	537.3
Lane Miles Treated	
Preservation	0.7
Resurfacing	0.0
Rehabilitation	0.0
TOTAL	0.7
Total Costs for All Treatment Types	$3,838
Potholes Repaired	481
Number of Utility Cuts	237
Number of Maintenance Patches (exclusive of potholes and utility cuts)	50
Registered Vehicles	53,008
Registered Vehicles/Square Mile	1,528
Average Cost per Ton of Hot Asphalt during Year	$82.00

Full Cost Profile

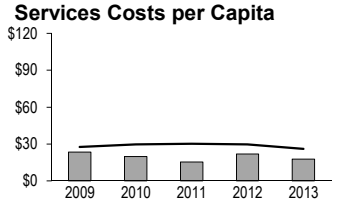
Cost Breakdown by Percentage	
Personal Services	31.8%
Operating Costs	40.1%
Capital Costs	28.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$482,669
Operating Costs	$609,637
Capital Costs	$427,111
TOTAL	$1,519,417

Greenville — Asphalt Maintenance and Repair

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

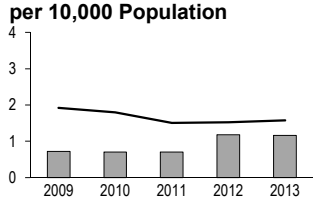
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



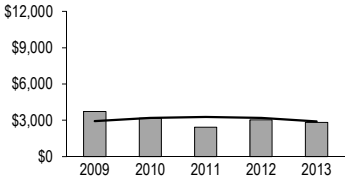
	2009	2010	2011	2012	2013
Greenville	$23.38	$19.85	$15.30	$21.85	$17.64
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	0.72	0.70	0.70	1.18	1.16
Average	1.92	1.80	1.50	1.52	1.58

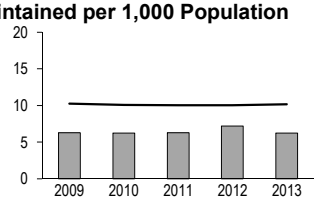
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Greenville	$3,731	$3,179	$2,431	$3,042	$2,828
Average	$2,941	$3,208	$3,263	$3,184	$2,916

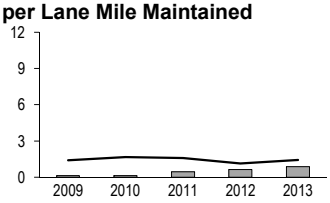
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



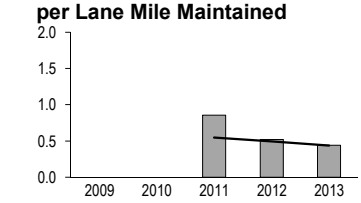
	2009	2010	2011	2012	2013
Greenville	6.3	6.2	6.3	7.2	6.2
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Greenville	0.14	0.14	0.47	0.64	0.90
Average	1.41	1.67	1.59	1.15	1.43

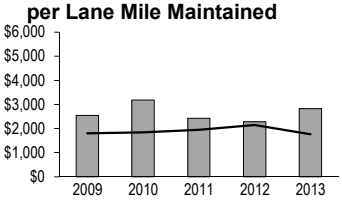
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Greenville			0.86	0.52	0.44
Average			0.55	0.50	0.44

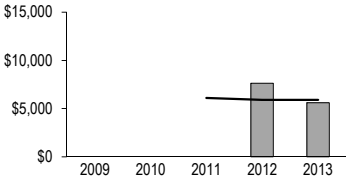
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



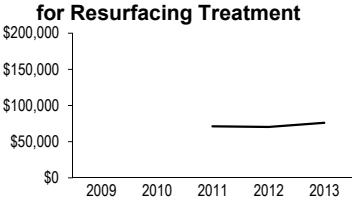
	2009	2010	2011	2012	2013
Greenville	$2,551	$3,179	$2,431	$2,276	$2,821
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



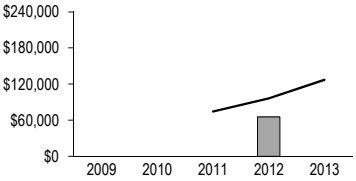
	2009	2010	2011	2012	2013
Greenville				$7,627	$5,597
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



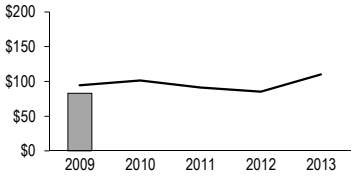
	2009	2010	2011	2012	2013
Greenville					
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Greenville				$65,654	
Average			$74,579	$96,484	$127,061

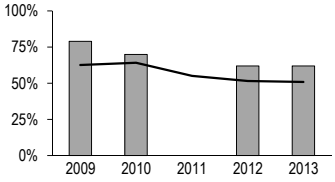
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Greenville	$83				
Average	$94	$101	$91	$85	$110

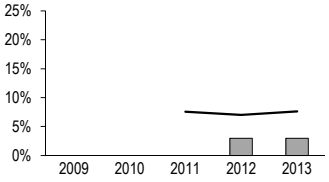
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



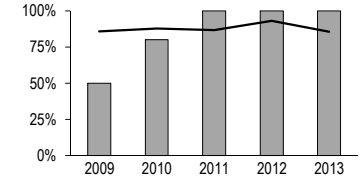
	2009	2010	2011	2012	2013
Greenville	79%	70%		62%	62%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Greenville				3.0%	3.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Greenville	50%	80%	100%	100%	100%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Hickory was responsible for maintaining approximately 719 lane miles during FY 2012–13, including 238.8 lane miles of state roads. The city treated a total of 9.1 lane miles with resurfacing, equating to 1.3 percent of total lane miles.

The city resurfaced 9.1 lane miles using contractors. A total of 5,263 tons of asphalt was used by the contractors. The average resurfacing depth used by the city was 1.5 inches.

The city reported that 39 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2007. The city used the Institute for Transportation Research and Education (ITRE) to conduct its rating system.

The number of potholes reported for FY 2012–13 was 365, including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was 95 percent.

Conditions Affecting Service, Performance, and Costs
Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

During FY 2011–2012, there were no snow events but a rainy winter led to an above average number of potholes and a smaller amount of crack sealing.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

FTE Positions—Crews	6.00
FTE Positions—Other	1.00
Lane Miles Maintained	719.2
Lane Miles Treated	
Preservation	0.0
Resurfacing	9.1
Rehabilitation	0.0
TOTAL	9.1
Total Costs for All Treatment Types	$400,000
Potholes Repaired	365
Number of Utility Cuts	NA
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	30,709
Registered Vehicles/Square Mile	1,033
Average Cost per Ton of Hot Asphalt during Year	$76.00

Full Cost Profile

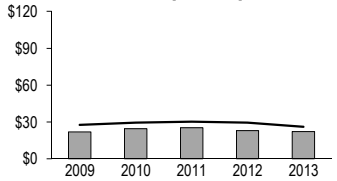
Cost Breakdown by Percentage	
Personal Services	32.8%
Operating Costs	63.9%
Capital Costs	3.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$291,340
Operating Costs	$567,171
Capital Costs	$28,891
TOTAL	$887,402

Hickory — Asphalt Maintenance and Repair

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

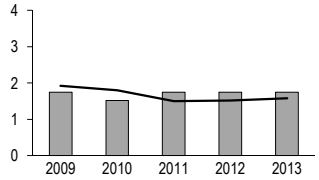
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



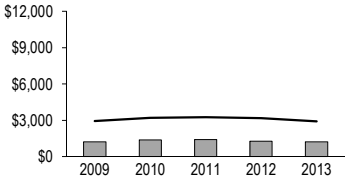
	2009	2010	2011	2012	2013
Hickory	$21.84	$24.58	$25.44	$22.94	$22.16
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	1.75	1.52	1.75	1.75	1.75
Average	1.92	1.80	1.50	1.52	1.58

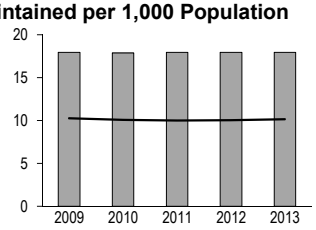
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Hickory	$1,217	$1,375	$1,418	$1,279	$1,234
Average	$2,941	$3,208	$3,263	$3,184	$2,916

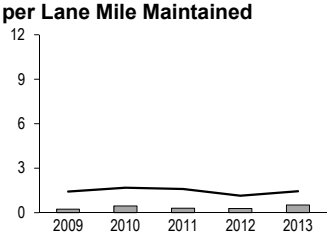
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



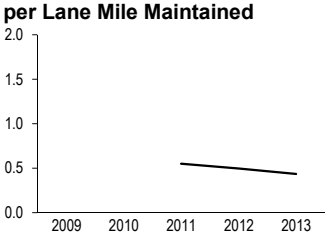
	2009	2010	2011	2012	2013
Hickory	17.9	17.9	17.9	17.9	18.0
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Hickory	0.23	0.44	0.29	0.27	0.51
Average	1.41	1.67	1.59	1.15	1.43

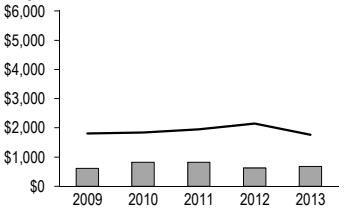
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Hickory					
Average			0.55	0.50	0.44

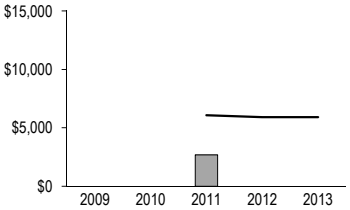
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



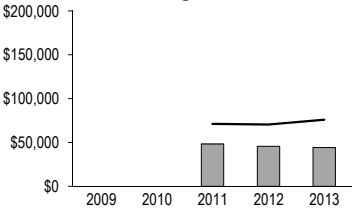
	2009	2010	2011	2012	2013
Hickory	$610	$819	$824	$629	$678
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



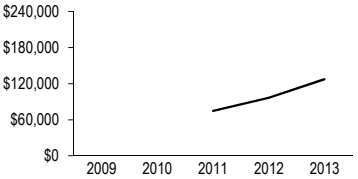
	2009	2010	2011	2012	2013
Hickory			$2,685		
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



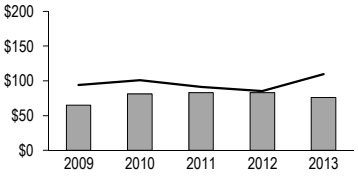
	2009	2010	2011	2012	2013
Hickory			$48,193	$45,700	$44,101
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Hickory					
Average			$74,579	$96,484	$127,06

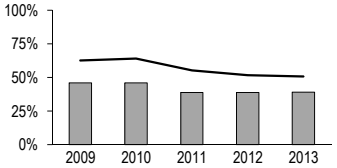
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Hickory	$65	$81	$83	$83	$76
Average	$94	$101	$91	$85	$110

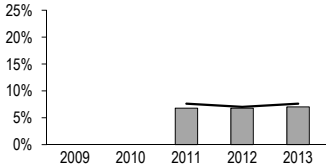
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



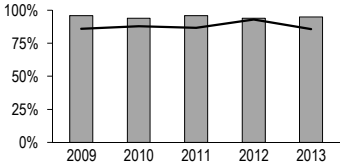
	2009	2010	2011	2012	2013
Hickory	46%	46%	39%	39%	39%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Hickory			6.8%	6.8%	7.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Hickory	96%	94%	96%	94%	95%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of High Point was responsible for maintaining 1,479 lane miles during FY 2012–13, which includes 340 lane miles of state roads. The city treated 50.4 lane miles by various methods, equating to 3.4 percent of total lane miles.

The city used preservation techniques of 37.4 lane miles using techniques such as crack sealing and thin overlay treatments. This work was done by city crews. A total of 10.9 lane miles were resurfaced by a combination of city and contract crews. Additionally, 2.1 lane miles were given rehabilitation by city crews and contractors ,which includes resurfacing preceded by milling work. A total of 6,015 tons of asphalt was used for resurfacing projects. The average resurfacing depth was 1.5 inches by city crews and 2.0 inches by contractors.

The city reported that 44 percent of its street segments rated 85 or above on its most recent pavement condition rating, conducted in 2011. The rating was done by a consultant using the Institute for Transportation Research and Education (ITRE) rating system.

The number of potholes reported for FY 2012–13 was 976, including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was 94 percent.

A total of 264 utility cuts were made in the streets during the year. The Streets Division places asphalt in water-sewer utility cuts after the utility forces backfill and compacts. Material, equipment, and personnel costs are tracked for this repair. Funds are transferred from the Water-Sewer Mains Division to recover applicable expenses associated with patching.

Conditions Affecting Service, Performance, and Costs

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	14.00
FTE Positions—Other	1.25
Lane Miles Maintained	1,479.0
Lane Miles Treated	
Preservation	37.4
Resurfacing	10.9
Rehabilitation	2.1
TOTAL	50.4
Total Costs for All Treatment Types	$1,401,581
Potholes Repaired	976
Number of Utility Cuts	264
Number of Maintenance Patches (exclusive of potholes and utility cuts)	38
Registered Vehicles	60,556
Registered Vehicles/Square Mile	1,125
Average Cost per Ton of Hot Asphalt during Year	$68.00

Full Cost Profile

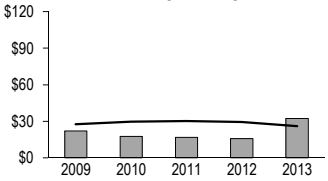
Cost Breakdown by Percentage	
Personal Services	21.5%
Operating Costs	72.4%
Capital Costs	6.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$737,581
Operating Costs	$2,488,624
Capital Costs	$208,803
TOTAL	$3,435,008

High Point — Asphalt Maintenance and Repair

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

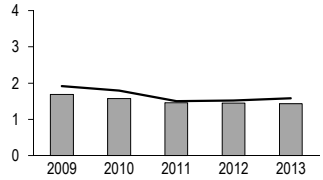
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



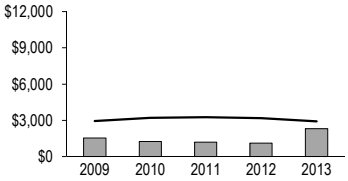
	2009	2010	2011	2012	2013
High Point	$22.19	$17.79	$16.80	$15.75	$32.28
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	1.69	1.57	1.46	1.45	1.43
Average	1.92	1.80	1.50	1.52	1.58

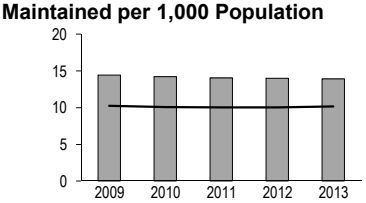
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
High Point	$1,537	$1,253	$1,197	$1,125	$2,323
Average	$2,941	$3,208	$3,263	$3,184	$2,916

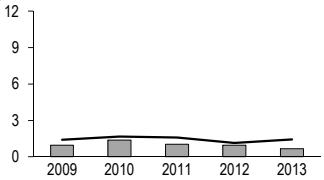
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



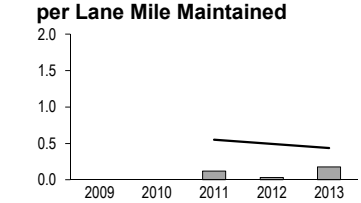
	2009	2010	2011	2012	2013
High Point	14.4	14.2	14.0	14.0	13.9
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
High Point	0.95	1.38	1.04	0.96	0.66
Average	1.41	1.67	1.59	1.15	1.43

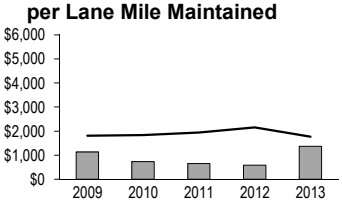
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
High Point			0.12	0.03	0.18
Average			0.55	0.50	0.44

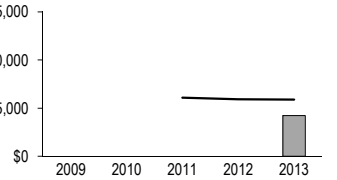
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



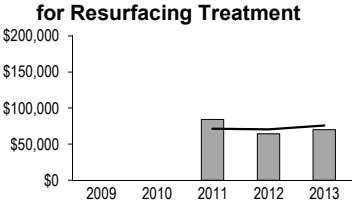
	2009	2010	2011	2012	2013
High Point	$1,140	$729	$650	$589	$1,375
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



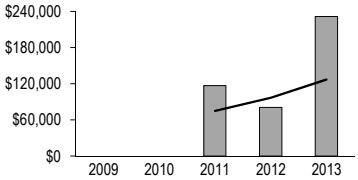
	2009	2010	2011	2012	2013
High Point					$4,243
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



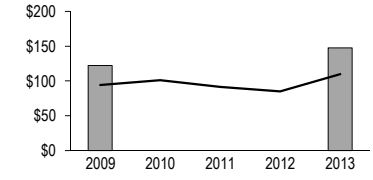
	2009	2010	2011	2012	2013
High Point			$84,089	$64,368	$70,198
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
High Point			$116,584	$80,809	$231,677
Average			$74,579	$96,484	$127,061

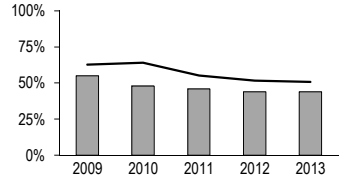
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
High Point	$122				$148
Average	$94	$101	$91	$85	$110

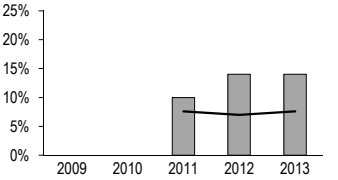
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



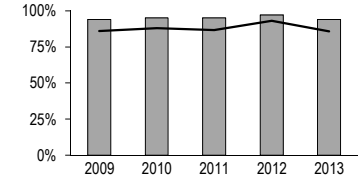
	2009	2010	2011	2012	2013
High Point	55%	48%	46%	44%	44%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
High Point			10.0%	14.0%	14.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
High Point	94%	95%	95%	97%	94%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Salisbury was responsible for maintaining approximately 342 lane miles during FY 2012–13. The city treated a total of 4.0 lane miles, or 1.2 percent of total lane miles.

The city lane miles that were treated included both resurfacing and rehabilitation which includes resurfacing following milling. This work was done by contractors. The contractors used a total of 2,556 tons of asphalt, and the average resurfacing depth used by the contractor was 1.5 inches.

The city reported that 67 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2010. The city used a consultant for the rating, who relied on the Institute for Transportation Research and Education (ITRE) rating system.

The number of potholes reported for FY 2012–13 was 570. The percentage of potholes repaired within twenty-four hours was 100 percent. A total of 181 utility cuts were also made, with the city repairing all of these.

Conditions Affecting Service, Performance, and Costs
Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	5.00
FTE Positions—Other	0.25
Lane Miles Maintained	342.4
Lane Miles Treated	
Preservation	0.0
Resurfacing	1.8
Rehabilitation	2.2
TOTAL	4.0
Total Costs for All Treatment Types	$273,620
Potholes Repaired	570
Number of Utility Cuts	181
Number of Maintenance Patches (exclusive of potholes and utility cuts)	297
Registered Vehicles	21,740
Registered Vehicles/Square Mile	980
Average Cost per Ton of Hot Asphalt during Year	$68.00

Full Cost Profile

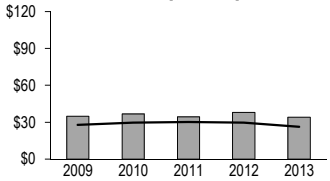
Cost Breakdown by Percentage	
Personal Services	10.4%
Operating Costs	58.5%
Capital Costs	31.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$118,881
Operating Costs	$667,617
Capital Costs	$355,633
TOTAL	$1,142,131

Salisbury — Asphalt Maintenance and Repair

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

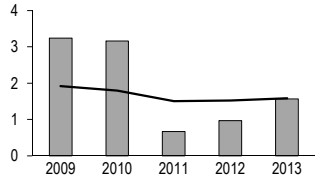
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



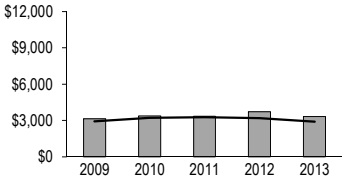
	2009	2010	2011	2012	2013
Salisbury	$34.93	$36.72	$34.31	$37.92	$34.15
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	3.24	3.16	0.67	0.96	1.57
Average	1.92	1.80	1.50	1.52	1.58

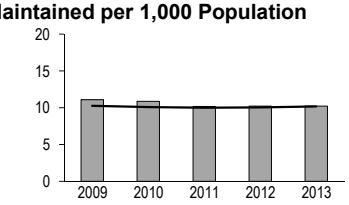
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Salisbury	$3,154	$3,378	$3,365	$3,717	$3,336
Average	$2,941	$3,208	$3,263	$3,184	$2,916

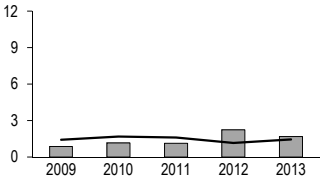
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



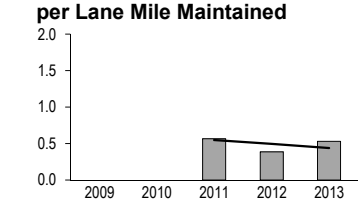
	2009	2010	2011	2012	2013
Salisbury	11.1	10.9	10.2	10.2	10.2
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Salisbury	0.87	1.14	1.12	2.23	1.66
Average	1.41	1.67	1.59	1.15	1.43

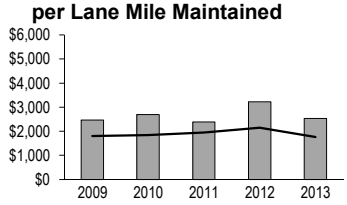
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Salisbury			0.57	0.39	0.53
Average			0.55	0.50	0.44

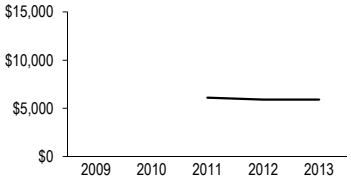
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



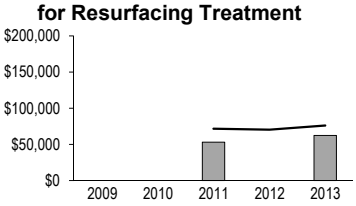
	2009	2010	2011	2012	2013
Salisbury	$2,466	$2,686	$2,389	$3,227	$2,537
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



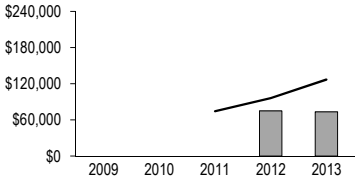
	2009	2010	2011	2012	2013
Salisbury					
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



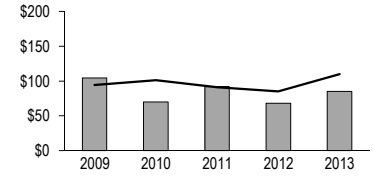
	2009	2010	2011	2012	2013
Salisbury			$52,898		$62,180
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Salisbury				$74,904	$73,246
Average			$74,579	$96,484	$127,06

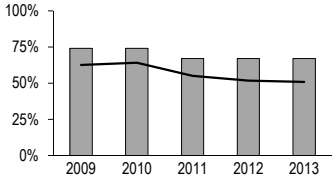
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Salisbury	$105	$70	$92	$68	$85
Average	$94	$101	$91	$85	$110

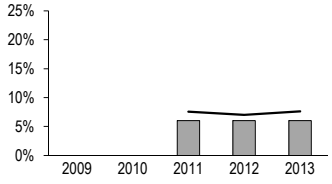
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



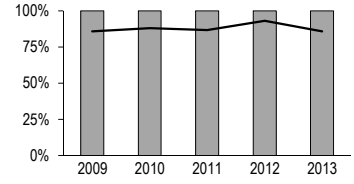
	2009	2010	2011	2012	2013
Salisbury	74%	74%	67%	67%	67%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Salisbury			6.0%	6.0%	6.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Salisbury	100%	100%	100%	100%	100%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Wilmington was responsible for maintaining approximately 797 lane miles during FY 2012–13. The city treated 8.2 lane miles during the year, or 1 percent of total lane miles.

A total of 6.2 lane miles were resurfaced with most of this work done by contractors but some by city crews. A further total of 2 lane miles was rehabilitated by city crews, which involves milling followed by resurfacing. A total of 7,138 tons of asphalt was used by city and contract crews for the work.

The city reported that 55 percent of its lane miles rated 85 or better on its most recent pavement condition rating, conducted in 2011. The street rating was conducted by a consultant using American Society for Testing and Materials (ASTM) standards.

The number of potholes reported for FY 2012–13 was 5,462. The percentage of potholes repaired within twenty-four hours was 99 percent. City crews repaired a total of 310 utility cuts. Maintenance patches other than potholes and utility cuts were made using 952 tons of asphalt.

Conditions Affecting Service, Performance, and Costs

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Topography	Flat, coastal plain
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	12.00
FTE Positions—Other	2.00
Lane Miles Maintained	796.8
Lane Miles Treated	
Preservation	0.0
Resurfacing	6.2
Rehabilitation	2.0
TOTAL	8.2
Total Costs for All Treatment Types	$1,529,647
Potholes Repaired	5,462
Number of Utility Cuts	310
Number of Maintenance Patches (exclusive of potholes and utility cuts)	77
Registered Vehicles	123,205
Registered Vehicles/Square Mile	2,393
Average Cost per Ton of Hot Asphalt during Year	$82.70

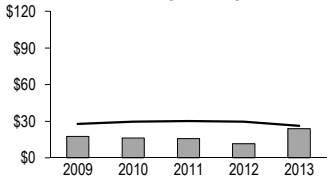
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	22.5%
Operating Costs	66.4%
Capital Costs	11.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$590,519
Operating Costs	$1,742,606
Capital Costs	$292,520
TOTAL	$2,625,645

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

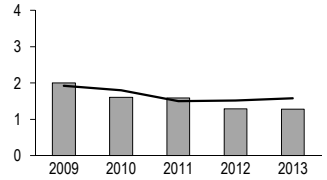
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



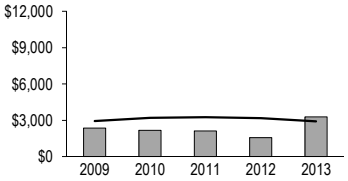
	2009	2010	2011	2012	2013
Wilmington	$17.59	$16.20	$15.80	$11.47	$23.94
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	2.00	1.61	1.59	1.29	1.28
Average	1.92	1.80	1.50	1.52	1.58

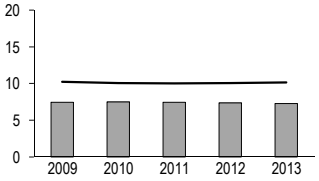
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Wilmington	$2,369	$2,165	$2,121	$1,559	$3,295
Average	$2,941	$3,208	$3,263	$3,184	$2,916

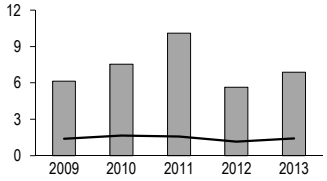
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



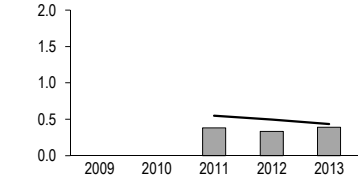
	2009	2010	2011	2012	2013
Wilmington	7.4	7.5	7.5	7.4	7.3
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Wilmington	6.16	7.53	10.09	5.64	6.88
Average	1.41	1.67	1.59	1.15	1.43

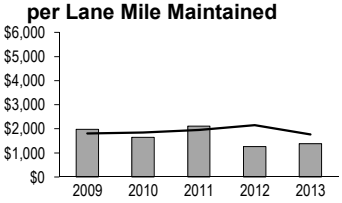
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Wilmington			0.38	0.33	0.39
Average			0.55	0.50	0.44

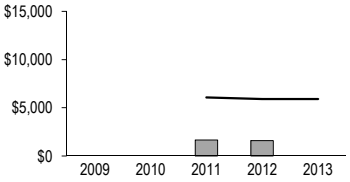
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



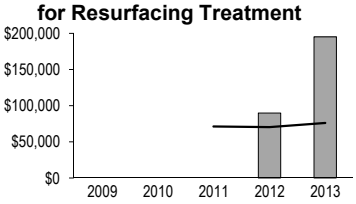
	2009	2010	2011	2012	2013
Wilmington	$1,977	$1,653	$2,114	$1,258	$1,375
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



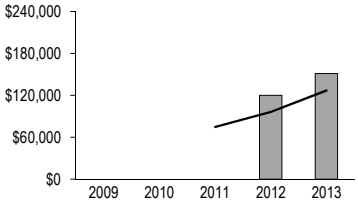
	2009	2010	2011	2012	2013
Wilmington			$1,648	$1,593	
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



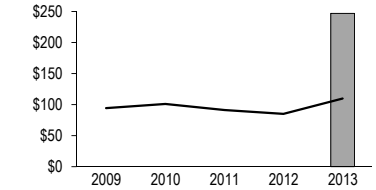
	2009	2010	2011	2012	2013
Wilmington				$89,878	$195,159
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Wilmington				$119,892	$151,108
Average			$74,579	$96,484	$127,061

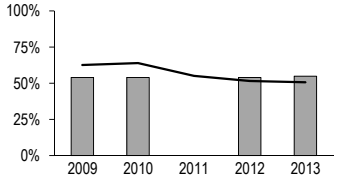
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Wilmington					$247
Average	$94	$101	$91	$85	$110

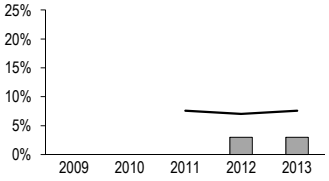
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



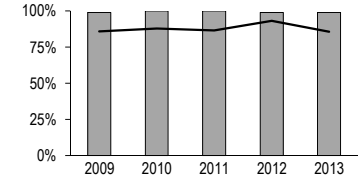
	2009	2010	2011	2012	2013
Wilmington	54%	54%		54%	55%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Wilmington				3.0%	3.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Wilmington	99%	100%	100%	99%	99%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Wilson was responsible for maintaining approximately 956 lane miles of city streets during FY 2012–13 including 267.33 miles of state roads. The city treated a total of 13.0 lane miles during the year, or 1.4 percent of the total lane miles maintained.

Wilson city crews treated 1.1 lane miles with preservation methods such as crack sealing or thin overlays. The city also resurfaced 11.9 lane miles with this work being done by contractors.

The city reported that 58 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2009. The city relied on a consultant for the rating, who used a customized rating based on the Institute for Transportation Research and Education (ITRE) system.

The number of potholes reported for FY 2012–13 was 886. The percentage of potholes repaired within twenty-four hours was 99.8 percent.

Conditions Affecting Service, Performance, and Costs

The cost of asphalt and maintenance materials is directly related to fluctuations in the price of petroleum prices.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment" "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

The winter during FY 2011–12 was milder than normal and generated few potholes. Additionally, crack sealing operations have helped reduce potholes.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	5.00
FTE Positions—Other	0.50
Lane Miles Maintained	956.2
Lane Miles Treated	
Preservation	1.1
Resurfacing	11.9
Rehabilitation	0.0
TOTAL	13.0
Total Costs for All Treatment Types	$603,105
Potholes Repaired	886
Number of Utility Cuts	759
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	NA
Registered Vehicles/Square Mile	NA
Average Cost per Ton of Hot Asphalt during Year	NA

Full Cost Profile

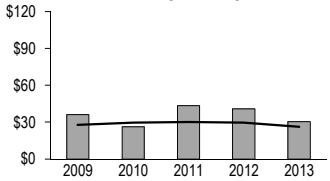
Cost Breakdown by Percentage	
Personal Services	20.8%
Operating Costs	74.8%
Capital Costs	4.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$310,819
Operating Costs	$1,118,345
Capital Costs	$66,531
TOTAL	$1,495,695

Wilson — Asphalt Maintenance and Repair

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

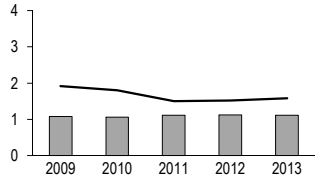
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



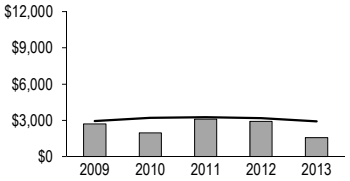
	2009	2010	2011	2012	2013
Wilson	$36.11	$26.06	$43.36	$40.78	$30.25
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	1.08	1.06	1.11	1.12	1.11
Average	1.92	1.80	1.50	1.52	1.58

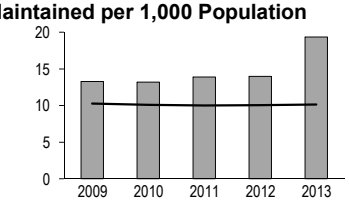
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Wilson	$2,721	$1,976	$3,116	$2,913	$1,564
Average	$2,941	$3,208	$3,263	$3,184	$2,916

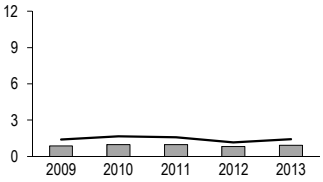
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



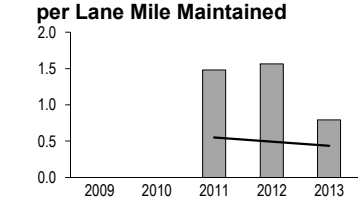
	2009	2010	2011	2012	2013
Wilson	13.3	13.2	13.9	14.0	19.3
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Wilson	0.88	0.96	0.98	0.82	0.93
Average	1.41	1.67	1.59	1.15	1.43

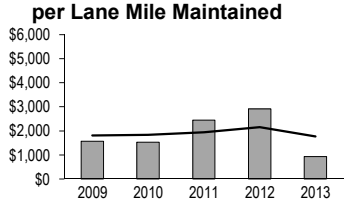
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Wilson			1.48	1.56	0.79
Average			0.55	0.50	0.44

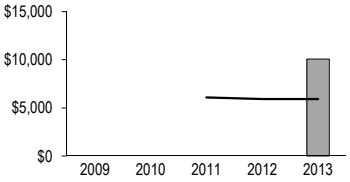
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



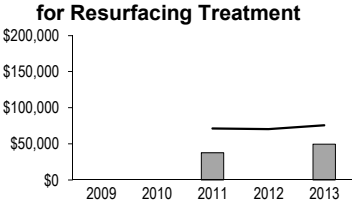
	2009	2010	2011	2012	2013
Wilson	$1,576	$1,529	$2,450	$2,913	$934
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



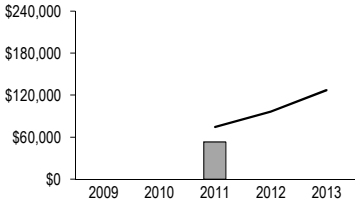
	2009	2010	2011	2012	2013
Wilson					$10,065
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



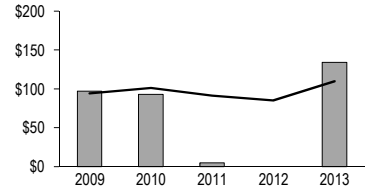
	2009	2010	2011	2012	2013
Wilson			$37,663		$49,809
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Wilson			$53,084		
Average			$74,579	$96,484	$127,06

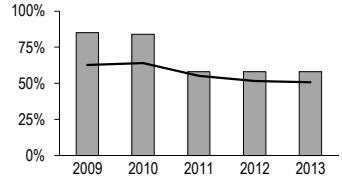
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Wilson	$97	$93	$5		$134
Average	$94	$101	$91	$85	$110

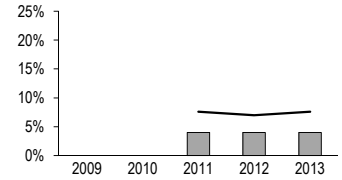
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



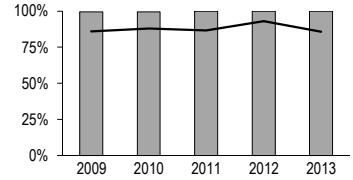
	2009	2010	2011	2012	2013
Wilson	85%	84%	58%	58%	58%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Wilson			4.0%	4.0%	4.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Wilson	100%	100%	100%	100%	100%
Average	86%	88%	87%	93%	86%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Winston-Salem was responsible for maintaining approximately 2,184 lane miles of city streets during FY 2012–13. The city treated 30.1 lane miles, or 1.4 percent of the total lane miles.

The city used a variety of treatment methods for repair of roads. A total of 14.8 lane miles were treated by contract crews with preservation methods such as crack sealing or thin overlays. A total of 0.1 lane miles had basic resurfacing done by city crews. Finally, 15.2 lane miles were rehabilitated by contract crews with milling followed by resurfacing. A total of 11,819 tons of asphalt was used by contracted and city crews for resurfacing.

The city reported that 50 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2013. The city used the Pavement Tracking System (PTS).

The city reported 1,491 potholes in FY 2012–13. The percentage of potholes repaired within twenty-four hours was estimated at 82 percent. City policy is to repair potholes within twenty-four hours, but the lower level is a result of weekends and sick or vacation time of repair crews.

Conditions Affecting Service, Performance, and Costs

The hard winter conditions led to an increase in potholes. Snow, ice, and rain combined with the cold weather created more stress on the street paving and led to more failures. There was also a backlog of work after the winter due to the fact that most of the available asphalt plants were not operating due to inclement weather and colder temperatures.

Beginning with the FY 2010–11 reporting year, new performance measures were added to this service area. These include "cost per lane mile for preservation treatment," "cost per lane mile for resurfacing treatment," "cost per lane mile for rehabilitation treatment," and "percent of lane miles rated below 45." In addition, the measure "cost of maintenance per lane mile maintained" has been altered to back out some treatment costs that were formerly counted as maintenance. This means that for some jurisdictions, the "cost of maintenance per lane mile maintained" has dropped in FY 2010–11 due to changes in the definition rather than actual drops in maintenance.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

FTE Positions—Crews	39.50
FTE Positions—Other	3.50
Lane Miles Maintained	2,183.5
Lane Miles Treated	
Preservation	14.8
Resurfacing	0.1
Rehabilitation	15.2
TOTAL	30.1
Total Costs for All Treatment Types	$914,486
Potholes Repaired	1,491
Number of Utility Cuts	515
Number of Maintenance Patches (exclusive of potholes and utility cuts)	148
Registered Vehicles	170,373
Registered Vehicles/Square Mile	1,286
Average Cost per Ton of Hot Asphalt during Year	$61.91

Full Cost Profile

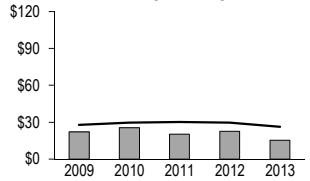
Cost Breakdown by Percentage	
Personal Services	32.3%
Operating Costs	60.2%
Capital Costs	7.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,153,079
Operating Costs	$2,149,246
Capital Costs	$268,639
TOTAL	$3,570,964

Winston-Salem — Asphalt Maintenance and Repair

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

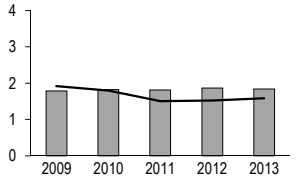
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



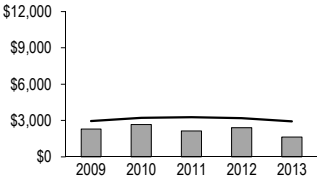
	2009	2010	2011	2012	2013
Winston-Salem	$22.05	$25.35	$20.14	$22.49	$15.31
Average	$27.72	$29.63	$30.17	$29.57	$26.17

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	1.79	1.82	1.81	1.87	1.84
Average	1.92	1.80	1.50	1.52	1.58

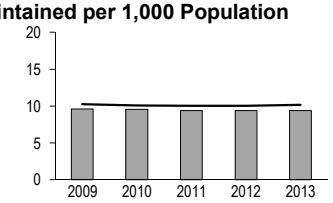
Service Costs per Lane Mile of Road Maintained



	2009	2010	2011	2012	2013
Winston-Salem	$2,295	$2,657	$2,143	$2,394	$1,635
Average	$2,941	$3,208	$3,263	$3,184	$2,916

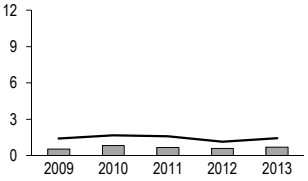
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



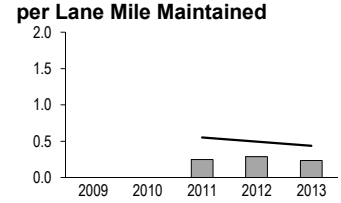
	2009	2010	2011	2012	2013
Winston-Salem	9.6	9.5	9.4	9.4	9.4
Average	10.3	10.1	10.0	10.1	10.2

Reported Potholes per Lane Mile Maintained



	2009	2010	2011	2012	2013
Winston-Salem	0.54	0.82	0.67	0.58	0.68
Average	1.41	1.67	1.59	1.15	1.43

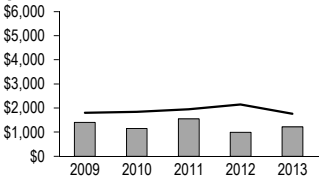
Repaired Utility Cuts per Lane Mile Maintained



	2009	2010	2011	2012	2013
Winston-Salem			0.25	0.29	0.24
Average			0.55	0.50	0.44

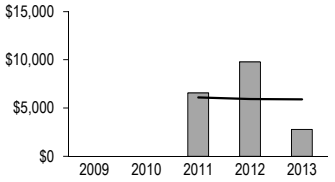
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



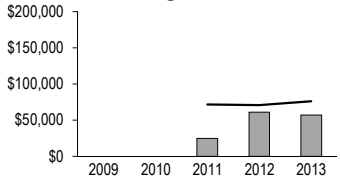
	2009	2010	2011	2012	2013
Winston-Salem	$1,403	$1,150	$1,546	$986	$1,217
Average	$1,807	$1,841	$1,949	$2,150	$1,766

Cost per Lane Mile for Preservation Treatment



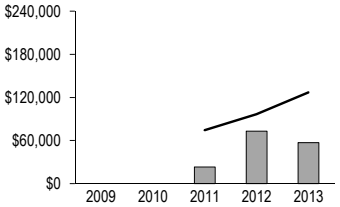
	2009	2010	2011	2012	2013
Winston-Salem			$6,566	$9,796	$2,759
Average			$6,085	$5,914	$5,904

Cost per Lane Mile for Resurfacing Treatment



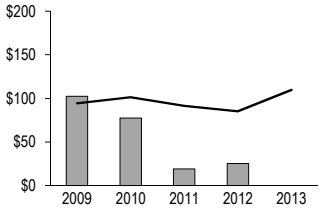
	2009	2010	2011	2012	2013
Winston-Salem			$24,554	$61,060	$57,111
Average			$71,376	$70,435	$76,025

Cost per Lane Mile for Rehabilitation Treatment



	2009	2010	2011	2012	2013
Winston-Salem			$23,140	$73,144	$57,111
Average			$74,579	$96,484	$127,061

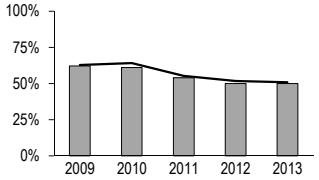
Cost per Ton for Contract Resurfacing



	2009	2010	2011	2012	2013
Winston-Salem	$103	$78	$19	$25	
Average	$94	$101	$91	$85	$110

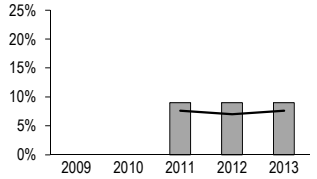
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



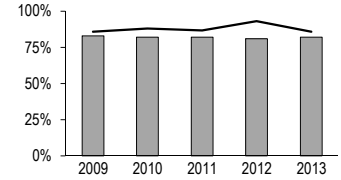
	2009	2010	2011	2012	2013
Winston-Salem	62%	61%	54%	50%	50%
Average	63%	64%	55%	52%	51%

Percent of Lane Miles Rated Below 45



	2009	2010	2011	2012	2013
Winston-Salem			9.0%	9.0%	9.0%
Average			7.6%	7.0%	7.6%

Percentage of Potholes Repaired within 24 hours



	2009	2010	2011	2012	2013
Winston-Salem	83%	82%	82%	81%	82%
Average	86%	88%	87%	93%	86%

UNC
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GOVERNMENT

Performance and Cost Data

FIRE SERVICES

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PERFORMANCE MEASURES FOR FIRE SERVICES

SERVICE DEFINITION

Fire Services refers to activities and programs relating to the prevention and suppression of fires, responses to calls for service, rescue service (if provided), fire inspections (if provided), responses to hazardous materials calls (if provided), and fire education services. The services provided by fire departments vary from city to city, but the common goal remains the same: to protect the lives and property of the community served.

NOTES ON PERFORMANCE MEASURES

1. Number of Actual Fires per 1,000 Population

The total number of actual fires includes all types of fires, including structural fires.

2. Fire Inspections Completed per 1,000 Population

Fire inspections include Level I, II, and III inspections.

3. Number of Fire Department Responses per 1,000 Population

Responses include those to fires, medical emergencies, false alarms, and other types of situations that result in mobilization of fire equipment and personnel.

4. Cost per Fire Department Response

The cost represents the total cost of fire services and is calculated using a full cost accounting model that captures direct, indirect, and capital costs. Response is as defined above.

5. Number of Inspections Completed per Fire Inspector FTE

One full-time equivalent (FTE) position equals 2,080 hours of work per year. Any combination of employees providing 2,080 hours of work per year is counted as one FTE.

6. Average Turnout and Travel Time for First Unit Dispatched under "Priority One" Situations

Fast response is a critical determinant in how successful fire responders will be. Response time is calculated by adding both the turnout time (the time the dispatch is received until the first unit is out the door) and the travel time (the time the first unit is out the door until the unit arrives on the scene).

7. Percentage of Full Responses within Eight Minutes

The speed of fire department responses can be judged both by the time for the first unit arriving and also by how long it takes a full complement of trucks and personnel to respond to an emergency. The percentage within eight minutes takes into account travel time.

8. Percentage of Fires Confined to Object or Room of Origin

Containment of fires to as small an area as possible limits total damages. The degree of containment depends on how quickly the fire department is called and also is an effectiveness measure that is reported to the state.

9. Percentage of Fires for Which Cause Is Determined

Investigation of the causes of fires can be an important part of prevention and suppression efforts. While the cause of all fires cannot always be determined, being able to identify causes is important if lessons are to be learned from the investigations.

10. Percentage of Fire Code Violations "Cleared" by Correction or Imposition of Penalty within Ninety Days

Fire code violations are violations of state and local laws and regulations as found through fire inspections. The violators are given time to correct the violation before a penalty is imposed. This is an effectiveness measure that provides an indication of timeliness of follow-up.

11. Percentage of Cases with Lost Pulse Where Pulse Is Recovered at Time of Transfer for Transport

Fire departments frequently are the first responders to medical calls, including cases where an individual has no pulse either at the time of arrival or during the response. This effectiveness measure reports the percentage of these cases where the patient has recovered a pulse by the time responsibility for care has been transferred to emergency responders who will transport the patient to a hospital. Many patients cannot be saved, and recovery of pulse does not guarantee survival at the hospital.

Fire Services

Summary of Key Dimensions of Service

City or Town	Population Served	Land Area Served (in Square Miles)	Value of Property in Service Area (in Billions)	Total Number of Fire Department Responses	Fire Code Violations Found	Number of Community Fire Stations	Number of Fire Services FTEs	ISO* Rating
Apex	92,789	62.3	$11.2	2,567	189	4	64	3—town 6—outlying
Asheville	91,665	60.0	$11.7	15,012	9,005	12	239	3
Burlington	51,195	25.2	$4.2	7,914	2,117	5	92	3
Cary	143,912	55.9	$21.3	7,383	7,374	8	227	3
Charlotte	779,659	309.2	$91.9	97,356	33,229	41	1,166	3
Concord	84,715	66.7	$10.7	9,077	4,802	9	191	2
Durham	236,566	108.7	$22.7	20,372	2,583	16	316	3
Greensboro	283,705	138.4	$25.2	33,027	11,831	24	547	1
Greenville	112,783	66.4	$7.8	16,737	1,663	6	159	3
Hickory	45,057	42.6	$4.9	6,084	3,717	6	136	3
High Point	115,665	67.5	$10.1	11,917	2,502	14	225	2
Salisbury	33,442	22.2	$2.8	4,553	3,653	4	74	2
Wilmington	109,689	51.5	$14.2	10,540	2,612	11	220	2
Wilson	49,440	28.8	$4.0	3,876	4,292	5	97	2
Winston-Salem	233,232	132.4	$21.3	27,546	9,364	19	344	3

NOTES

*ISO—Insurance Service Office

EXPLANATORY FACTORS

These are factors that the project found affected fire services performance and cost in one or more of the municipalities:

Population and area served
Value of property area protected in service area
Number of engine companies
Number of fire department responses
Fire code violations
ISO rating
Age of housing stock

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the Apex Fire Department is to protect life, property, and the environment from fire, medical emergencies, natural disasters, and other emergencies for those who live, work, and travel in and through the town and surrounding area. In addition to the town, the fire department serves an additional sixty-two square miles in surrounding fire districts.

The fire department uses a shift schedule with one twenty-four-hour shift on schedule and one off every three days, followed by a four-day break. On average, shift personnel work ten to eleven days per twenty-eight day cycle.

The area within the Town of Apex has an ISO rating of 3, while the surrounding fire districts served have an ISO rating of 6. The rating was done during 2013 and was an upgrade from the prior rating for both areas.

The Apex Fire Department conducted 1,325 fire maintenance, construction, and reinspections during FY 2012–13. The fire department handles all inspections within town limits and coordinates with the Wake County Fire Marshal for joint inspections in the extra-territorial jurisdiction for new construction, fire alarms, and sprinkler reviews and inspections. Apex has a fire marshal and one inspector.

All fire investigations in Apex are handled by the Wake County Fire Marshal. Apex assists in investigations but does not provide the investigative reports.

Conditions Affecting Service, Performance, and Costs

Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Service Population	92,789
Land Area (Square Miles)	62.30
Persons per Square Mile	1,489
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Positions—Firefighters	51.0
FTE Positions—Other	13.0
Fire Stations	4
First-Line Fire Apparatus	
Pumpers	3
Aerial Trucks	2
Quints	0
Squads	0
Rescue	1
Other	7
Fire Department Responses	2,567
Responses for Fires	91
Structural Fires Reported	25
Inspections Completed for Maintenance, Construction, and Reinspections	1,325
Fire Code Violations Reported	189
Estimated Fire Loss (millions)	$1.54
Amount of Property Protected in Service Area (millions)	$11,175
Number of Fire Education Programs or Events	100

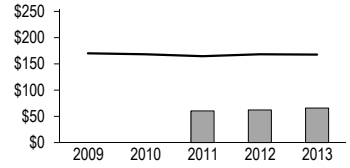
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	68.3%
Operating Costs	19.7%
Capital Costs	12.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,168,485
Operating Costs	$1,200,711
Capital Costs	$730,073
TOTAL	$6,099,269

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

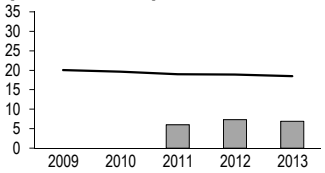
Resource Measures

Fire Services Costs per Capita



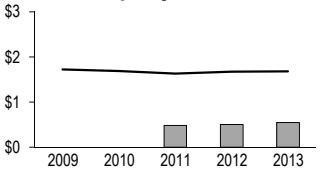
	2009	2010	2011	2012	2013
Apex			$61	$62	$66
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			6.0	7.3	6.9
Average	20.0	19.6	19.0	18.9	18.5

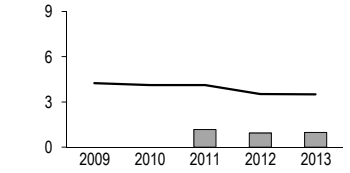
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Apex			$0.49	$0.50	$0.55
Average	$1.72	$1.69	$1.63	$1.67	$1.68

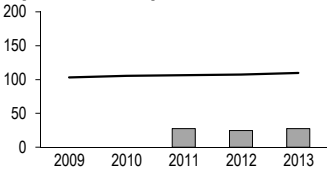
Workload Measures

Actual Fires per 1,000 Population



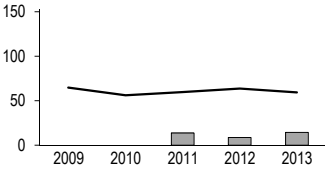
	2009	2010	2011	2012	2013
Apex			1.17	0.94	0.98
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Apex			28	25	28
Average	103	105	107	108	110

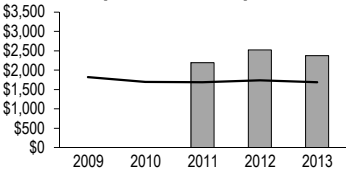
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Apex			14	9	14
Average	65	56	59	64	59

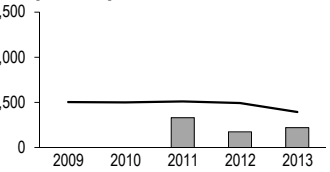
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Apex			$2,194	$2,527	$2,376
Average	$1,818	$1,700	$1,691	$1,737	$1,688

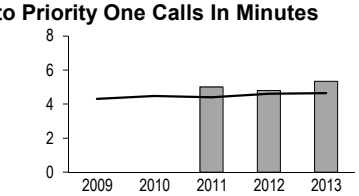
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Apex			994	516	663
Average	1,512	1,505	1,531	1,481	1,183

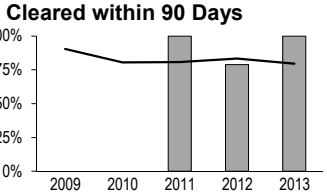
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



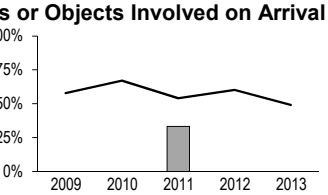
	2009	2010	2011	2012	2013
Apex			5.0	4.8	5.3
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



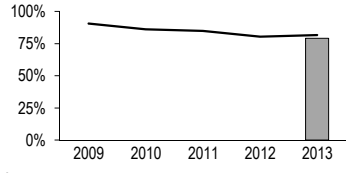
	2009	2010	2011	2012	2013
Apex			100%	79%	100%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



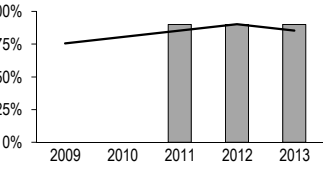
	2009	2010	2011	2012	2013
Apex			33%	0%	0%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



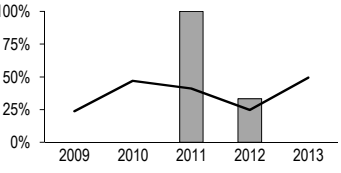
	2009	2010	2011	2012	2013
Apex					79%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Apex			90%	90%	90%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Apex			100.0%	33.3%	
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the Asheville Fire and Rescue Department is to protect the lives, property, and environment of all people within Asheville and the town of Biltmore Forest by preventing the occurrence and minimizing the adverse effects of fires, accidents, and all other emergencies.

The fire department contains the following divisions: administration, emergency response, fire marshal's office, and professional standards.

The fire department uses a modified shift schedule that includes twenty-four hours on duty and twenty-four hours off duty, averaging fifty-six hours per week. The work schedule is as follows: twenty-four hours on, twenty-four hours off; twenty-four hours on, forty-eight hours off; twenty-four hours on, twenty-four hours off; twenty-four hours on, ninety-six hours off. This works out to an average work week of fifty-six hours.

The city has an ISO rating of 3, as rated in 2007. The Asheville Fire and Rescue Department has been accredited since 2005.

The fire and rescue department conducted 8,077 fire maintenance, construction, and reinspections during FY 2012–13. The fire marshal's office is comprised of two sections. One section is responsible for existing construction and another for new construction. Deputy fire marshals (DFMs) are responsible for conducting periodic fire prevention inspections inside the corporate limits of the City of Asheville, as required by the N.C. Office of the State Fire Marshal. The Asheville city council adopted a fee schedule for periodic fire inspections. These fees are based on a cost recovery basis. Each DFM conducts fire inspections of every commercial premise located within Asheville. Most personnel work a day shift, while several work a twenty-four-hour shift. These DFMs are liaisons to the other divisions on matters regarding code enforcement, fire investigations, and pre-incident planning.

Conditions Affecting Service, Performance, and Costs

Fire inspections in Asheville were down in FY 2009–10 due to a drop in new construction.

Municipal Profile

Service Population	91,665
Land Area (Square Miles)	60.00
Persons per Square Mile	1,528
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Firefighters	218.0
FTE Positions—Other	21.0
Fire Stations	12
First-Line Fire Apparatus	
Pumpers	9
Aerial Trucks	3
Quints	2
Squads	1
Rescue	1
Other	7
Fire Department Responses	15,012
Responses for Fires	422
Structural Fires Reported	86
Inspections Completed for Maintenance, Construction, and Reinspections	8,077
Fire Code Violations Reported	9,005
Estimated Fire Loss (millions)	$5.43
Amount of Property Protected in Service Area (millions)	$11,665
Number of Fire Education Programs or Events	292

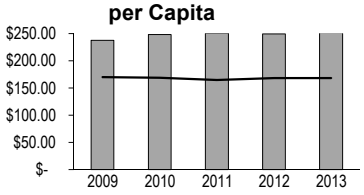
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	71.1%
Operating Costs	17.3%
Capital Costs	11.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,388,667
Operating Costs	$4,220,986
Capital Costs	$2,842,960
TOTAL	$24,452,613

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

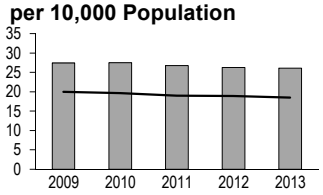
Resource Measures

Fire Services Costs per Capita



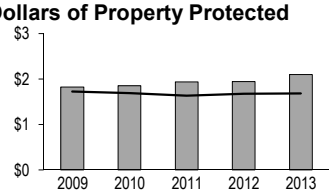
	2009	2010	2011	2012	2013
Asheville	$237.9	$248.5	$250.3	$249	$267
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	27.4	27.5	26.8	26.2	26.1
Average	20.0	19.6	19.0	18.9	18.5

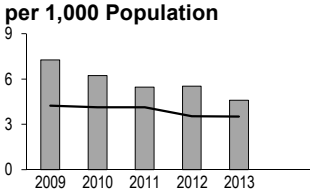
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Asheville	$1.82	$1.85	$1.94	$1.95	$2.10
Average	$1.72	$1.69	$1.63	$1.67	$1.68

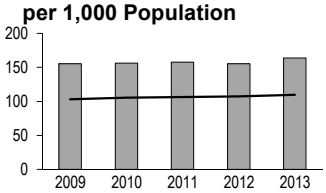
Workload Measures

Actual Fires per 1,000 Population



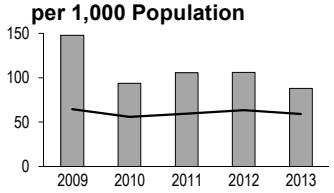
	2009	2010	2011	2012	2013
Asheville	7.27	6.23	5.46	5.52	4.60
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	155	156	158	155	164
Average	103	105	107	108	110

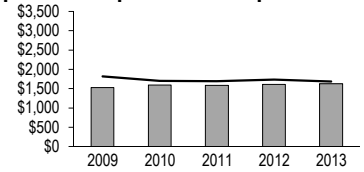
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Asheville	148	94	106	106	88
Average	65	56	59	64	59

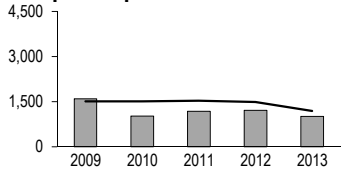
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Asheville	$1,530	$1,591	$1,588	$1,607	$1,629
Average	$1,818	$1,700	$1,691	$1,737	$1,688

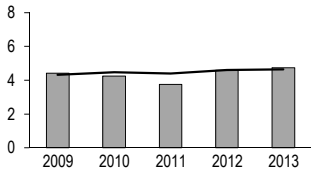
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Asheville	1,593	1,018	1,180	1,208	1,010
Average	1,512	1,505	1,531	1,481	1,183

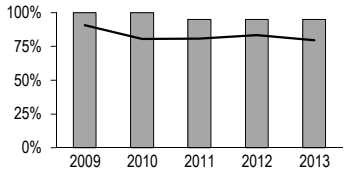
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



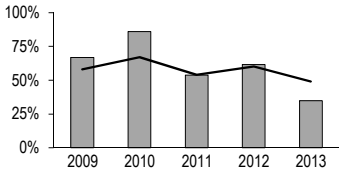
	2009	2010	2011	2012	2013
Asheville	4.4	4.3	3.8	4.6	4.7
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



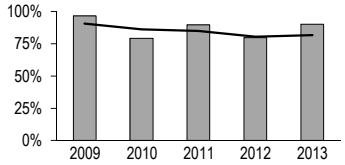
	2009	2010	2011	2012	2013
Asheville	100%	100%	95%	95%	95%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



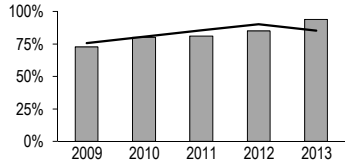
	2009	2010	2011	2012	2013
Asheville	67%	86%	54%	62%	35%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



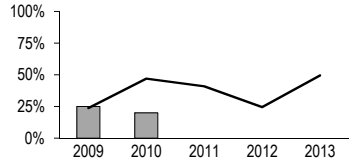
	2009	2010	2011	2012	2013
Asheville	96%	79%	90%	80%	90%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Asheville	73%	80%	81%	85%	94%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Asheville	25.0%	20.0%			
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the City of Burlington Fire Department is to protect the lives, property, and environment of all people within Burlington by preventing the occurrence and minimizing the adverse effects of fires, accidents, and all other emergencies. The department is divided into three areas: suppression, fire prevention, and training.

Burlington uses three shifts for staffing fire houses. All shift personnel work on a rotating schedule, twenty-four hours on, followed by forty-eight hours off.

The city has an ISO rating of 3, as rated in 2005.

The fire department conducted 2,855 fire maintenance, construction, and reinspections during FY 2012–13. Fire Prevention Bureau personnel conduct general fire inspections as well as inspections for fireworks, blasting, tank installations/removals, and night inspections for overcrowding/exit obstructions for assembly occupancies. Apartment complexes generate one file.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2011)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Firefighters	81.0
FTE Positions—Other	10.5
Fire Stations	5
First-Line Fire Apparatus	
Pumpers	4
Aerial Trucks	1
Quints	1
Squads	1
Rescue	1
Other	1
Fire Department Responses	7,914
Responses for Fires	212
Structural Fires Reported	39
Inspections Completed for Maintenance, Construction, and Reinspections	2,855
Fire Code Violations Reported	2,117
Estimated Fire Loss (millions)	$2.63
Amount of Property Protected in Service Area (millions)	$4,165
Number of Fire Education Programs or Events	527

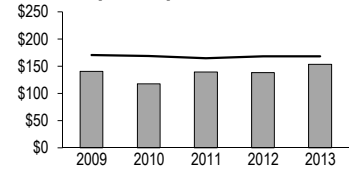
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	69.6%
Operating Costs	20.4%
Capital Costs	10.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,476,949
Operating Costs	$1,603,868
Capital Costs	$786,767
TOTAL	$7,867,584

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

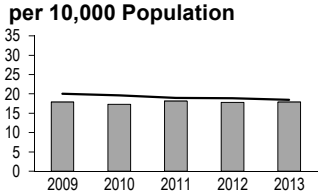
Resource Measures

Fire Services Costs per Capita



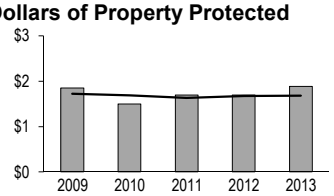
	2009	2010	2011	2012	2013
Burlington	$141	$118	$139	$138	$154
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	17.9	17.3	18.1	17.8	17.9
Average	20.0	19.6	19.0	18.9	18.5

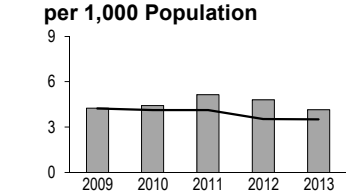
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Burlington	$1.85	$1.50	$1.69	$1.70	$1.89
Average	$1.72	$1.69	$1.63	$1.67	$1.68

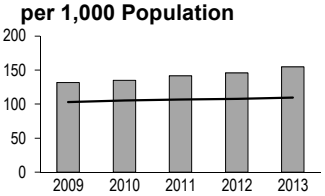
Workload Measures

Actual Fires per 1,000 Population



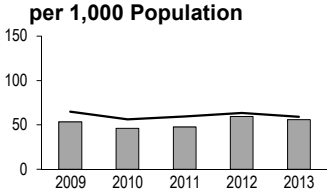
	2009	2010	2011	2012	2013
Burlington	4.26	4.43	5.13	4.80	4.14
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	132	135	141	146	155
Average	103	105	107	108	110

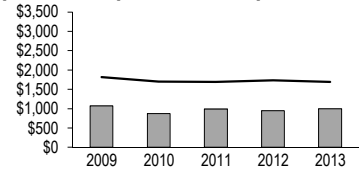
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Burlington	53	46	48	59	56
Average	65	56	59	64	59

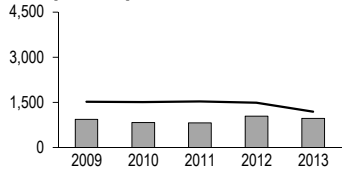
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Burlington	$1,068	$874	$984	$946	$994
Average	$1,818	$1,700	$1,691	$1,737	$1,688

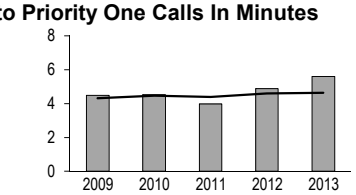
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Burlington	926	825	815	1,033	968
Average	1,512	1,505	1,531	1,481	1,183

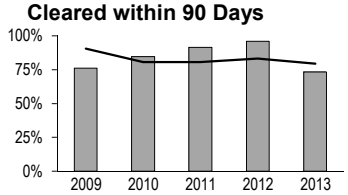
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



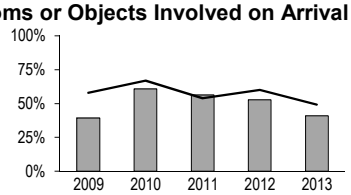
	2009	2010	2011	2012	2013
Burlington	4.5	4.5	4.0	4.9	5.6
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



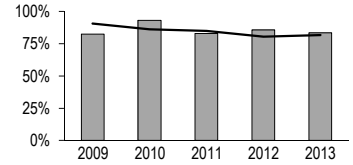
	2009	2010	2011	2012	2013
Burlington	76%	85%	92%	96%	73%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



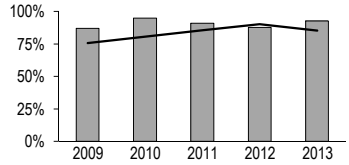
	2009	2010	2011	2012	2013
Burlington	39%	61%	56%	53%	41%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



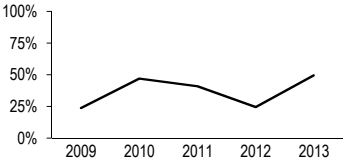
	2009	2010	2011	2012	2013
Burlington	82%	93%	83%	86%	83%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Burlington	87%	95%	91%	88%	93%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Burlington					
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Cary Fire Department provides fire protection, emergency medical services (EMS), technical rescue (except hazmat technician and specialist level service), fire code enforcement services, and plans review.

All emergency services (shift) personnel are trained and certified as "NC FFII," "EMT–with defibrillator," and rescue technicians. Emergency services staff members work from eight fire stations on three twenty-four-hour shifts. Each shift is divided into two battalions, each supervised by a battalion chief. Currently each battalion consists of three or four fire stations, each having an engine company and either a ladder truck or light rescue company.

The town has an ISO rating of 3, as rated in 2010. The Cary Fire Department has been accredited since 1999.

The town conducted 5,528 fire maintenance, construction, and reinspections during FY 2012–13. The Cary Fire Department's Risk Management Division utilizes the state mandated one-, two-, and three-year inspection schedule as its goal for providing inspection services. It conducts inspections on all projects for which a permit is issued. For all violations found during routine inspections, follow-up inspections are used until the violation is resolved. For apartment complexes, each separate building that requires an inspection has a file for that particular building, and each building is counted as one separate inspection. The Risk Management Division also conducts follow-up inspections for all alarm malfunctions and false alarms in businesses. It issues the charges for permits outlined in the fire code and charges a penalty/fine for alarm malfunctions and false alarms.

All risk management personnel are certified as Standard Level 3 inspectors. The fire marshal, who currently manages the division, reviews various site, building, and systems plans and serves as the direct supervisor for the inspection staff. In addition to plans review and code enforcement services, the division provides public education services through a public educator.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Service Population	143,912
Land Area (Square Miles)	55.88
Persons per Square Mile	2,575
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Firefighters	204.0
FTE Positions—Other	22.7
Fire Stations	8
First-Line Fire Apparatus	
Pumpers	8
Aerial Trucks	4
Quints	0
Squads	0
Rescue	3
Other	9
Fire Department Responses	7,383
Responses for Fires	233
Structural Fires Reported	56
Inspections Completed for Maintenance, Construction, and Reinspections	5,528
Fire Code Violations Reported	7,374
Estimated Fire Loss (millions)	$2.93
Amount of Property Protected in Service Area (millions)	$21,259
Number of Fire Education Programs or Events	286

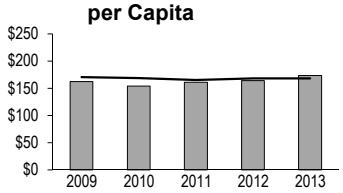
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.9%
Operating Costs	20.1%
Capital Costs	9.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,705,299
Operating Costs	$5,017,128
Capital Costs	$2,250,325
TOTAL	$24,972,752

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

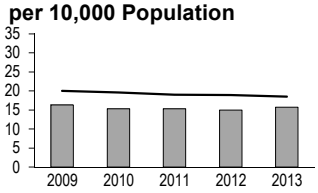
Resource Measures

Fire Services Costs per Capita



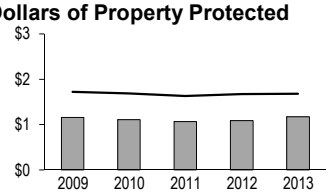
	2009	2010	2011	2012	2013
Cary	$162	$154	$161	$164	$174
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	16.3	15.3	15.4	15.0	15.8
Average	20.0	19.6	19.0	18.9	18.5

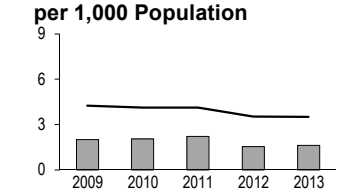
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Cary	$1.16	$1.11	$1.07	$1.08	$1.17
Average	$1.72	$1.69	$1.63	$1.67	$1.68

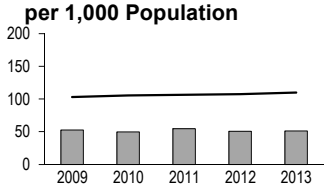
Workload Measures

Actual Fires per 1,000 Population



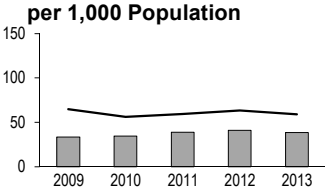
	2009	2010	2011	2012	2013
Cary	2.01	2.05	2.22	1.55	1.62
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Cary	53	50	54	51	51
Average	103	105	107	108	110

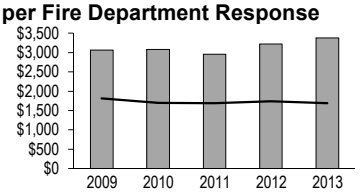
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Cary	34	35	39	41	38
Average	65	56	59	64	59

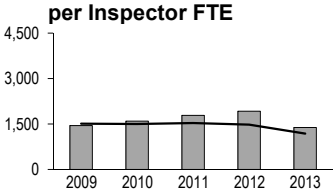
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Cary	$3,067	$3,079	$2,960	$3,226	$3,382
Average	$1,818	$1,700	$1,691	$1,737	$1,688

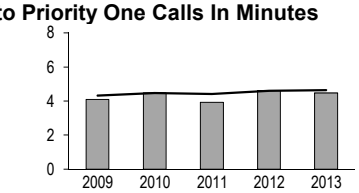
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Cary	1,443	1,597	1,788	1,920	1,382
Average	1,512	1,505	1,531	1,481	1,183

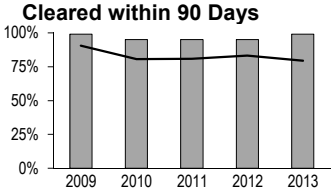
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



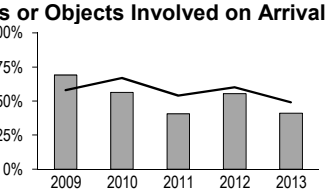
	2009	2010	2011	2012	2013
Cary	4.1	4.5	3.9	4.6	4.5
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



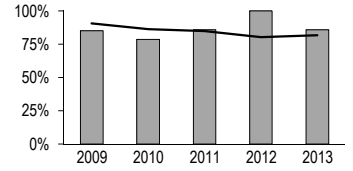
	2009	2010	2011	2012	2013
Cary	99%	95%	95%	95%	99%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



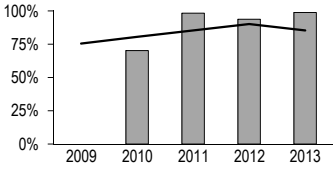
	2009	2010	2011	2012	2013
Cary	69%	56%	41%	55%	41%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



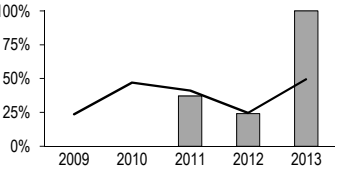
	2009	2010	2011	2012	2013
Cary	85%	79%	86%	100%	86%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Cary		70%	98%	94%	99%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Cary			37.1%	24.1%	100.0%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the Charlotte Fire Department is to minimize the risk of fire and other hazards to the life and property of the citizens of Charlotte. To accomplish this mission, the department provides response to and mitigation of fires, medical emergencies, hazardous materials incidents, aircraft emergencies, technical rescues, and other emergencies as they arise. These services are provided immediately to any person who has a need anywhere within the corporate limits of Charlotte.

The divisions of the Charlotte Fire Department are operations (A, B, C), training, administration, communications, logistics, fire prevention, and fire investigation.

The city uses a modified twenty-four-hour/forty-eight-hour shift schedule, using four twenty-four-hour shifts in a twelve-day cycle. The cycle is on one day, off one day, on one day, off two days, on one day, off one day, on one day, off four days. In addition, firefighters receive a Kelley day (ten hours) off and a Kelley night (fourteen hours) off every seven weeks to maintain the number of hours worked per week at fifty-two.

The city has an ISO rating of 3. The Charlotte Fire Department has been accredited since 2000.

The fire department conducted 30,952 fire maintenance, construction, and reinspections during FY 2012–13. All inspections are performed by certified fire inspectors who are employees of the Fire Prevention Bureau. The inspectors handle certificate of occupancy inspections, permit inspections and issuances, regular code enforcement inspections, and reinspections. The Bureau currently uses separate inspections on each building of an apartment complex.

Conditions Affecting Service, Performance, and Costs

Charlotte staffs a fire station at the airport in addition to forty-one community fire stations.

Municipal Profile

Population (OSBM 2011)	779,659
Land Area (Square Miles)	309.24
Persons per Square Mile	2,521
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Firefighters	1034.0
FTE Positions—Other	132.0
Fire Stations	42
First-Line Fire Apparatus	
Pumpers	41
Aerial Trucks	0
Quints	15
Squads	0
Rescue	2
Other	36
Fire Department Responses	97,356
Responses for Fires	2,006
Structural Fires Reported	469
Inspections Completed for Maintenance, Construction, and Reinspections	30,952
Fire Code Violations Reported	33,229
Estimated Fire Loss (millions)	$10.64
Amount of Property Protected in Service Area (millions)	$91,937
Number of Fire Education Programs or Events	1,399

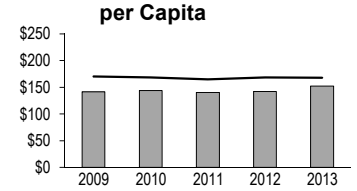
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	77.2%
Operating Costs	14.6%
Capital Costs	8.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$91,643,254
Operating Costs	$17,272,883
Capital Costs	$9,786,616
TOTAL	$118,702,753

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

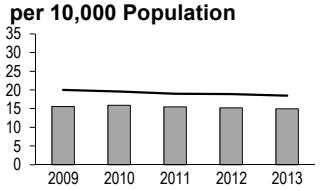
Resource Measures

Fire Services Costs per Capita



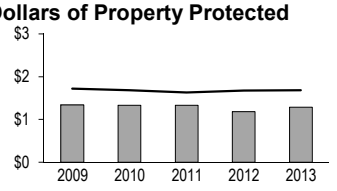
	2009	2010	2011	2012	2013
Charlotte	$142	$144	$140	$142	$152
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	15.5	15.9	15.5	15.2	15.0
Average	20.0	19.6	19.0	18.9	18.5

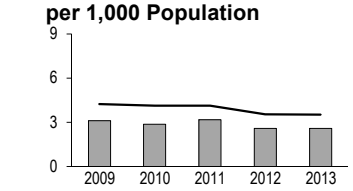
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Charlotte	$1.34	$1.33	$1.33	$1.18	$1.29
Average	$1.72	$1.69	$1.63	$1.67	$1.68

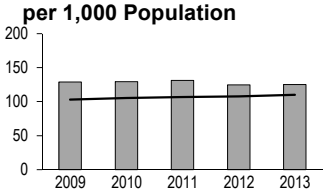
Workload Measures

Actual Fires per 1,000 Population



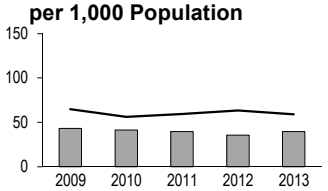
	2009	2010	2011	2012	2013
Charlotte	3.11	2.85	3.17	2.58	2.57
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Charlotte	129	129	131	125	125
Average	103	105	107	108	110

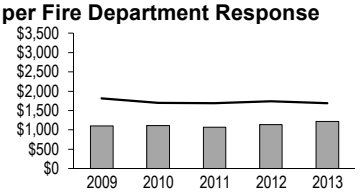
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Charlotte	43	41	40	35	40
Average	65	56	59	64	59

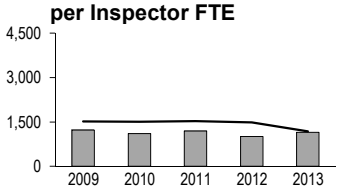
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Charlotte	$1,101	$1,112	$1,066	$1,139	$1,219
Average	$1,818	$1,700	$1,691	$1,737	$1,688

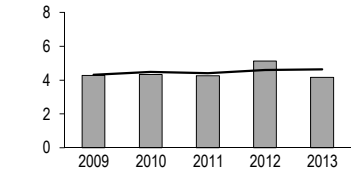
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Charlotte	1,227	1,101	1,195	1,007	1,146
Average	1,512	1,505	1,531	1,481	1,183

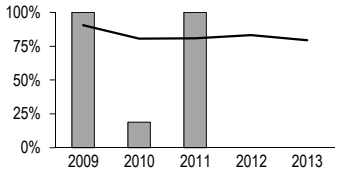
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



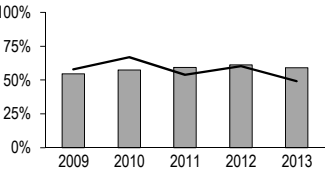
	2009	2010	2011	2012	2013
Charlotte	4.3	4.3	4.3	5.1	4.2
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



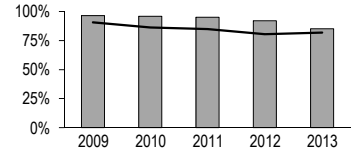
	2009	2010	2011	2012	2013
Charlotte	100%	19%	100%		
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



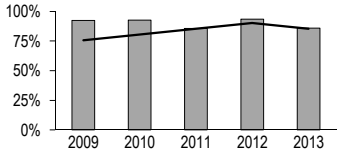
	2009	2010	2011	2012	2013
Charlotte	55%	58%	59%	61%	59%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



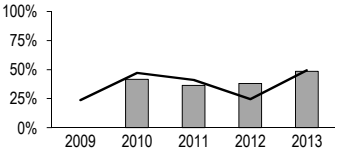
	2009	2010	2011	2012	2013
Charlotte	96%	96%	95%	92%	85%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Charlotte	92%	93%	86%	94%	86%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Charlotte		41.5%	36.5%	38.0%	48.4%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Concord Fire Department is committed to providing a positive work environment to enable the department and its personnel to strive for and achieve excellence in fire protection services.

The department is committed to the following: providing leadership through a management/employee team organizational concept that is dedicated to modern-day management principles and practices; providing the citizens with the best possible modern-day fire protection and life safety services in a courteous, professional, and cost-effective manner; providing equal opportunity for all employees to excel in their job performance and career development; striving to continually increase the public's awareness through fire prevention activities, public education, and community-based services; maintaining and striving to improve on an open, informative flow of correct information so that all employees and employee teams reach their goals and objectives; subscribing to departmental values of honesty, professionalism, teamwork, loyalty, dedication, and commitment to serving the public; and planning for change to develop and prepare the department to always strive for excellence.

The fire department in Concord contains the following divisions: administration, suppression, operations, training and career development, fire-risk management, and emergency management.

The fire department utilizes a shift schedule that includes twenty-four hours on and forty-eight hours off.

The city has an ISO rating of 2, as rated in 2013. This represented an improvement from the prior rating.

The fire department conducted 7,704 fire maintenance, construction, and reinspections during FY 2012–13. Inspections are conducted by the Fire-Risk Management Division. Each inspector has an assigned area of the city and a specific number of inspections to complete. Each occupancy is counted separately in the inspections number. An apartment complex would be considered as one occupancy. Reinspections are conducted within forty-five days to confirm corrections.

Conditions Affecting Service, Performance, and Costs
Concord staffs a fire station at the airport in addition to nine community fire stations.

Municipal Profile

Service Population	84,715
Land Area (Square Miles)	66.73
Persons per Square Mile	1,270
Median Family Income	$63,643
U.S. Census 2010	

Service Profile

FTE Positions—Firefighters	168.0
FTE Positions—Other	23.0
Fire Stations	10
First-Line Fire Apparatus	
Pumpers	9
Aerial Trucks	3
Quints	0
Squads	0
Rescue	1
Other	10
Fire Department Responses	9,077
Responses for Fires	292
Structural Fires Reported	64
Inspections Completed for Maintenance, Construction, and Reinspections	7,704
Fire Code Violations Reported	4,802
Estimated Fire Loss (millions)	$2.23
Amount of Property Protected in Service Area (millions)	$10,687
Number of Fire Education Programs or Events	583

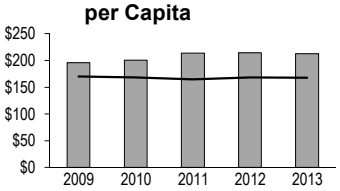
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	67.9%
Operating Costs	19.7%
Capital Costs	12.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$12,234,753
Operating Costs	$3,549,597
Capital Costs	$2,225,179
TOTAL	$18,009,529

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

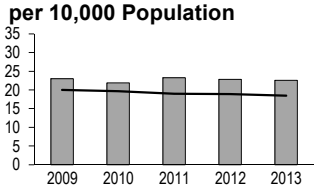
Resource Measures

Fire Services Costs per Capita



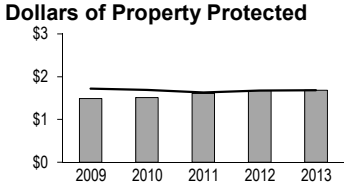
	2009	2010	2011	2012	2013
Concord	$196	$201	$214	$214	$213
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	23.0	21.9	23.2	22.8	22.5
Average	20.0	19.6	19.0	18.9	18.5

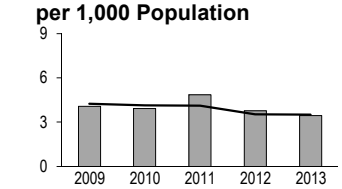
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Concord	$1.49	$1.51	$1.61	$1.68	$1.69
Average	$1.72	$1.69	$1.63	$1.67	$1.68

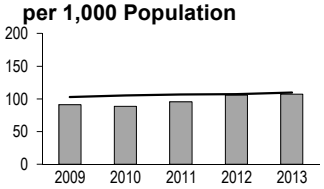
Workload Measures

Actual Fires per 1,000 Population



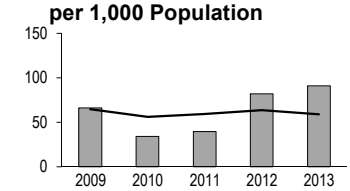
	2009	2010	2011	2012	2013
Concord	4.07	3.92	4.86	3.77	3.45
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Concord	91	89	96	106	107
Average	103	105	107	108	110

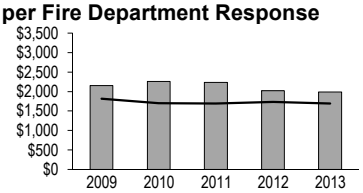
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Concord	66	34	40	82	91
Average	65	56	59	64	59

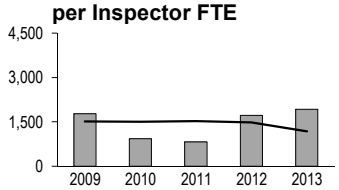
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Concord	$2,149	$2,261	$2,232	$2,023	$1,984
Average	$1,818	$1,700	$1,691	$1,737	$1,688

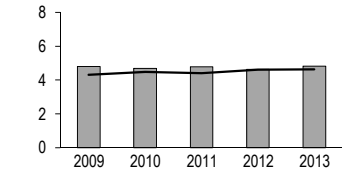
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Concord	1,770	934	820	1,717	1,926
Average	1,512	1,505	1,531	1,481	1,183

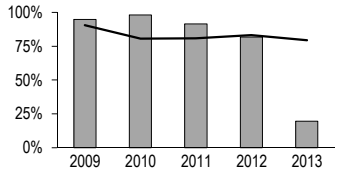
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



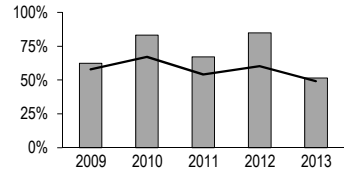
	2009	2010	2011	2012	2013
Concord	4.8	4.7	4.8	4.6	4.8
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



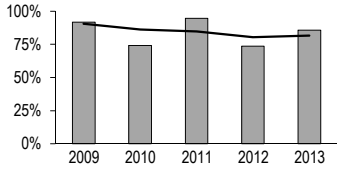
	2009	2010	2011	2012	2013
Concord	95%	98%	92%	82%	20%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



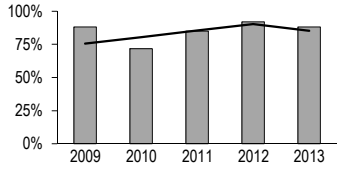
	2009	2010	2011	2012	2013
Concord	62%	83%	67%	85%	52%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



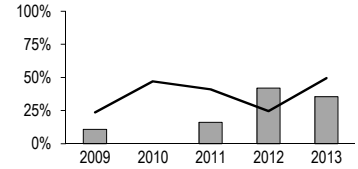
	2009	2010	2011	2012	2013
Concord	92%	74%	95%	74%	86%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Concord	88%	72%	85%	92%	88%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Concord	10.8%		16.3%	42.1%	35.6%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the Durham Fire Department is to prevent harm, stay safe, and seek opportunities to provide quality service.

The fire department contains units for fire protection, emergency medical services, hazardous materials, technical rescue, code enforcement and fire investigation, and public fire safety education.

The city uses twenty-four-hour shifts that alternate days until five shifts have been completed. Six days off are then granted following the last day worked of the alternating five cycles. Then the cycle repeats itself so that over a fifteen-day period a firefighter completes 120 hours of work.

The city has an ISO rating of 3.

The fire department conducted 7,766 fire maintenance inspections and reinspections during FY 2012–13. The fire prevention division handles fire inspections. Fire inspections are conducted on an annual basis, and each business is notified at least ten days prior to a fire inspection. A fee is assessed to each business for a permit. Each apartment complex is assigned one file number.

Conditions Affecting Service, Performance, and Costs

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Service Population	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Positions—Firefighters	287.0
FTE Positions—Other	29.0
Fire Stations	16
First-Line Fire Apparatus	
Pumpers	14
Aerial Trucks	4
Quints	2
Squads	3
Rescue	3
Other	5
Fire Department Responses	20,372
Responses for Fires	864
Structural Fires Reported	162
Inspections Completed for Maintenance, Construction, and Reinspections	7,766
Fire Code Violations Reported	2,583
Estimated Fire Loss (millions)	$6.53
Amount of Property Protected in Service Area (millions)	$22,723
Number of Fire Education Programs or Events	243

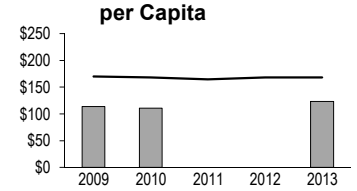
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.8%
Operating Costs	17.6%
Capital Costs	9.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$21,232,790
Operating Costs	$5,120,310
Capital Costs	$2,808,855
TOTAL	$29,161,955

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

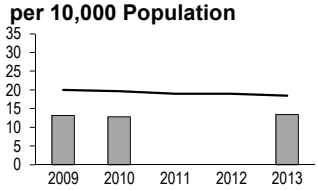
Resource Measures

Fire Services Costs per Capita



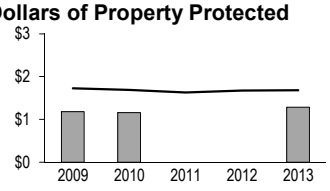
	2009	2010	2011	2012	2013
Durham	$114	$111			$123
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	13.1	12.8			13.4
Average	20.0	19.6	19.0	18.9	18.5

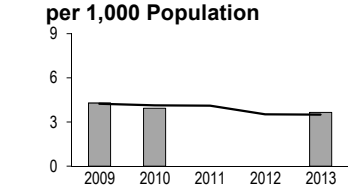
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Durham	$1.18	$1.16			$1.28
Average	$1.72	$1.69	$1.63	$1.67	$1.68

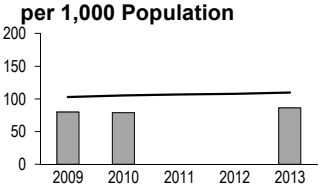
Workload Measures

Actual Fires per 1,000 Population



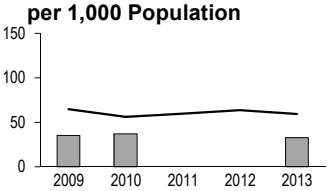
	2009	2010	2011	2012	2013
Durham	4.29	3.94			3.65
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Durham	80	79			86
Average	103	105	107	108	110

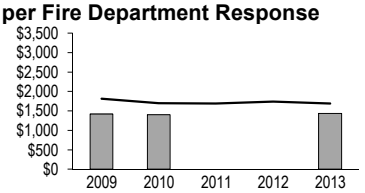
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Durham	35	37			33
Average	65	56	59	64	59

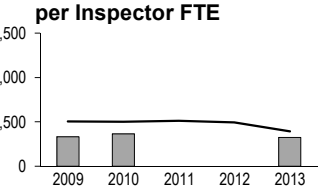
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Durham	$1,418	$1,399			$1,431
Average	$1,818	$1,700	$1,691	$1,737	$1,688

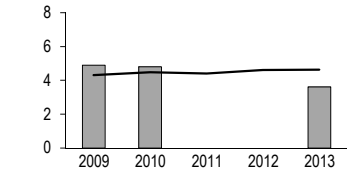
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Durham	995	1,094			971
Average	1,512	1,505	1,531	1,481	1,183

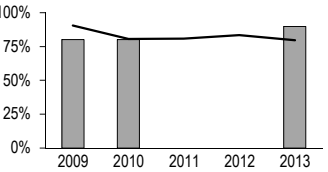
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



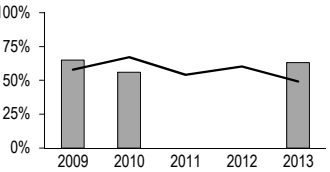
	2009	2010	2011	2012	2013
Durham	4.9	4.8			3.6
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



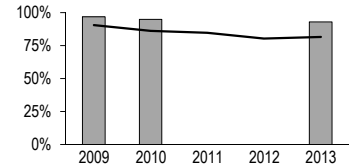
	2009	2010	2011	2012	2013
Durham	80%	80%			90%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



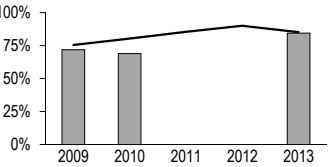
	2009	2010	2011	2012	2013
Durham	65%	56%			63%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



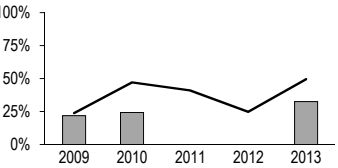
	2009	2010	2011	2012	2013
Durham	97%	95%			93%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Durham	72%	69%			85%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Durham	21.7%	24.2%			32.6%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The mission of the Greensboro Fire Department is to provide the public the best possible service in a courteous, professional, and cost-effective manner; to provide leadership through a well-defined management team committed to the departmental management philosophy; to provide equal opportunity for all employees in job performance and career development; to enhance public awareness through education, activities, and services; to maintain an open, informative flow of information so that all municipal departments may reach their goals and objectives; and to subscribe to honesty, integrity, and fairness.

The fire department contains two branches: emergency services and support services.

The fire department utilizes a shift schedule that includes twenty-four hours on and forty-eight hours off. For Fair Labor Standards Act (FLSA) purposes, the department utilizes a twenty-seven-day cycle.

The city has an ISO rating of 1, the highest rating possible to receive, as rated in 2012. The Greensboro Fire Department has been accredited since 1997.

The fire department in Greensboro conducted 11,512 fire maintenance, construction, and reinspections during FY 2012–13. General inspections are performed according to the mandated inspection schedule, which is based on occupancy type established in the International Fire Code. Complaints are addressed within twenty-four hours and are handled twenty-four hours a day as shift personnel are available. Inspectors generally work in districts and work in specialized areas, including educational, institutional, high rise, privilege licenses, and certificates of compliance. Apartment complexes are assigned one file number for the entire complex.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Service Population	283,705
Land Area (Square Miles)	138.36
Persons per Square Mile	2,050
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Firefighters	489.0
FTE Positions—Other	58.0
Fire Stations	24
First-Line Fire Apparatus	
Pumpers	23
Aerial Trucks	0
Quints	10
Squads	0
Rescue	1
Other	0
Fire Department Responses	33,027
Responses for Fires	1,037
Structural Fires Reported	248
Inspections Completed for Maintenance, Construction, and Reinspections	11,512
Fire Code Violations Reported	11,831
Estimated Fire Loss (millions)	$18.22
Amount of Property Protected in Service Area (millions)	$25,191
Number of Fire Education Programs or Events	939

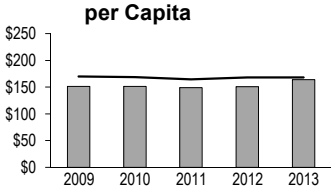
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.7%
Operating Costs	24.3%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$35,252,779
Operating Costs	$11,305,809
Capital Costs	$0
TOTAL	$46,558,588

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

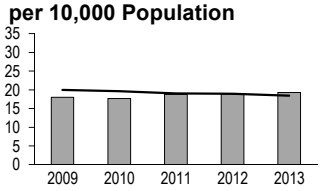
Resource Measures

Fire Services Costs per Capita



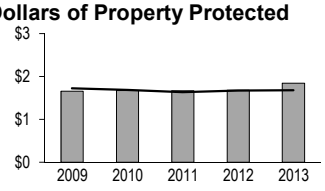
	2009	2010	2011	2012	2013
Greensboro	$151	$152	$149	$151	$164
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	18.0	17.7	18.8	18.8	19.3
Average	20.0	19.6	19.0	18.9	18.5

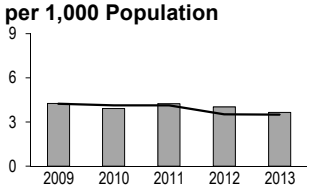
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Greensboro	$1.66	$1.67	$1.66	$1.68	$1.85
Average	$1.72	$1.69	$1.63	$1.67	$1.68

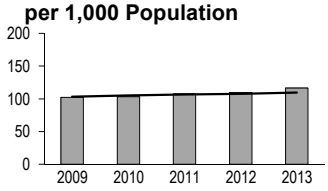
Workload Measures

Actual Fires per 1,000 Population



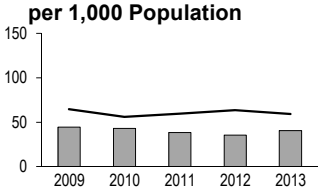
	2009	2010	2011	2012	2013
Greensboro	4.26	3.92	4.25	4.02	3.66
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	102	103	108	110	116
Average	103	105	107	108	110

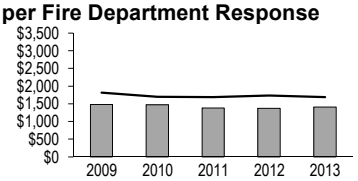
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Greensboro	45	43	38	35	41
Average	65	56	59	64	59

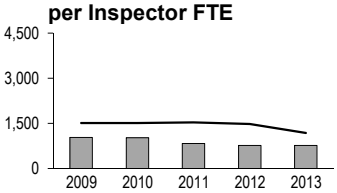
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Greensboro	$1,480	$1,471	$1,382	$1,375	$1,410
Average	$1,818	$1,700	$1,691	$1,737	$1,688

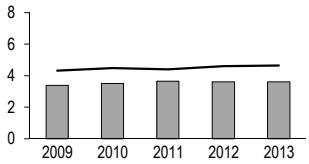
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Greensboro	1,035	1,021	831	764	767
Average	1,512	1,505	1,531	1,481	1,183

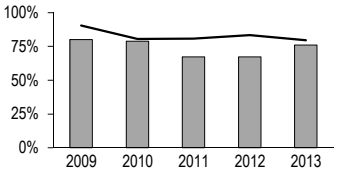
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



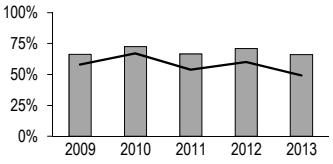
	2009	2010	2011	2012	2013
Greensboro	3.4	3.5	3.7	3.6	3.6
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



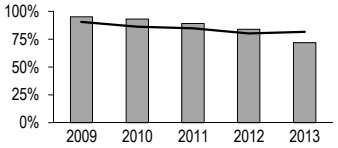
	2009	2010	2011	2012	2013
Greensboro	80%	79%	67%	67%	76%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



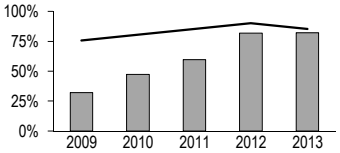
	2009	2010	2011	2012	2013
Greensboro	66%	73%	67%	71%	66%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



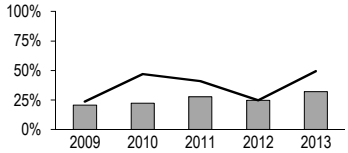
	2009	2010	2011	2012	2013
Greensboro	95%	93%	89%	84%	72%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Greensboro	32%	47%	60%	82%	82%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Greensboro	20.6%	22.4%	27.6%	24.8%	32.1%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The primary goals of the Greenville Fire and Rescue Department are to prevent fires and save lives and property by providing emergency response services for fires or medical emergencies.

Emergency personnel work a 24.25-hour shift followed by 47.75 hours off.

The city has an ISO rating of 3, as rated in 2007.

The fire department in Greenville conducted 1,882 fire maintenance, construction, and reinspections during FY 2012–13. The Life Safety Services Division handles all inspection-related matters following the International Fire Code.

Conditions Affecting Service, Performance, and Costs
Greenville is one of only two cities in the benchmarking project that have emergency medical services (EMS) provided through the city fire department. In the other jurisdictions, EMS is provided by county departments.

Complications with data tracking prevented Greenville from being able to submit numbers on fire incidents and several other measures for earlier fiscal years.

Municipal Profile

Service Population	112,783
Land Area (Square Miles)	66.40
Persons per Square Mile	1,699
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Firefighters	142.0
FTE Positions—Other	17.0
Fire Stations	6
First-Line Fire Apparatus	
Pumpers	1
Aerial Trucks	1
Quints	5
Squads	0
Rescue	1
Other	7
Fire Department Responses	16,737
Responses for Fires	255
Structural Fires Reported	130
Inspections Completed for Maintenance, Construction, and Reinspections	1,882
Fire Code Violations Reported	1,663
Estimated Fire Loss (millions)	$1.72
Amount of Property Protected in Service Area (millions)	$7,807
Number of Fire Education Programs or Events	188

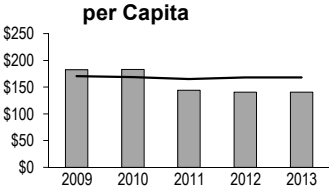
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	71.6%
Operating Costs	19.3%
Capital Costs	9.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$11,371,924
Operating Costs	$3,060,223
Capital Costs	$1,445,965
TOTAL	$15,878,112

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

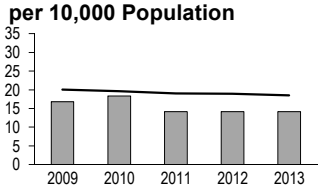
Resource Measures

Fire Services Costs per Capita



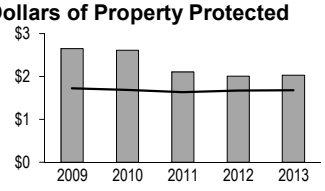
	2009	2010	2011	2012	2013
Greenville	$183	$183	$144	$141	$141
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	16.8	18.3	14.1	14.1	14.1
Average	20.0	19.6	19.0	18.9	18.5

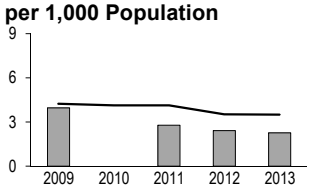
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Greenville	$2.65	$2.61	$2.10	$2.01	$2.03
Average	$1.72	$1.69	$1.63	$1.67	$1.68

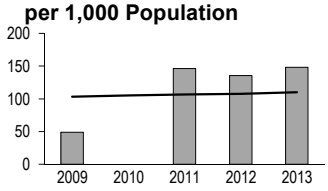
Workload Measures

Actual Fires per 1,000 Population



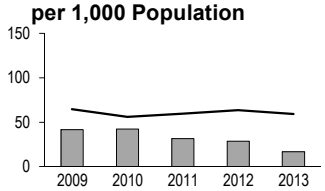
	2009	2010	2011	2012	2013
Greenville	3.96		2.79	2.42	2.26
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	49		146	135	148
Average	103	105	107	108	110

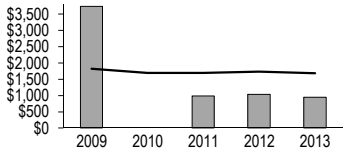
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Greenville	42	42	31	28	17
Average	65	56	59	64	59

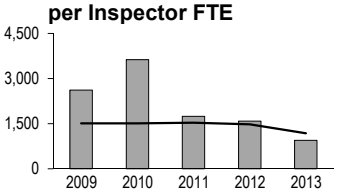
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Greenville	$3,740		$986	$1,040	$949
Average	$1,818	$1,700	$1,691	$1,737	$1,688

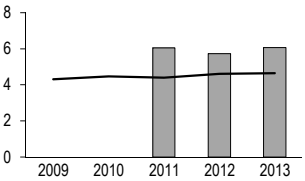
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Greenville	2,616	3,625	1,745	1,585	941
Average	1,512	1,505	1,531	1,481	1,183

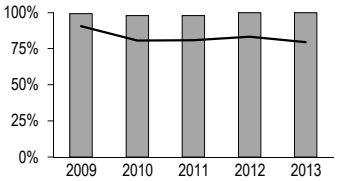
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



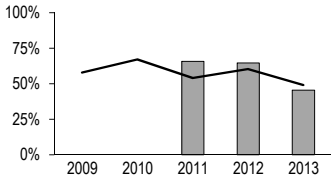
	2009	2010	2011	2012	2013
Greenville			6.1	5.7	6.1
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



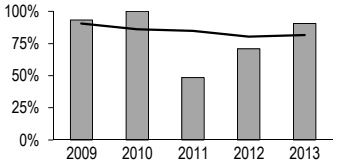
	2009	2010	2011	2012	2013
Greenville	99%	98%	98%	100%	100%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



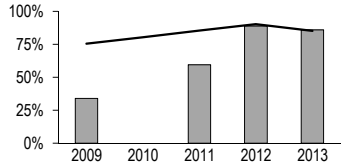
	2009	2010	2011	2012	2013
Greenville			66%	65%	45%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



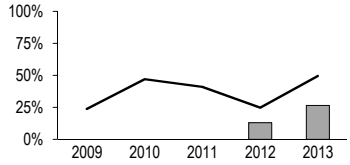
	2009	2010	2011	2012	2013
Greenville	93%	100%	49%	71%	91%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Greenville	34%		60%	89%	86%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Greenville				13.0%	26.4%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The primary goals of the Hickory Fire Department are to prevent fires, save lives and property, and protect the environment by providing vast amounts of training and planning for the formulation of a successful fire service delivery system.

The fire department contains the following divisions: administration, fire prevention, public education, training, maintenance, and fire suppression.

Fire suppression personnel work a twenty-four-hour shift with forty-eight hours off between shifts. The twenty-four-hour shift begins at 8 a.m.

The city has an ISO rating of 3, as rated in 2005

The fire department in Hickory conducted 5,215 fire maintenance, construction, and reinspections during FY 2012–13. Fire prevention inspectors are assigned Level I, Level II, and Level III inspections. They also review construction and fire protection plans and inspect the installation of fire protection systems. The inspectors also accompany building inspectors during certificate of occupancy inspections and are responsible for conducting fire investigations, fire hydrant flow tests, occupancy and site visits, and other activities as assigned.

Conditions Affecting Service, Performance, and Costs

Hickory has a fire station staffed at the regional airport in addition to the six community fire stations.

Municipal Profile

Service Population	45,057
Land Area (Square Miles)	42.64
Persons per Square Mile	1,057
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Positions—Firefighters	117.0
FTE Positions—Other	19.0
Fire Stations	7
First-Line Fire Apparatus	
Pumpers	7
Aerial Trucks	2
Quints	0
Squads	1
Rescue	1
Other	2
Fire Department Responses	6,084
Responses for Fires	192
Structural Fires Reported	40
Inspections Completed for Maintenance, Construction, and Reinspections	5,215
Fire Code Violations Reported	3,717
Estimated Fire Loss (millions)	$0.74
Amount of Property Protected in Service Area (millions)	$4,859
Number of Fire Education Programs or Events	412

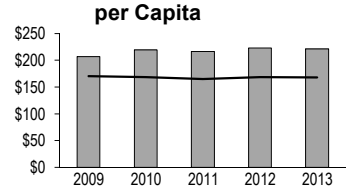
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	82.8%
Operating Costs	14.7%
Capital Costs	2.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,244,282
Operating Costs	$1,459,562
Capital Costs	$256,672
TOTAL	$9,960,516

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

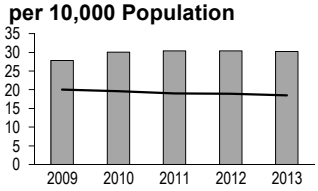
Resource Measures

Fire Services Costs per Capita



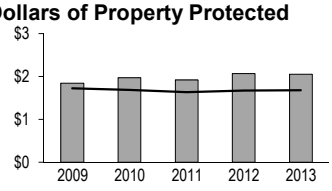
	2009	2010	2011	2012	2013
Hickory	$207	$219	$216	$223	$221
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	27.9	30.0	30.4	30.4	30.2
Average	20.0	19.6	19.0	18.9	18.5

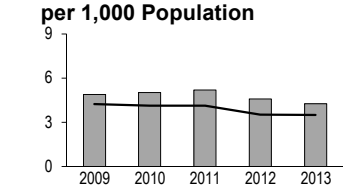
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Hickory	$1.84	$1.97	$1.91	$2.07	$2.05
Average	$1.72	$1.69	$1.63	$1.67	$1.68

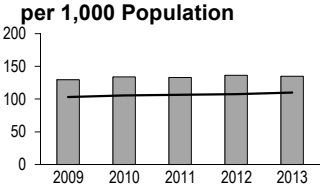
Workload Measures

Actual Fires per 1,000 Population



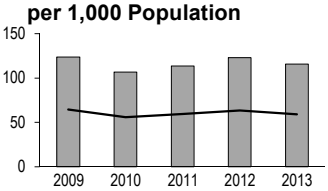
	2009	2010	2011	2012	2013
Hickory	4.88	5.01	5.19	4.59	4.26
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	129	134	133	136	135
Average	103	105	107	108	110

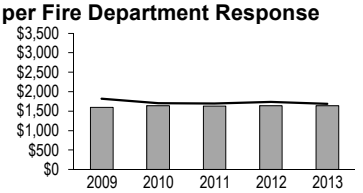
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Hickory	124	107	114	123	116
Average	65	56	59	64	59

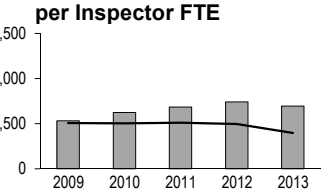
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Hickory	$1,597	$1,639	$1,629	$1,635	$1,637
Average	$1,818	$1,700	$1,691	$1,737	$1,688

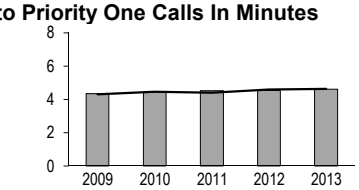
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Hickory	1,593	1,863	2,052	2,215	2,086
Average	1,512	1,505	1,531	1,481	1,183

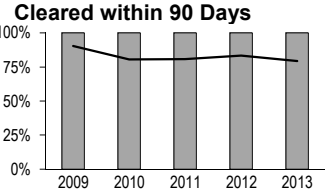
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



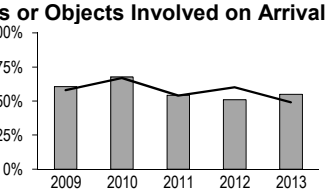
	2009	2010	2011	2012	2013
Hickory	4.4	4.5	4.5	4.6	4.6
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



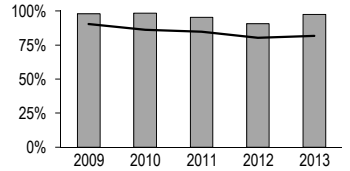
	2009	2010	2011	2012	2013
Hickory	100%	100%	100%	100%	100%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



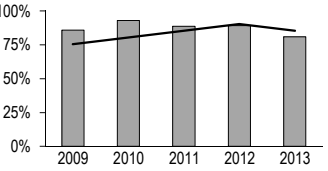
	2009	2010	2011	2012	2013
Hickory	61%	68%	54%	51%	55%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



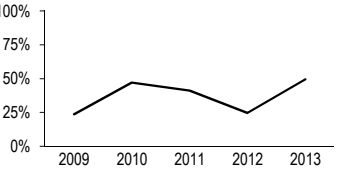
	2009	2010	2011	2012	2013
Hickory	98%	98%	95%	91%	97%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Hickory	86%	93%	89%	89%	81%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Hickory					
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The High Point Fire Department provides the following functions: firefighting, emergency medical response, rescue response, hazardous material technician response, inspection, fleet/vehicle maintenance, departmental technical services, and public life safety education and community relations.

The fire department contains the following divisions: administration, operations, and technical services.

Firefighters work twenty-four-hour shifts followed by forty-eight hours off. This cycle is repeated three times and is then followed by a four-day break, resulting in an average work week of fifty-six hours over a twenty-seven-day period.

The city has an ISO rating of 2, as rated in 2005.

The fire department in High Point conducted 6,764 fire maintenance, construction, and reinspections during FY 2012–13. All Level I inspections are conducted by fire suppression personnel. They are responsible for making the first inspection on an occupancy as well as conducting the first reinspection for that occupancy within thirty days. If code violations are not corrected, the case is turned over to fire prevention personnel for follow-up. All Level II and Level III inspections are conducted by fire prevention staff. All reinspections are conducted on thirty-day cycles.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Service Population	115,665
Land Area (Square Miles)	67.50
Persons per Square Mile	1,714
Median Family Income U.S. Census 2010	$49,720

Service Profile

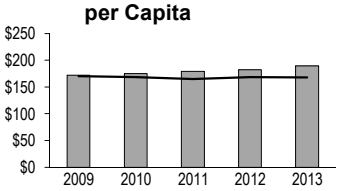
FTE Positions—Firefighters	200.0
FTE Positions—Other	25.0
Fire Stations	14
First-Line Fire Apparatus	
Pumpers	13
Aerial Trucks	3
Quints	0
Squads	3
Rescue	0
Other	9
Fire Department Responses	11,917
Responses for Fires	454
Structural Fires Reported	131
Inspections Completed for Maintenance, Construction, and Reinspections	6,764
Fire Code Violations Reported	2,502
Estimated Fire Loss (millions)	$3.54
Amount of Property Protected in Service Area (millions)	$10,102
Number of Fire Education Programs or Events	168

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.4%
Operating Costs	17.5%
Capital Costs	10.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$15,869,948
Operating Costs	$3,839,343
Capital Costs	$2,214,278
TOTAL	$21,923,569

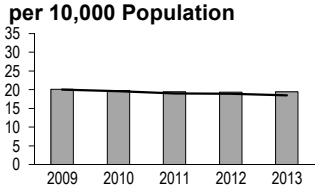
Resource Measures

Fire Services Costs per Capita



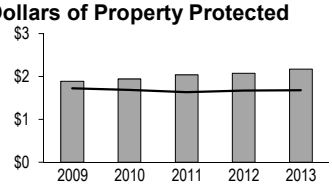
	2009	2010	2011	2012	2013
High Point	$172	$175	$180	$182	$190
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	20.1	19.8	19.5	19.3	19.5
Average	20.0	19.6	19.0	18.9	18.5

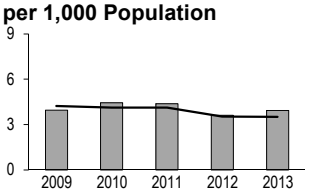
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
High Point	$1.89	$1.94	$2.04	$2.07	$2.17
Average	$1.72	$1.69	$1.63	$1.67	$1.68

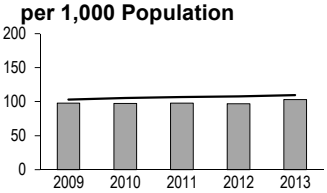
Workload Measures

Actual Fires per 1,000 Population



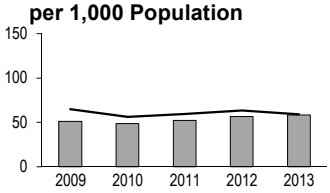
	2009	2010	2011	2012	2013
High Point	3.96	4.45	4.38	3.62	3.93
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
High Point	98	97	98	97	103
Average	103	105	107	108	110

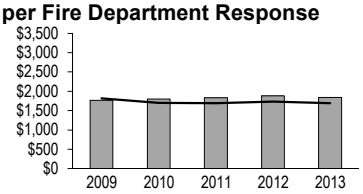
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
High Point	51	49	52	57	58
Average	65	56	59	64	59

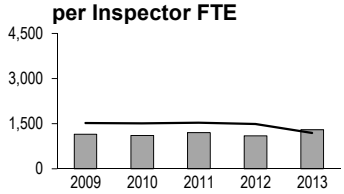
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
High Point	$1,762	$1,797	$1,836	$1,884	$1,840
Average	$1,818	$1,700	$1,691	$1,737	$1,688

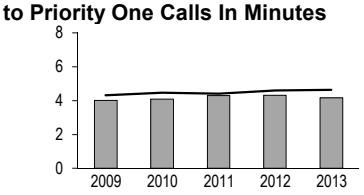
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
High Point	1,140	1,105	1,201	1,087	1,288
Average	1,512	1,505	1,531	1,481	1,183

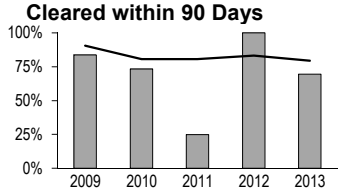
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



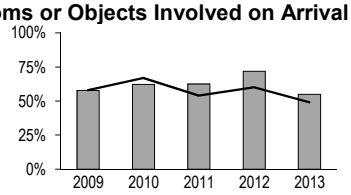
	2009	2010	2011	2012	2013
High Point	4.0	4.1	4.3	4.3	4.2
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



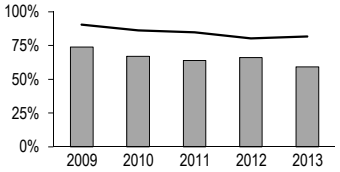
	2009	2010	2011	2012	2013
High Point	84%	73%	25%	100%	69%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



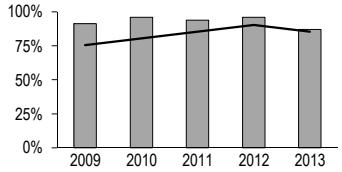
	2009	2010	2011	2012	2013
High Point	58%	62%	62%	72%	55%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



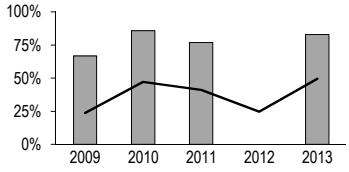
	2009	2010	2011	2012	2013
High Point	74%	67%	64%	66%	59%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
High Point	91%	96%	94%	96%	87%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
High Point	66.7%	85.7%	76.9%	0.0%	82.9%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The purpose of the Salisbury Fire Department is to provide capable, well-trained personnel and necessary equipment to suppress fires and effectively manage hazardous chemical accidents that may occur in the community related to transportation or industry; to provide rescue services as needed and basic life support through an updated First Responder Program; and to work toward a more fire-safe community through loss prevention activities, including inspections, code enforcement, minimum housing activities, and public education programs.

The fire department contains the following divisions: fire control, loss prevention, training, and logistics.

The shift schedule for the fire department is twenty-four hours on and forty-eight hours off for three cycles. There are three shifts. Captains and firefighters get a twenty-four-hour Kelley day plus four hours off for any twenty-eight-day cycle exceeding 212 hours worked. The city has some part-time personnel working to fill vacant spots on the shifts due to Kelley days. Salisbury now is a quint system of deployment and duty. The quint trucks combine the duties of an engine and a truck company into a single company.

The city has an ISO rating of 2, as rated in 2008.

The fire department in Salisbury conducted 3,163 fire maintenance, construction, and reinspections in FY 2012–13. The city follows or exceeds the state guidelines for frequency of inspections for all occupancies. Apartment buildings have one file number. Reinspections are performed at thirty-day intervals. Fees are assessed at the third inspection.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2011)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Firefighters	66.0
FTE Positions—Other	8.0
Fire Stations	4
First-Line Fire Apparatus	
Pumpers	1
Aerial Trucks	1
Quints	3
Squads	1
Rescue	1
Other	5
Fire Department Responses	4,553
Responses for Fires	165
Structural Fires Reported	38
Inspections Completed for Maintenance, Construction, and Reinspections	3,163
Fire Code Violations Reported	3,653
Estimated Fire Loss (millions)	$0.82
Amount of Property Protected in Service Area (millions)	$2,782
Number of Fire Education Programs or Events	78

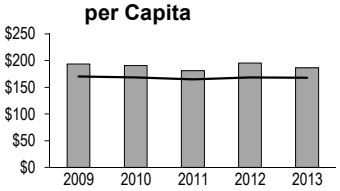
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	65.2%
Operating Costs	19.9%
Capital Costs	14.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,063,816
Operating Costs	$1,238,337
Capital Costs	$926,357
TOTAL	$6,228,510

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

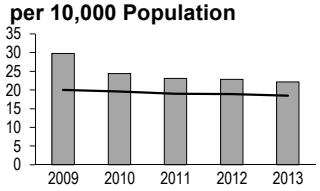
Resource Measures

Fire Services Costs per Capita



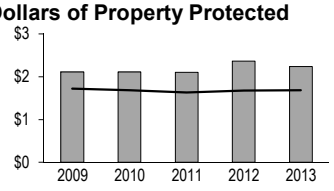
	2009	2010	2011	2012	2013
Salisbury	$194	$191	$181	$195	$186
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	29.8	24.3	23.1	22.8	22.1
Average	20.0	19.6	19.0	18.9	18.5

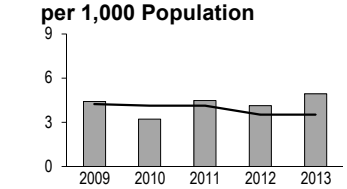
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Salisbury	$2.11	$2.11	$2.11	$2.36	$2.24
Average	$1.72	$1.69	$1.63	$1.67	$1.68

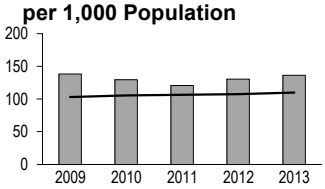
Workload Measures

Actual Fires per 1,000 Population



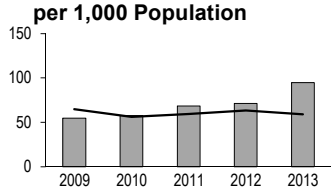
	2009	2010	2011	2012	2013
Salisbury	4.40	3.22	4.48	4.12	4.93
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	138	130	121	131	136
Average	103	105	107	108	110

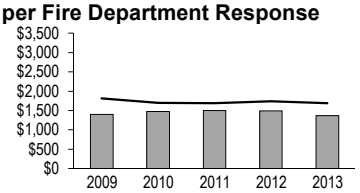
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Salisbury	55	58	68	71	95
Average	65	56	59	64	59

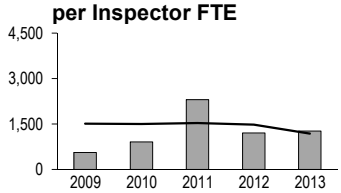
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Salisbury	$1,403	$1,472	$1,500	$1,494	$1,368
Average	$1,818	$1,700	$1,691	$1,737	$1,688

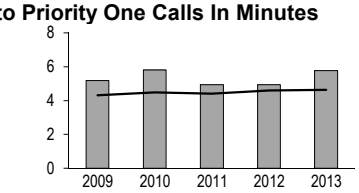
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Salisbury	563	910	2,308	1,201	1,265
Average	1,512	1,505	1,531	1,481	1,183

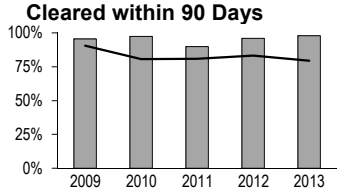
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



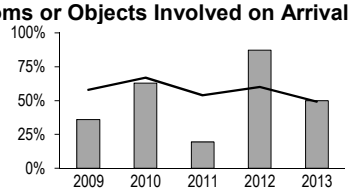
	2009	2010	2011	2012	2013
Salisbury	5.2	5.8	4.9	4.9	5.8
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



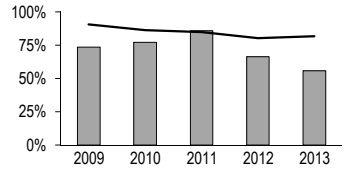
	2009	2010	2011	2012	2013
Salisbury	96%	98%	90%	96%	98%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



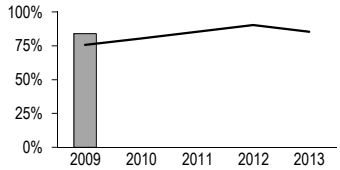
	2009	2010	2011	2012	2013
Salisbury	36%	63%	19%	87%	50%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



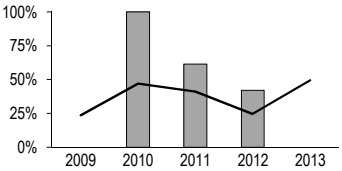
	2009	2010	2011	2012	2013
Salisbury	74%	77%	86%	66%	56%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Salisbury	84%				
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Salisbury		100.0%	61.5%	42.1%	
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Wilmington Fire Department provides the following services in addition to fire suppression and fire prevention for the city of Wilmington: EMS/first response, hazardous materials, high angle and confined rescue, scuba diving, and fire inspection.

The fire department contains the following divisions: fire suppression, fire prevention, and support services.

The city uses a rotating schedule consisting of three shifts of twenty-four hours, with a day off between shifts. This is followed by four days off before the cycle repeats itself.

The city has an ISO rating of 2, as rated in 2005.

The fire department in Wilmington conducted 6,728 fire maintenance, construction, and reinspections during FY 2012–13. The Wilmington Fire Prevention Bureau follows the required inspection schedule for all occupancies within the corporate limits of the city. Each building in an apartment complex is counted as an inspection. Reinspections also are counted as inspections for tracking purposes.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2011)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income U.S. Census 2010	$57,892

Service Profile

FTE Positions—Firefighters	190.0
FTE Positions—Other	30.0
Fire Stations	11
First-Line Fire Apparatus	
Pumpers	12
Aerial Trucks	2
Quints	0
Squads	0
Rescue	1
Other	12
Fire Department Responses	10,540
Responses for Fires	497
Structural Fires Reported	123
Inspections Completed for Maintenance, Construction, and Reinspections	6,728
Fire Code Violations Reported	2,612
Estimated Fire Loss (millions)	$2.71
Amount of Property Protected in Service Area (millions)	$14,215
Number of Fire Education Programs or Events	275

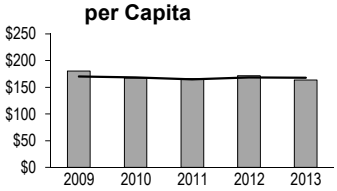
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	71.8%
Operating Costs	22.5%
Capital Costs	5.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$12,883,648
Operating Costs	$4,035,747
Capital Costs	$1,017,199
TOTAL	$17,936,594

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

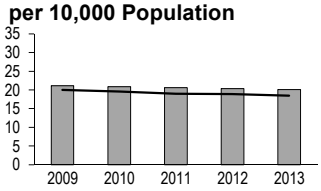
Resource Measures

Fire Services Costs per Capita



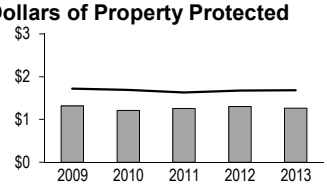
	2009	2010	2011	2012	2013
Wilmington	$180	$167	$166	$171	$164
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	21.1	20.9	20.6	20.3	20.1
Average	20.0	19.6	19.0	18.9	18.5

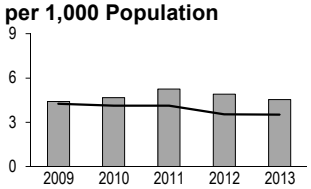
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Wilmington	$1.32	$1.21	$1.26	$1.31	$1.26
Average	$1.72	$1.69	$1.63	$1.67	$1.68

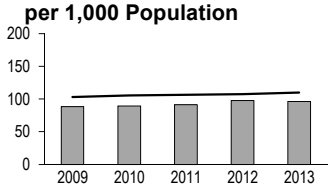
Workload Measures

Actual Fires per 1,000 Population



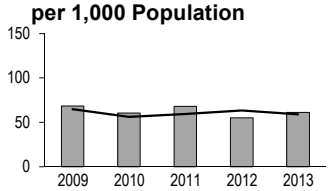
	2009	2010	2011	2012	2013
Wilmington	4.41	4.67	5.25	4.90	4.53
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	88	89	91	98	96
Average	103	105	107	108	110

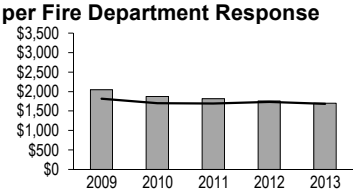
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Wilmington	69	60	68	55	61
Average	65	56	59	64	59

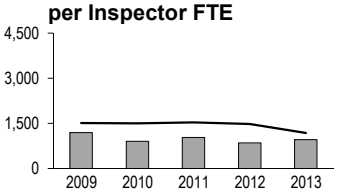
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Wilmington	$2,050	$1,877	$1,818	$1,755	$1,702
Average	$1,818	$1,700	$1,691	$1,737	$1,688

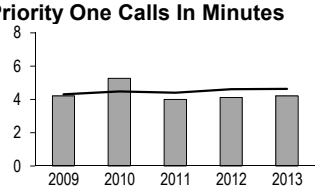
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Wilmington	1,197	910	1,037	853	961
Average	1,512	1,505	1,531	1,481	1,183

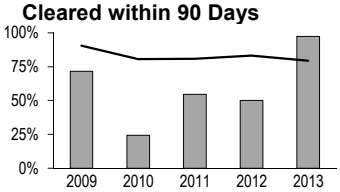
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



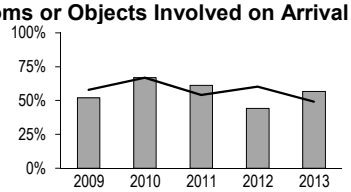
	2009	2010	2011	2012	2013
Wilmington	4.2	5.3	4.0	4.1	4.2
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



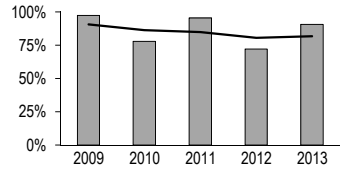
	2009	2010	2011	2012	2013
Wilmington	72%	24%	55%	50%	97%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



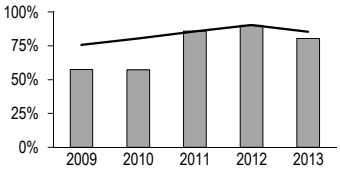
	2009	2010	2011	2012	2013
Wilmington	52%	67%	61%	44%	57%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



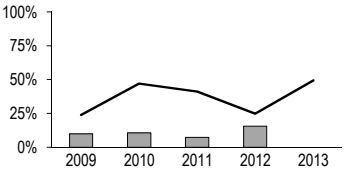
	2009	2010	2011	2012	2013
Wilmington	97%	78%	95%	72%	91%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Wilmington	57%	57%	86%	90%	80%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Wilmington	9.8%	10.5%	7.1%	15.5%	
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wilson Fire/Rescue Services is a public safety organization whose mission is to assist the public in the protection of life and property by minimizing the impact of fire, medical emergencies, and potential disasters or events that affect the community and the environment.

Wilson Fire/Rescue Services has two major divisions. Operations handles emergency responses and equipment maintenance. Support Services handles fire prevention and education, facility maintenance, IM/GIS, and budget.

Firefighters work twenty-four hours on and twenty-four hours off. Each work cycle consists of three twenty-four shifts with a day off between shifts. A four-day break is then provided before the cycle repeats itself.

The city has an ISO rating of 2, as rated in 2005. The Wilson Fire Department has been accredited since 2002.

The fire department in Wilson conducted 4,030 fire maintenance, construction, and reinspections during FY 2012–13. Fire inspections are conducted by the Fire Prevention Bureau on a daily basis. Each inspector is assigned a district in which he or she handles all inspections. A charge is made on the third reinspection.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2011)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Firefighters	84.0
FTE Positions—Other	13.0
Fire Stations	5
First-Line Fire Apparatus	
Pumpers	4
Aerial Trucks	1
Quints	1
Squads	0
Rescue	0
Other	1
Fire Department Responses	3,876
Responses for Fires	224
Structural Fires Reported	41
Inspections Completed for Maintenance, Construction, and Reinspections	4,030
Fire Code Violations Reported	4,292
Estimated Fire Loss (millions)	$2.48
Amount of Property Protected in Service Area (millions)	$3,963
Number of Fire Education Programs or Events	389

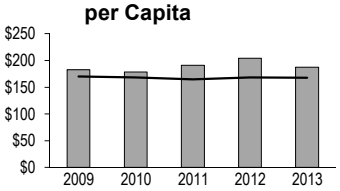
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.6%
Operating Costs	17.3%
Capital Costs	7.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,997,898
Operating Costs	$1,599,437
Capital Costs	$663,594
TOTAL	$9,260,929

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

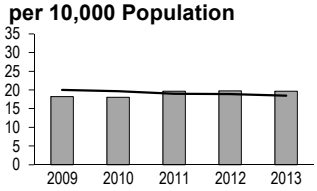
Resource Measures

Fire Services Costs per Capita



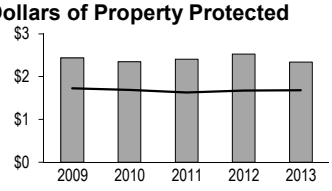
	2009	2010	2011	2012	2013
Wilson	$182	$178	$191	$204	$187
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	18.2	18.0	19.6	19.7	19.6
Average	20.0	19.6	19.0	18.9	18.5

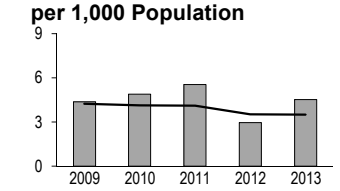
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Wilson	$2.44	$2.35	$2.41	$2.53	$2.34
Average	$1.72	$1.69	$1.63	$1.67	$1.68

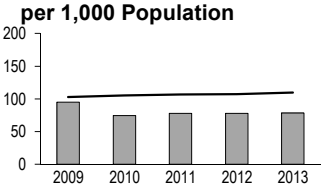
Workload Measures

Actual Fires per 1,000 Population



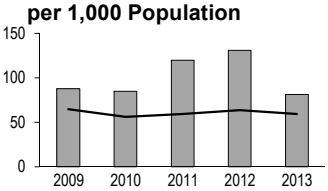
	2009	2010	2011	2012	2013
Wilson	4.38	4.89	5.54	2.97	4.53
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	95	75	78	78	78
Average	103	105	107	108	110

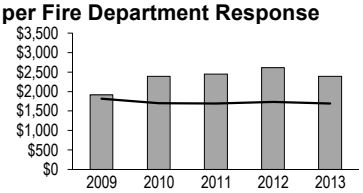
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Wilson	88	85	120	131	82
Average	65	56	59	64	59

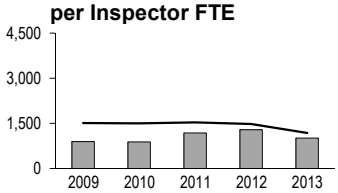
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Wilson	$1,915	$2,391	$2,446	$2,617	$2,389
Average	$1,818	$1,700	$1,691	$1,737	$1,688

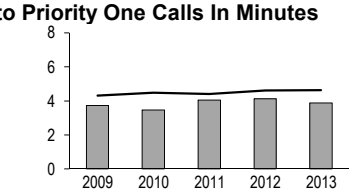
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Wilson	899	880	1,184	1,287	1,008
Average	1,512	1,505	1,531	1,481	1,183

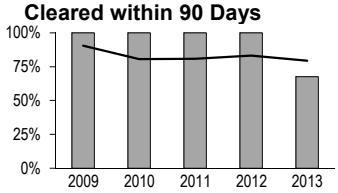
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



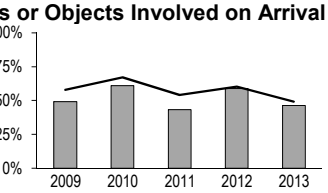
	2009	2010	2011	2012	2013
Wilson	3.7	3.5	4.1	4.1	3.9
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



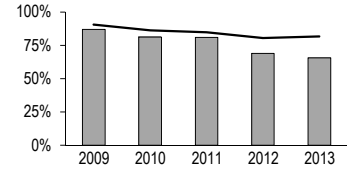
	2009	2010	2011	2012	2013
Wilson	100%	100%	100%	100%	67%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



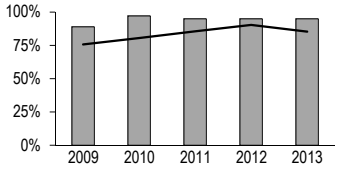
	2009	2010	2011	2012	2013
Wilson	49%	61%	43%	59%	46%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



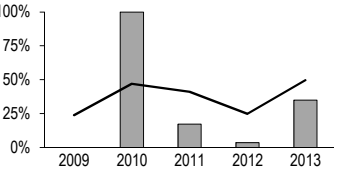
	2009	2010	2011	2012	2013
Wilson	87%	81%	81%	69%	65%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Wilson	89%	97%	95%	95%	95%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Wilson		100.0%	17.1%	3.4%	34.9%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The mission of the Winston-Salem Fire Department is to protect the lives and property of all people within Winston-Salem by reducing the occurrence and minimizing the effects of fires.

The Winston-Salem Fire Department contains the following six divisions: fire suppression, vehicle maintenance, planning, community education, fire prevention, and administration.

Fire suppression personnel work a twenty-one-day cycle with an average of fifty-six hours per week.

The city has an ISO rating of 3, as rated in 2006.

The fire department in Winston-Salem conducted 13,683 fire maintenance, construction, and reinspections during FY 2012–13. The fire department inspection program includes inspections that (1) ensure reasonable life safety conditions within a structure; (2) identify fire hazards; and (3) determine the proper installation, operation, and maintenance of fire protection features, systems, and appliances within buildings. The fire department inspection program involves both the Fire Prevention Bureau and the fire engine companies. Similar to the Fire Prevention Bureau, all fire stations have inspection responsibilities and conduct building inspections within their assigned territories. Each business within the city limits is inspected annually and receives as many return visits as necessary for fire code compliance.

Conditions Affecting Service, Performance, and Costs
Winston-Salem has a high number of inspections per inspector full-time equivalent (FTE) when compared to the other jurisdictions due to the fact that many inspections are performed by fire company personnel. The city defines an inspection as a site interior and/or exterior survey of a building, operation, event, condition, and/or activity for the purpose of verifying fire and building code compliance.

Municipal Profile

Population (OSBM 2011)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491

Service Profile

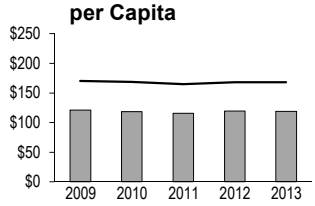
FTE Positions—Firefighters	316.2
FTE Positions—Other	27.8
Fire Stations	19
First-Line Fire Apparatus	
Pumpers	19
Aerial Trucks	5
Quints	0
Squads	0
Rescue	2
Other	13
Fire Department Responses	27,546
Responses for Fires	812
Structural Fires Reported	261
Inspections Completed for Maintenance, Construction, and Reinspections	13,683
Fire Code Violations Reported	9,364
Estimated Fire Loss (millions)	$5.01
Amount of Property Protected in Service Area (millions)	$21,266
Number of Fire Education Programs or Events	693

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	80.3%
Operating Costs	12.4%
Capital Costs	7.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$22,316,230
Operating Costs	$3,456,243
Capital Costs	$2,021,656
TOTAL	$27,794,129

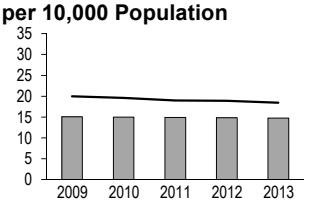
Resource Measures

Fire Services Costs per Capita



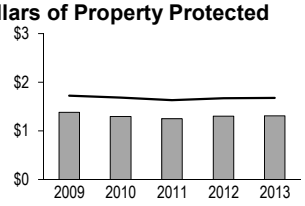
	2009	2010	2011	2012	2013
Winston-Salem	$121	$119	$116	$120	$119
Average	$170	$168	$165	$168	$168

Fire Services Total FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	15.1	14.9	14.9	14.8	14.7
Average	20.0	19.6	19.0	18.9	18.5

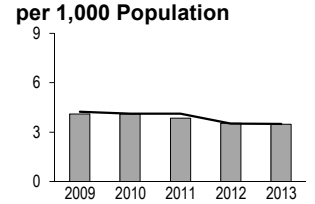
Fire Services Cost per Thousand Dollars of Property Protected



	2009	2010	2011	2012	2013
Winston-Salem	$1.38	$1.30	$1.25	$1.31	$1.31
Average	$1.72	$1.69	$1.63	$1.67	$1.68

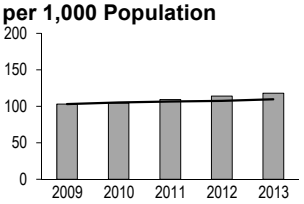
Workload Measures

Actual Fires per 1,000 Population



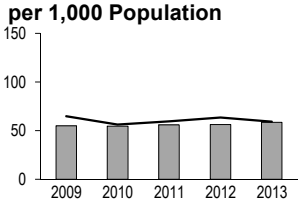
	2009	2010	2011	2012	2013
Winston-Salem	4.10	4.11	3.85	3.55	3.48
Average	4.24	4.13	4.12	3.53	3.51

Fire Department Responses per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	103	104	109	114	118
Average	103	105	107	108	110

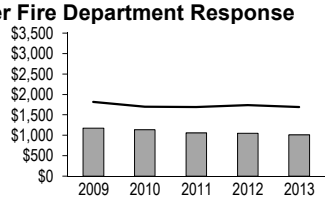
Fire Inspections Completed per 1,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	55	55	56	56	59
Average	65	56	59	64	59

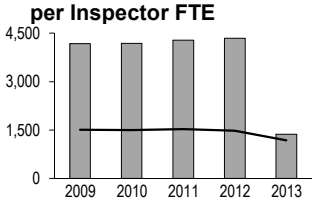
Efficiency Measures

Fire Services Cost per Fire Department Response



	2009	2010	2011	2012	2013
Winston-Salem	$1,172	$1,135	$1,057	$1,048	$1,009
Average	$1,818	$1,700	$1,691	$1,737	$1,688

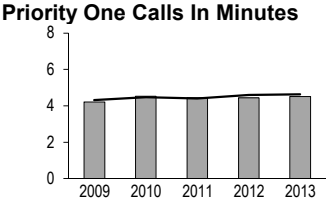
Inspections Completed per Inspector FTE



	2009	2010	2011	2012	2013
Winston-Salem	4,175	4,180	4,280	4,341	1,368
Average	1,512	1,505	1,531	1,481	1,183

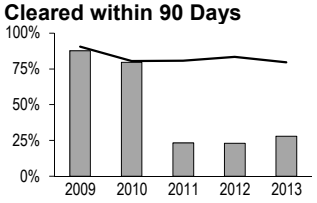
Effectiveness Measures

Average Response Time to Priority One Calls In Minutes



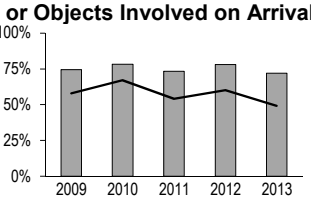
	2009	2010	2011	2012	2013
Winston-Salem	4.2	4.5	4.5	4.5	4.5
Average	4.3	4.5	4.4	4.6	4.6

Percentage of Fire Code Violations Cleared within 90 Days



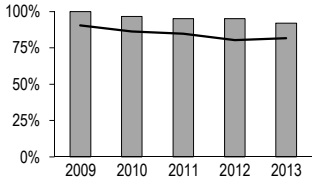
	2009	2010	2011	2012	2013
Winston-Salem	88%	80%	23%	23%	28%
Average	91%	81%	81%	83%	80%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



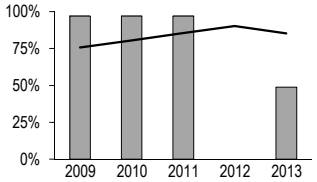
	2009	2010	2011	2012	2013
Winston-Salem	75%	78%	73%	78%	72%
Average	58%	67%	54%	60%	49%

Percentage of Fires for Which Cause Was Determined



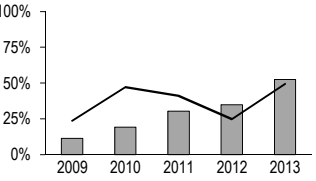
	2009	2010	2011	2012	2013
Winston-Salem	100%	97%	95%	95%	92%
Average	91%	86%	85%	80%	82%

Percentage of Full Response Within 8 Minutes Travel Time



	2009	2010	2011	2012	2013
Winston-Salem	97%	97%	97%		49%
Average	76%	80%	85%	90%	85%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2009	2010	2011	2012	2013
Winston-Salem	11.3%	19.2%	30.4%	34.8%	52.4%
Average	23.7%	47.1%	41.1%	24.7%	49.5%

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

BUILDING INSPECTIONS

UNC
SCHOOL OF
GOVERNMENT

PERFORMANCE MEASURES FOR BUILDING INSPECTIONS

SERVICE DEFINITION

Building inspection services refers to permit issuance and inspections for building, electrical, mechanical (including heating and cooling), and plumbing work on new residential and commercial construction or additions and alterations to enforce the North Carolina State Building Code and related local building regulations. The inspection process includes the receipt of permit applications, review of plans and specifications, issuance of permits, and follow-up field inspections to ensure compliance. Excluded are the enforcement of zoning and subdivision regulations, fire codes, minimum housing codes, erosion and sedimentation control regulations, watershed regulations, historic preservation ordinances, and other development regulations or plans.

NOTES ON PERFORMANCE MEASURES

1. Building Inspections per 1,000 Population

Building inspections are those required by the North Carolina State Building Code for general building, electrical, mechanical (including heating and cooling), and plumbing work associated with construction projects. Inspections include reinspections. They do not include non–building code inspections or consultation visits.

2. Value of Total Building Permits as Percentage of Tax Base of Area Served

When a building permit is issued, the dollar amount of the work specified in the contract(s) authorizing the work is recorded as the value of the building permit. Tax base refers to the taxable valuation used for levying the fiscal year property tax for the area served.

3. Value of Commercial Permits as Percentage of Tax Base of Area Served

Commercial building permits are issued for construction of business, manufacturing, institutional, and other nonresidential buildings or improvements. Tax base is defined above.

4. Cost per Building Inspection and Inspections per Day per Inspector

Building inspections are defined above. Cost is determined using the project's full cost accounting model, including direct, indirect, and capital costs. An inspector full-time equivalent (FTE) is calculated using a work year of 235 days. Inspector FTEs include permanent, temporary, part-time, and full-time inspectors.

5. Value of Building Permits per FTE

Value of building permits is defined above. Inspectors must be certified by the state to enforce the state building code and be able to review plans and conduct inspections to enforce that code. Inspector FTEs exclude supervisors, who may be certified but who spend less than 50 percent of their time performing inspections. Inspector FTEs also exclude support personnel who are not certified.

6. Number of Plan Reviews per Reviewer FTE

The state building code requires that plans and specifications for most commercial and residential construction be reviewed before permits are issued for such construction. Reviewer FTEs are calculated using a 2,080-hour work year, the actual number of plan reviews conducted during the fiscal year, and the number of plan reviewers.

7. Percentage of Inspection Responses within One Working Day of Request

A request for inspection may be made by phone, in person, or in writing. A response refers to at least beginning an inspection, regardless of whether approval of the work occurs. The majority of inspections are completed the same day as initiated. A response to a request within one working day means that the inspection is initiated before the end of the workday following the day on which the request is made.

8. Percentage of Inspections That Are Reinspections

A reinspection occurs when a building inspector must inspect work that has previously been inspected. A reinspection can occur due to problems found in the original inspection or for other reasons.

Building Inspections

Summary of Key Dimensions of Service

City or Town	Area Served (in Square Miles)	Population Growth from 2000 to 2012	Building Inspections by Trade					Number of Plan Reviews	Building Inspector FTEs	Total Staff FTEs
			Building	Electrical	Mechanical	Plumbing	Total			
Apex	34.7	96.8%	10,306	6,177	4,690	4,625	25,798	1,452	5.0	11.0
Asheville	63.0	25.1%	10,171	8,011	6,411	5,551	30,144	3,111	12.0	30.4
Burlington	43.9	14.0%	1,742	2,618	2,124	1,337	7,821	91	5.50	9.00
Cary	66.3	50.6%	26,782	15,209	15,571	11,359	68,921	4,057	19.0	41.6
Durham	296.6	26.5%	31,607	22,315	19,045	13,082	86,049	3,586	23.0	40.0
Greensboro	132.9	22.8%	19,947	13,513	10,298	9,901	53,659	1,011	13.0	27.0
Greenville	97.2	40.7%	4,614	3,595	3,520	2,358	14,087	606	5.0	9.0
High Point	59.3	24.0%	9,864	5,571	4,378	3,520	23,333	952	10.0	17.8
Wilson	63.3	11.3%	1,841	1,677	1,857	922	6,297	212	2.6	5.4
Winston-Salem	396.0	25.5%	15,295	12,587	12,448	8,589	48,919	992	14.0	25.4

EXPLANATORY FACTORS

These are factors that the project found affected building inspection performance and cost in one or more of the municipalities:

Rate of growth and development in city
Size and complexity of construction projects
Geographic area served by county building inspections
Inspectors' enforcement of local development regulations
Emphasis given to plan review in each jurisdiction
Inspector specialization
Organization of the building inspection function

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Town of Apex provides building inspection services though the Building Inspections and Permits Department. The department is organized into two major divisions, building inspections and engineering. The department provides inspections for all of Apex and nearly nineteen square miles of area in its extra-territorial jurisdiction (ETJ).

All building inspectors in Apex serve each of the major trades. The department enforces the North Carolina State Building Code.

The department has a goal of having all inspectors fully qualified for the technical, administrative, and customer service aspects of their job. Training is accomplished primariliy by offsite seminars and conferences offered by state-approved sponsors.

Apex has a standard that all inspection requests recorded by a permit technician or the permit office voice mail by 3 a.m. are to be performed on the next business day.

Total revenue received from inspection fees amounted to $810,571 for FY 2012–13.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

The population served is calculated by adding the population of Apex with the population of the ETJ. The tax base served is calculated by adding the tax base of Apex with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Wake County and multiplying them by the square miles of the ETJ.

Apex does not track multi-family as a category of reporting for inspections or plan reviews. Instead, townhomes are included with residential, and condos and apartments are included with commercial.

Municipal Profile

Population Served	60,752
Land Area Inspected (Square Miles)	34.73
Persons per Square Mile	1,749
Estimated Tax Base in Service Area (billions)	$7.13
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Inspectors	
Building	0.0
Electrical	0.0
Mechanical	0.0
Plumbing	0.0
All Trades	5.0
Total Inspectors	5.0
FTE Plan Reviewers	1.0
Other FTE Positions	5.0
Total of All Positions	11.0
Number of Inspections by Type	
Building	10,306
Electrical	6,177
Mechanical	4,690
Plumbing	4,625
TOTAL	25,798
Building Permit Values	
Residential	$92,464,864
Multi-Family	NA
Commercial	$19,240,364
TOTAL	$111,705,228
Inspection Fee Revenue	$810,571

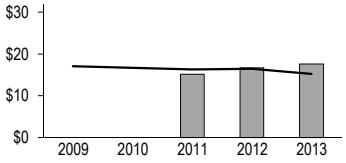
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	77.5%
Operating Costs	16.6%
Capital Costs	5.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$827,790
Operating Costs	$176,902
Capital Costs	$62,821
TOTAL	$1,067,513

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

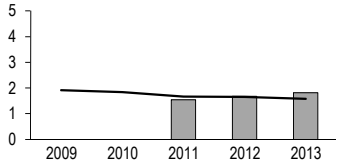
Resource Measures

Building Inspections Services Costs per Capita



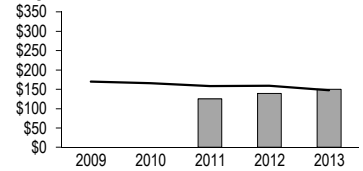
	2009	2010	2011	2012	2013
Apex			$15.15	$16.69	$17.57
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			1.54	1.68	1.81
Average	1.92	1.84	1.66	1.65	1.58

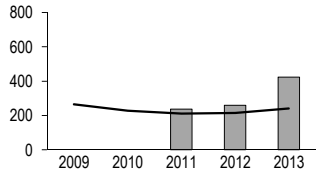
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Apex			$126	$139	$150
Average	$170	$166	$158	$159	$148

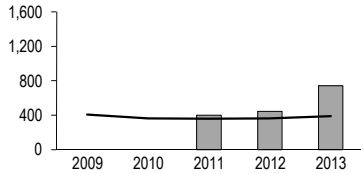
Workload Measures

Inspections per 1,000 Population in Service Area



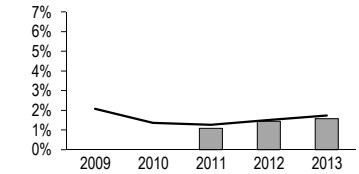
	2009	2010	2011	2012	2013
Apex			237	259	425
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



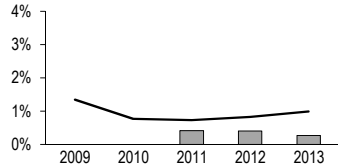
	2009	2010	2011	2012	2013
Apex			400	445	743
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



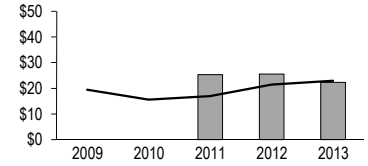
	2009	2010	2011	2012	2013
Apex			1.08%	1.44%	1.57%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Apex			0.41%	0.40%	0.27%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

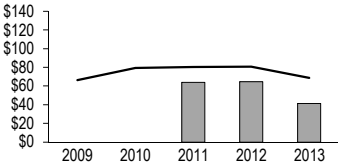
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Apex			$25.3	$25.6	$22.3
Average	$19.4	$15.6	$17.0	$21.5	$23.0

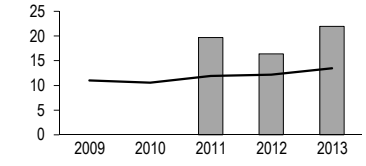
Efficiency Measures

Building Services Cost per Inspection—All Types



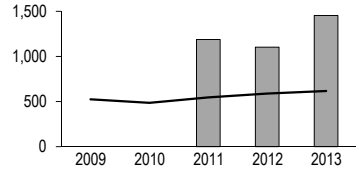
	2009	2010	2011	2012	2013
Apex			$63.80	$64.41	$41.38
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Apex			19.7	16.4	22.0
Average	11.0	10.6	11.9	12.2	13.5

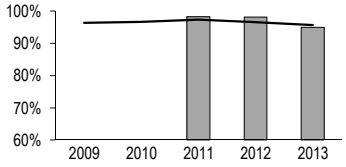
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Apex			1,188	1,102	1,452
Average	525	486	546	587	615

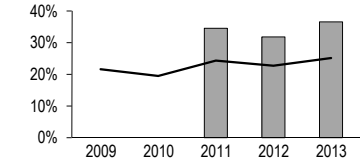
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Apex			98.2%	98.1%	95.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Apex			34.5%	31.8%	36.6%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Asheville Building Safety Department provides building inspection and permitting services to all areas within the Asheville city limits and, beginning in FY 2006–07, its extra-territorial jurisdiction (ETJ).

Inspectors include those who function in all trades and those who are certified in one of the following four trades: building, electrical, plumbing, or mechanical. The city is divided into two geographic areas for commericial inspections, with an inspector from each trade assigned to each area. The city is divided into six areas for inspection of one- and two-family dwellings, with one inspector assigned for each area performing all trades. The Building Safety Department enforces the North Carolina State Building Code and the Asheville Minimum Housing Code. The costs and the positions associated with enforcing the housing code are excluded from the project's performance and cost data.

The department has a goal of twelve training days per inspector per year. Inspectors are required to obtain certification in their primary trade plus two others. A career ladder encourages inspectors to work toward obtaining Level III certification in their primary trade and Level II certification in two other trades. Training is a high priority for the department, with an emphasis on code consistency. Training for contractors and designers also is a high priority for the department.

Asheville's policy is that all calls received for inspection before 7:30 a.m. receive same-day inspection.

Total revenue received from inspection fees amounted to $2.5 million for FY 2012–13. The fee schedule separates fees for each type of permit, with specific fees depending on type of work, cost, square footage, and other factors. One free reinspection is granted per trade per project. Additional inspections are provided for a fee of $75 that must be paid prior to the inspection.

Conditions Affecting Service, Performance, and Costs

The population served is calculated by adding the population of Asheville with the population of the ETJ. The tax base served is calculated by adding the tax base of Asheville with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Buncombe County and multiplying them by the square miles of the ETJ.

The city has many old and historic buildings that are difficult to renovate and bring into compliance with the state code. The city also has days during which snow and ice impact service delivery for this city function.

Municipal Profile

Population Served	92,656
Land Area Inspected (Square Miles)	63.04
Persons per Square Mile	1,470
Estimated Tax Base in Service Area (billions)	$11.78
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Inspectors	
Building	0.0
Electrical	0.0
Mechanical	0.0
Plumbing	0.0
All Trades	12.0
Total Inspectors	12.0
FTE Plan Reviewers	5.0
Other FTE Positions	13.4
Total of All Positions	30.4
Number of Inspections by Type	
Building	10,171
Electrical	8,011
Mechanical	6,411
Plumbing	5,551
TOTAL	30,144
Building Permit Values	
Residential	$67,356,002
Multi-Family	$5,728,000
Commercial	$152,086,984
TOTAL	$225,170,986
Inspection Fee Revenue	$2,503,135

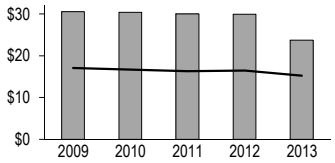
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	68.6%
Operating Costs	22.7%
Capital Costs	8.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,507,385
Operating Costs	$498,267
Capital Costs	$190,800
TOTAL	$2,196,452

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

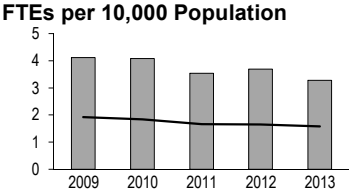
Resource Measures

Building Inspections Services Costs per Capita



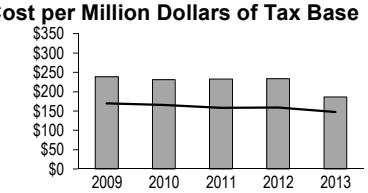
	2009	2010	2011	2012	2013
Asheville	$30.53	$30.37	$29.99	$29.92	$23.71
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	4.12	4.08	3.54	3.69	3.28
Average	1.92	1.84	1.66	1.65	1.58

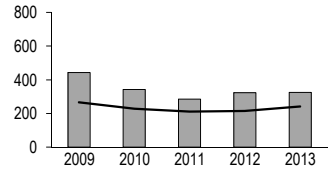
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Asheville	$238	$231	$232	$234	$186
Average	$170	$166	$158	$159	$148

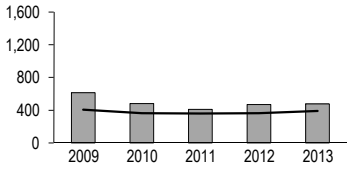
Workload Measures

Inspections per 1,000 Population in Service Area



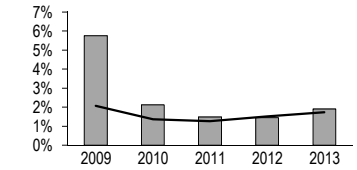
	2009	2010	2011	2012	2013
Asheville	443	343	285	323	325
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



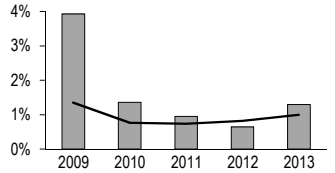
	2009	2010	2011	2012	2013
Asheville	614	482	410	471	478
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



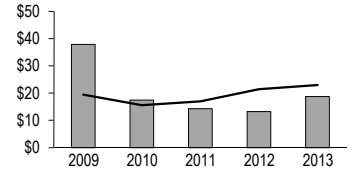
	2009	2010	2011	2012	2013
Asheville	5.76%	2.12%	1.48%	1.45%	1.91%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Asheville	3.92%	1.36%	0.95%	0.64%	1.29%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

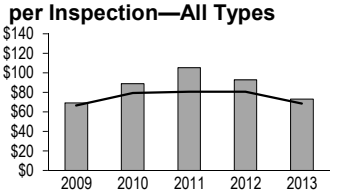
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Asheville	$37.9	$17.5	$14.3	$13.2	$18.8
Average	$19.4	$15.6	$17.0	$21.5	$23.0

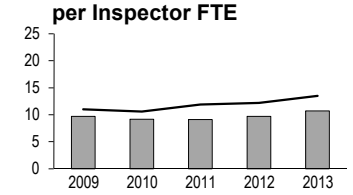
Efficiency Measures

Building Services Cost per Inspection—All Types



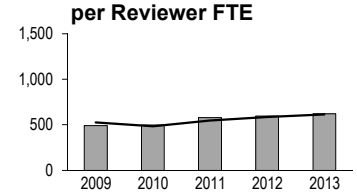
	2009	2010	2011	2012	2013
Asheville	$68.95	$88.62	$105.08	$92.76	$72.87
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Asheville	9.7	9.2	9.1	9.7	10.7
Average	11.0	10.6	11.9	12.2	13.5

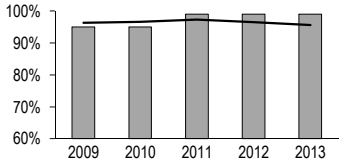
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Asheville	490	500	578	598	622
Average	525	486	546	587	615

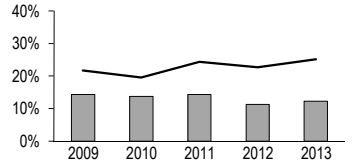
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Asheville	95.0%	95.0%	99.0%	99.0%	99.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Asheville	14.4%	13.7%	14.3%	11.3%	12.3%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Burlington Building Inspections Division is under the Public Works Department. The division provides commercial and residential inspections within city limits and the extra-territorial zoning district properties covering about fourteen square miles outside city boundaries.

The inspections division uses inspectors certified in individual building trades. Training meets the state requirement of six hours a year for each trade.

Burlington does not currently have any standards for the length of time between a request for an inspection and the actual inspection.

Total revenue received from inspection fees amounted to $598,001 for FY 2012–13. The fee schedule separates fees for the type of work. Burlington charges $50 for a third reinspection, $75 for a fourth reinspection, and $100 for any additional reinspections. The number of reinspections for the year was not available.

Conditions Affecting Service, Performance, and Costs

The population served is calculated by adding the population of Burlington with the population of the extra-territorial jurisdiction (ETJ). The tax base served is calculated by adding the tax base of Burlington with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Alamance County and multiplying them by the square miles of the ETJ.

Burlington started residential plan reviews on June 1, 2009.

The broad downturn in the economy over the last several years has reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	55,925
Land Area Inspected (Square Miles)	43.90
Persons per Square Mile	1,274
Estimated Tax Base in Service Area (billions)	$4.55
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Inspectors	
Building	1.0
Electrical	1.0
Mechanical	1.0
Plumbing	1.0
All Trades	1.5
Total Inspectors	5.5
FTE Plan Reviewers	0.5
Other FTE Positions	3.0
Total of All Positions	9.0
Number of Inspections by Type	
Building	1,742
Electrical	2,618
Mechanical	2,124
Plumbing	1,337
TOTAL	7,821
Building Permit Values	
Residential	$17,757,921
Multi-Family	In commercial
Commercial	$95,121,352
TOTAL	$112,879,273
Inspection Fee Revenue	$598,001

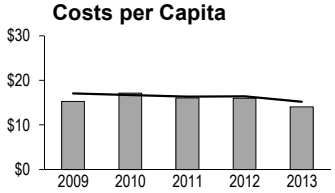
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	76.7%
Operating Costs	14.3%
Capital Costs	9.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$602,523
Operating Costs	$112,356
Capital Costs	$70,508
TOTAL	$785,387

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

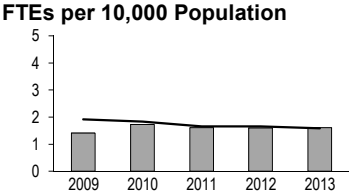
Resource Measures

Building Inspections Services Costs per Capita



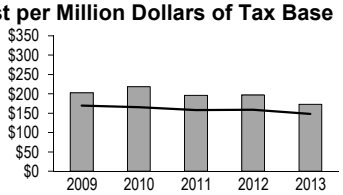
	2009	2010	2011	2012	2013
Burlington	$15.30	$17.11	$16.07	$16.00	$14.04
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	1.41	1.73	1.61	1.60	1.61
Average	1.92	1.84	1.66	1.65	1.58

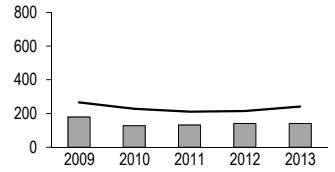
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Burlington	$203	$218	$196	$197	$173
Average	$170	$166	$158	$159	$148

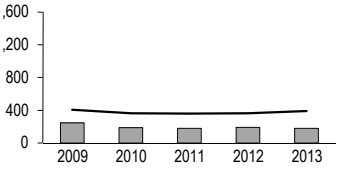
Workload Measures

Inspections per 1,000 Population in Service Area



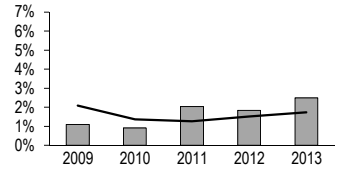
	2009	2010	2011	2012	2013
Burlington	178	128	131	140	140
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



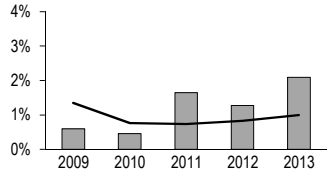
	2009	2010	2011	2012	2013
Burlington	246	187	178	192	178
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



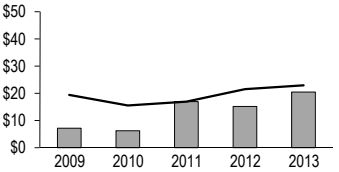
	2009	2010	2011	2012	2013
Burlington	1.10%	0.91%	2.03%	1.84%	2.49%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Burlington	0.59%	0.45%	1.65%	1.28%	2.10%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

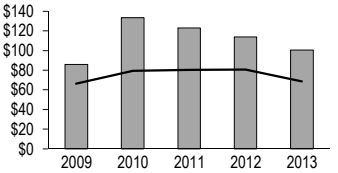
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Burlington	$7.2	$6.3	$17.0	$15.2	$20.5
Average	$19.4	$15.6	$17.0	$21.5	$23.0

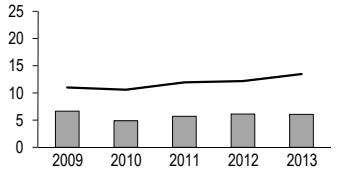
Efficiency Measures

Building Services Cost per Inspection—All Types



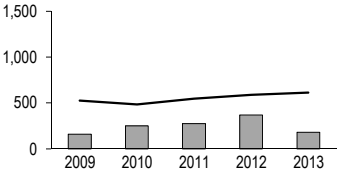
	2009	2010	2011	2012	2013
Burlington	$85.72	$133.40	$122.83	$113.99	$100.42
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Burlington	6.6	4.8	5.7	6.1	6.1
Average	11.0	10.6	11.9	12.2	13.5

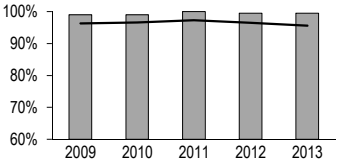
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Burlington	160	252	276	370	182
Average	525	486	546	587	615

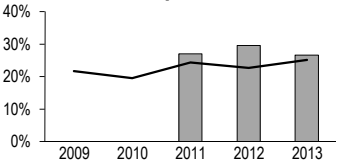
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Burlington	99.0%	99.0%	100.0%	99.5%	99.5%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Burlington			27.0%	29.6%	26.6%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Cary provides building inspection services within its corporate limits and extra-territorial jurisdiction (ETJ) through its inspections and permits department. The department is a full-service entity, meeting all requirements mandated by the N.C. General Statutes. The department consists of two main divisions. The permitting division processes all construction-related permits and related fees. Associated functions include plans review, assigning property addresses, and zoning set-back review. The inspections division performs construction-related inspections to ensure compliance with the North Carolina State Building Code and the building regulations listed in the Town of Cary Code of Ordinances. The town has both single-trade inspectors and all-trade inspectors.

The building permit and inspection process includes the receipt of permit applications, review of plans and specifications, issuance of permits, and follow-up field inspections to ensure compliance. Excluded are the enforcement of zoning and subdivision regulations, fire codes, minimum housing codes, erosion and sedimentation control regulations, watershed regulations, historic preservation ordinances, and other development regulations or plans.

Cary supports both in-house and state-sponsored training classes for inspectors on a regular basis. While in-house field training revolves around peer mentoring, the town's Human Resources Department offers a wide variety of customer service–related classes. The Town's Technology Services Department also supports code enforcement officials by offering regular computer classes through a state-of-the-art computer lab. Code enforcement officials also attend annual workshops and seminars sponsored by the various state inspections trade groups.

Total revenue received from inspection fees amounted to $3.1.million for FY 2012–13. The fee schedule separates fees for each type of permit, with specific fees depending on a minimum amount, square footage, and other factors. Reinspection fees are charged if a violation has been cited and not corrected on the next inspection or if an inspection is scheduled and the work has not been completed.

Conditions Affecting Service, Performance, and Costs

The population served is calculated by adding the population of Cary with the population of the ETJ. The tax base served is calculated by adding the tax base of Cary with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Wake County and multiplying them by the square miles of the ETJ.

The broad downturn in the economy has reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	153,443
Land Area Inspected (Square Miles)	66.29
Persons per Square Mile	2,315
Estimated Tax Base in Service Area (billions)	$22.55
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Inspectors	
Building	7.0
Electrical	4.0
Mechanical	3.0
Plumbing	3.0
All Trades	2.0
Total Inspectors	19.0
FTE Plan Reviewers	4.0
Other FTE Positions	18.6
Total of All Positions	41.6
Number of Inspections by Type	
Building	26,782
Electrical	15,209
Mechanical	15,571
Plumbing	11,359
TOTAL	68,921
Building Permit Values	
Residential	$218,709,792
Multi-Family	$63,177,822
Commercial	$85,310,357
TOTAL	$367,197,971
Inspection Fee Revenue	$3,069,252

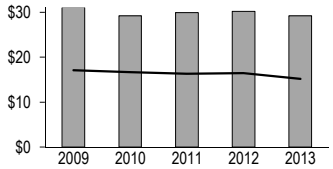
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	78.9%
Operating Costs	16.9%
Capital Costs	4.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,533,606
Operating Costs	$756,708
Capital Costs	$187,988
TOTAL	$4,478,302

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

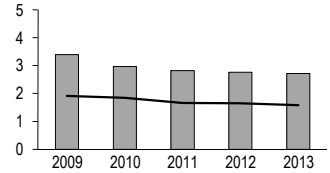
Resource Measures

Building Inspections Services Costs per Capita



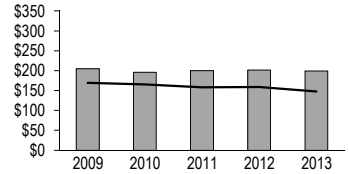
	2009	2010	2011	2012	2013
Cary	$31.62	$29.23	$29.92	$30.17	$29.19
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	3.39	2.97	2.82	2.76	2.71
Average	1.92	1.84	1.66	1.65	1.58

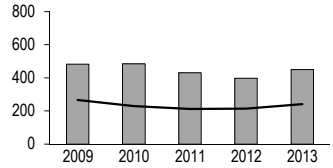
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Cary	$205	$196	$200	$201	$199
Average	$170	$166	$158	$159	$148

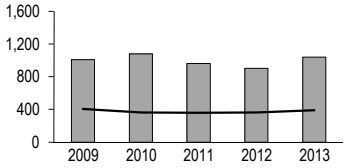
Workload Measures

Inspections per 1,000 Population in Service Area



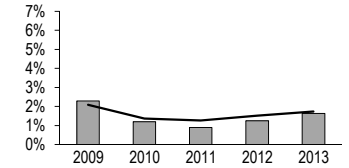
	2009	2010	2011	2012	2013
Cary	483	485	431	397	449
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



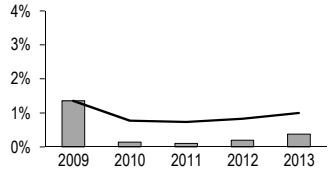
	2009	2010	2011	2012	2013
Cary	1,007	1,080	963	902	1,040
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



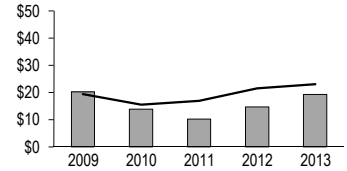
	2009	2010	2011	2012	2013
Cary	2.29%	1.20%	0.89%	1.24%	1.63%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Cary	1.36%	0.14%	0.10%	0.20%	0.38%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

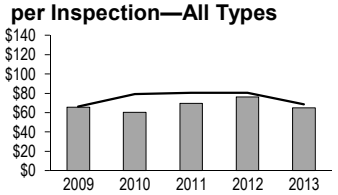
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Cary	$20.2	$13.9	$10.3	$14.8	$19.3
Average	$19.4	$15.6	$17.0	$21.5	$23.0

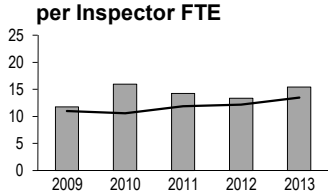
Efficiency Measures

Building Services Cost per Inspection—All Types



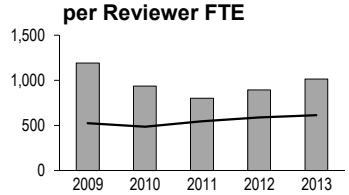
	2009	2010	2011	2012	2013
Cary	$65.50	$60.30	$69.45	$76.07	$64.98
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Cary	11.8	16.0	14.2	13.4	15.4
Average	11.0	10.6	11.9	12.2	13.5

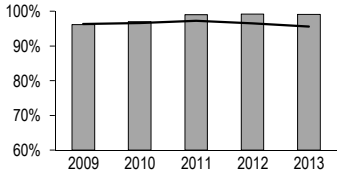
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Cary	1,192	936	801	893	1,014
Average	525	486	546	587	615

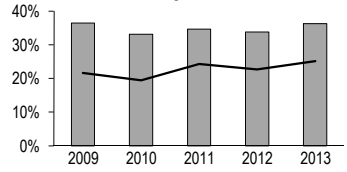
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Cary	96.2%	97.0%	99.0%	99.2%	99.1%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Cary	36.5%	33.2%	34.7%	33.9%	36.3%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Durham City/County Inspections Department provides building inspection services throughout the county, including the city of Durham. Although the department's director reports to both the city and county managers, the department follows the personnel policies of the city. The county funds a percentage of the department's budget based on the percentage of permits issued in the county.

Inspectors are certified in one of the following four trades and are required to have Level III certification: building, electrical, mechanical, or plumbing. Inspectors drive to and from inspection sites in city-owned vehicles. The department enforces the merged city/county zoning ordinance as well as the North Carolina State Building Code, although the costs and the positions associated with enforcing the zoning ordinance are excluded from the project's performance and cost data.

Durham's policy is that 90 percent of inspections are to be conducted within one working day of request.

Total revenue received from inspection fees amounted to $4,452,868 for FY 2012–13. The fee schedule separates fees for each type of permit, with specific fees depending on type of facility of work, cost, square footage, and other factors. If an inspection has been disapproved and the contractor calls for a reinspection and the corrections have not been made, $100 is charged. If the second reinspection is called and the problem still has not been corrected, $200 is charged. If the third reinspection is called for and the corrections have still not been made, $300 is charged.

Conditions Affecting Service, Performance, and Costs

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population Served	280,921
Land Area Inspected (Square Miles)	296.60
Persons per Square Mile	947
Estimated Tax Base in Service Area (billions)	
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Inspectors	
Building	7.0
Electrical	8.0
Mechanical	5.0
Plumbing	3.0
All Trades	0.0
Total Inspectors	23.0
FTE Plan Reviewers	4.0
Other FTE Positions	13.0
Total of All Positions	40.0
Number of Inspections by Type	
Building	31,607
Electrical	22,315
Mechanical	19,045
Plumbing	13,082
TOTAL	86,049
Building Permit Values	
Residential	$391,314,907
Multi-Family	NA
Commercial	$521,216,758
TOTAL	$912,531,665
Inspection Fee Revenue	$4,452,868

Full Cost Profile

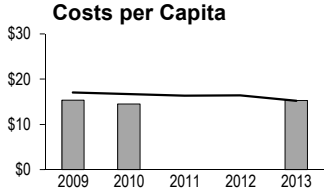
Cost Breakdown by Percentage	
Personal Services	71.7%
Operating Costs	23.5%
Capital Costs	4.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,073,806
Operating Costs	$1,006,607
Capital Costs	$204,507
TOTAL	$4,284,920

Durham — Building Inspections

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

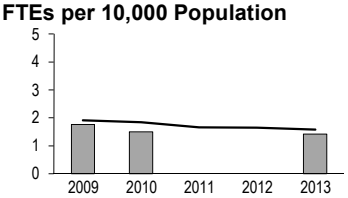
Resource Measures

Building Inspections Services Costs per Capita



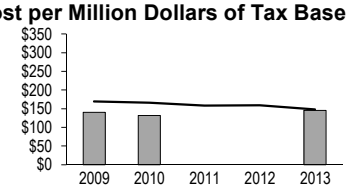
	2009	2010	2011	2012	2013
Durham	$15.35	$14.48			$15.25
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	1.77	1.50			1.42
Average	1.92	1.84	1.66	1.65	1.58

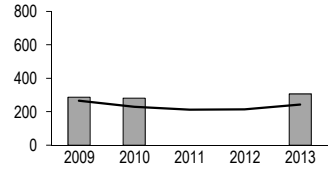
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Durham	$140	$132			$145
Average	$170	$166	$158	$159	$148

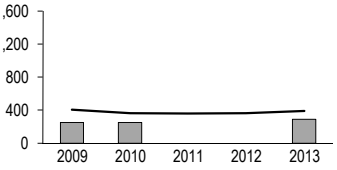
Workload Measures

Inspections per 1,000 Population in Service Area



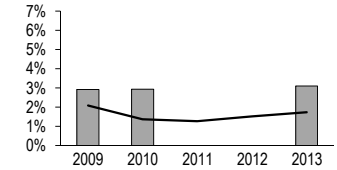
	2009	2010	2011	2012	2013
Durham	286	280			306
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



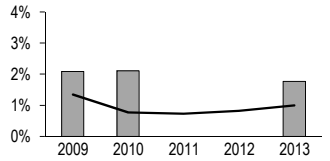
	2009	2010	2011	2012	2013
Durham	250	251			290
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



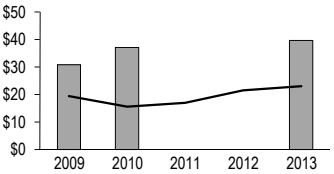
	2009	2010	2011	2012	2013
Durham	2.91%	2.94%			3.09%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Durham	2.09%	2.11%			1.77%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

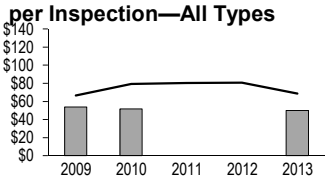
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Durham	$30.8	$37.1			$39.7
Average	$19.4	$15.6	$17.0	$21.5	$23.0

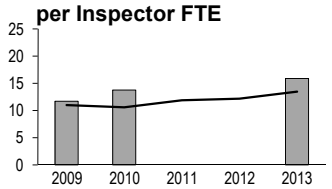
Efficiency Measures

Building Services Cost per Inspection—All Types



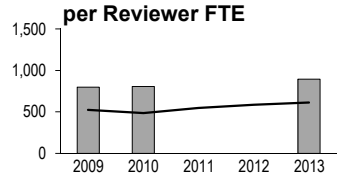
	2009	2010	2011	2012	2013
Durham	$53.67	$51.63			$49.80
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Durham	11.7	13.8			15.9
Average	11.0	10.6	11.9	12.2	13.5

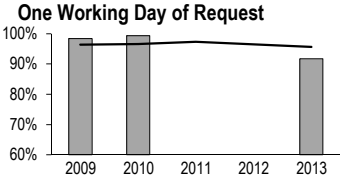
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Durham	799	805			897
Average	525	486	546	587	615

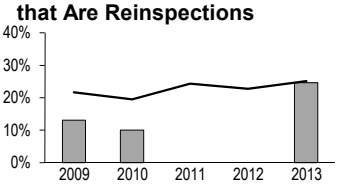
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Durham	98.4%	99.3%			91.7%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Durham	13.1%	10.0%			24.6%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Inspections is a division of the Engineering and Inspections Department of the City of Greensboro. The inspections division consists of plans review, building inspections, plumbing inspections, mechanical inspections, electrical inspections, and local code enforcement. The city services the incorporated portion of the city but not the extra-territorial jurisdiction areas.

Trade inspectors are required to attain a Level III certification of their primary building trade within two years. Mechanical and plumbing inspectors are required to attain a secondary certification. Local ordinance inspectors are required to attain a Level I certification. All certified inspectors are required to take and pass a law and administrative course.

All requests for inspections are responded to within forty-eight hours or less. Nearly all requests are called into the city's automated system or entered via its website.

Total revenue received from inspection fees amounted to $2.1 million for FY 2012–13. If a request for inspection is made and the job is not ready or corrections have not been made, a $45 fee for each reinspection is assessed.

Conditions Affecting Service, Performance, and Costs
The broad downturn in the economy has reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	275,048
Land Area Inspected (Square Miles)	132.90
Persons per Square Mile	2,070
Estimated Tax Base in Service Area (billions)	$24.41
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Inspectors	
Building	5.0
Electrical	3.0
Mechanical	2.0
Plumbing	3.0
All Trades	0.0
Total Inspectors	13.0
FTE Plan Reviewers	4.5
Other FTE Positions	9.5
Total of All Positions	27.0
Number of Inspections by Type	
Building	19,947
Electrical	13,513
Mechanical	10,298
Plumbing	9,901
TOTAL	53,659
Building Permit Values	
Residential	$83,936,842
Multi-Family	$29,268,127
Commercial	$244,430,222
TOTAL	$357,635,191
Inspection Fee Revenue	$2,079,780

Full Cost Profile

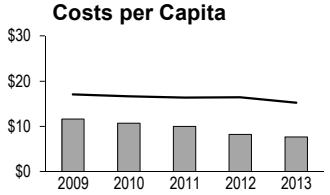
Cost Breakdown by Percentage	
Personal Services	78.3%
Operating Costs	21.7%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,646,830
Operating Costs	$456,606
Capital Costs	$0
TOTAL	$2,103,436

Greensboro Building Inspections

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

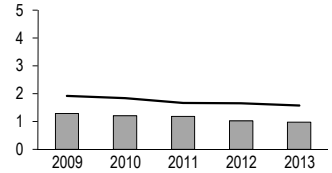
Resource Measures

Building Inspections Services Costs per Capita



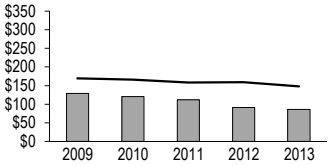
	2009	2010	2011	2012	2013
Greensboro	$11.63	$10.72	$10.00	$8.21	$7.65
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.29	1.21	1.18	1.03	0.98
Average	1.92	1.84	1.66	1.65	1.58

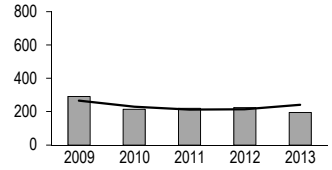
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Greensboro	$129	$120	$112	$92	$86
Average	$170	$166	$158	$159	$148

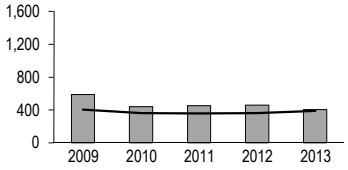
Workload Measures

Inspections per 1,000 Population in Service Area



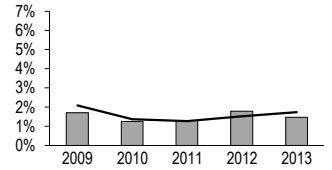
	2009	2010	2011	2012	2013
Greensboro	290	214	220	224	195
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



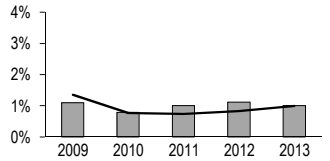
	2009	2010	2011	2012	2013
Greensboro	588	441	451	461	404
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



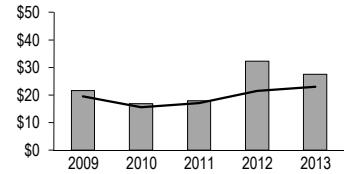
	2009	2010	2011	2012	2013
Greensboro	1.70%	1.25%	1.30%	1.78%	1.47%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Greensboro	1.10%	0.79%	1.00%	1.12%	1.00%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

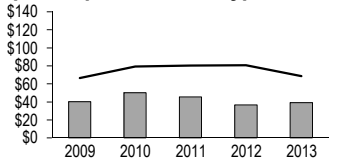
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Greensboro	$21.6	$16.9	$17.9	$32.2	$27.5
Average	$19.4	$15.6	$17.0	$21.5	$23.0

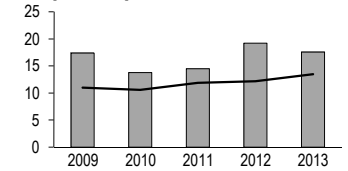
Efficiency Measures

Building Services Cost per Inspection—All Types



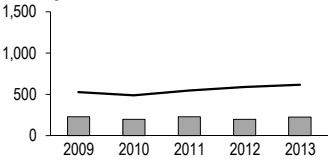
	2009	2010	2011	2012	2013
Greensboro	$40.13	$50.16	$45.42	$36.69	$39.20
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Greensboro	17.4	13.7	14.5	19.2	17.6
Average	11.0	10.6	11.9	12.2	13.5

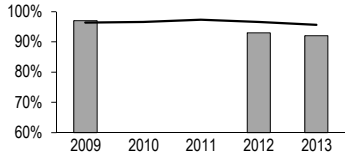
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Greensboro	226	195	226	198	225
Average	525	486	546	587	615

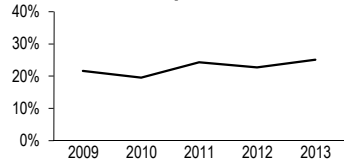
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Greensboro	97.0%			93.0%	92.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Greensboro					
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Greenville provides detailed inspections services within city limits and its extra-territorial jurisdiction (ETJ). The city provides building, plumbing, electrical, and mechanical code enforcement services.

Total revenue received from inspection fees amounted to $684,652 for FY 2012–13. Inspection and permit fees depend on the type of construction or work, value of construction, and other factors.

Conditions Affecting Service, Performance, and Costs
The population served is calculated by adding the population of Greenville with the population of the ETJ. The tax base served is calculated by adding the tax base of Greenville with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Pitt County and multiplying them by the square miles of the ETJ.

The downturn in the economy over the past several years has decreased the demand for inspections services.

Municipal Profile

Population Served	138,062
Land Area Inspected (Square Miles)	97.19
Persons per Square Mile	1,421
Estimated Tax Base in Service Area (billions)	$7.77
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Inspectors	
Building	0.0
Electrical	0.0
Mechanical	0.0
Plumbing	0.0
All Trades	5.0
Total Inspectors	5.0
FTE Plan Reviewers	0.0
Other FTE Positions	4.0
Total of All Positions	9.0
Number of Inspections by Type	
Building	4,614
Electrical	3,595
Mechanical	3,520
Plumbing	2,358
TOTAL	14,087
Building Permit Values	
Residential	$27,339,780
Multi-Family	$5,471,105
Commercial	$22,832,853
TOTAL	$55,643,738
Inspection Fee Revenue	$684,652

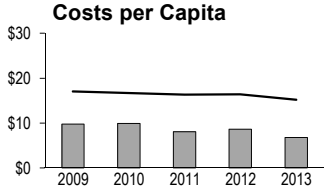
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	76.3%
Operating Costs	17.7%
Capital Costs	5.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$714,241
Operating Costs	$165,981
Capital Costs	$55,679
TOTAL	$935,901

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

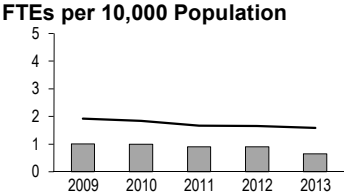
Resource Measures

Building Inspections Services Costs per Capita



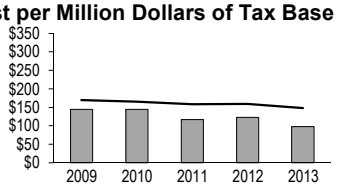
	2009	2010	2011	2012	2013
Greenville	$9.77	$9.89	$8.04	$8.61	$6.78
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	1.01	0.99	0.90	0.90	0.65
Average	1.92	1.84	1.66	1.65	1.58

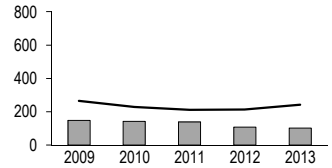
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Greenville	$145	$145	$117	$123	$97
Average	$170	$166	$158	$159	$148

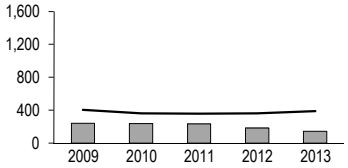
Workload Measures

Inspections per 1,000 Population in Service Area



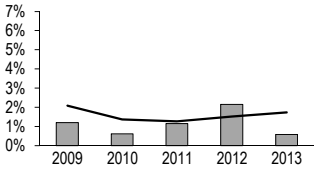
	2009	2010	2011	2012	2013
Greenville	149	142	139	108	102
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



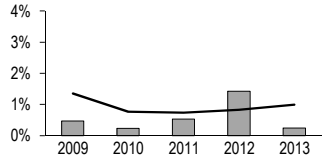
	2009	2010	2011	2012	2013
Greenville	243	237	234	182	145
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



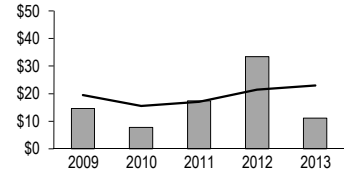
	2009	2010	2011	2012	2013
Greenville	1.20%	0.61%	1.14%	2.15%	0.58%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Greenville	0.47%	0.23%	0.53%	1.42%	0.24%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

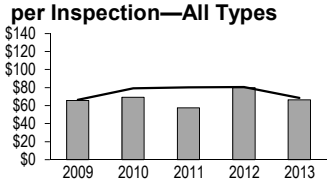
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Greenville	$14.6	$7.7	$17.4	$33.5	$11.1
Average	$19.4	$15.6	$17.0	$21.5	$23.0

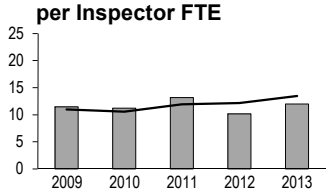
Efficiency Measures

Building Services Cost per Inspection—All Types



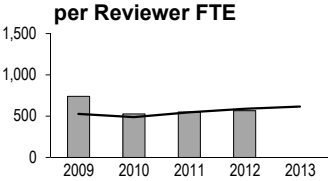
	2009	2010	2011	2012	2013
Greenville	$65.61	$69.41	$57.62	$79.84	$66.44
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Greenville	11.5	11.2	13.1	10.2	12.0
Average	11.0	10.6	11.9	12.2	13.5

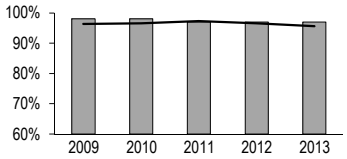
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Greenville	738	526	550	563	
Average	525	486	546	587	615

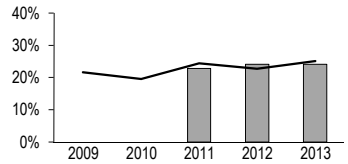
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Greenville	98.0%	98.0%	97.0%	97.0%	97.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Greenville			22.8%	24.1%	24.1%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The inspections department of High Point provides building, plumbing, electrical, and mechanical code enforcement services to the incorporated area of the city in addition to a small portion of the rural/suburban extra-territorial jurisdiction (ETJ) within Guilford County.

Fire inspections and permit records are maintained by the inspections department, but fire inspections are performed by fire marshals. The department also has a local codes division, which enforces zoning, housing, public nuisance, and vehicle codes. This staff was not included in this report.

Inspectors are required to complete a level of training prior to receiving individual assignments. Prior to completing the required training, employees must work under the direct supervision of their supervisor or assigned employees. Training includes formal classroom and on-the-job training in code enforcement, technical codes, related state and local code laws, safety, and personnel regulations. All inspection requests received by midnight are inspected the next business day.

Total revenue received from inspection fees amounted to $696,034 for FY 2012–13. Inspection and permit fees depend on the type of construction or work, value of construction, and other factors.

Conditions Affecting Service, Performance, and Costs

The population served is calculated by adding the population of High Point with the population of the ETJ. The tax base served is calculated by adding the tax base of High Point with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Guilford County and multiplying them by the square miles of the ETJ.

The broad downturn in the economy has reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	109,361
Land Area Inspected (Square Miles)	59.33
Persons per Square Mile	1,843
Estimated Tax Base in Service Area (billions)	$9.54
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Inspectors	
Building	3.5
Electrical	2.5
Mechanical	2.5
Plumbing	1.5
All Trades	0.0
Total Inspectors	10.0
FTE Plan Reviewers	1.8
Other FTE Positions	6.0
Total of All Positions	17.8
Number of Inspections by Type	
Building	9,864
Electrical	5,571
Mechanical	4,378
Plumbing	3,520
TOTAL	23,333
Building Permit Values	
Residential	$55,322,526
Multi-Family	In commercial
Commercial	$111,225,874
TOTAL	$166,548,400
Inspection Fee Revenue	$696,034

Full Cost Profile

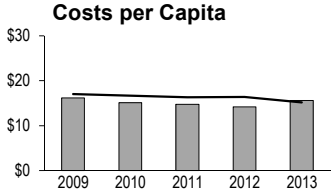
Cost Breakdown by Percentage	
Personal Services	74.1%
Operating Costs	20.8%
Capital Costs	5.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,268,282
Operating Costs	$355,476
Capital Costs	$86,798
TOTAL	$1,710,556

High Point — Building Inspections

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

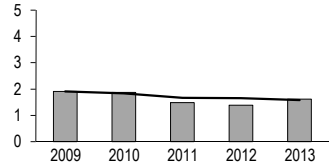
Resource Measures

Building Inspections Services Costs per Capita



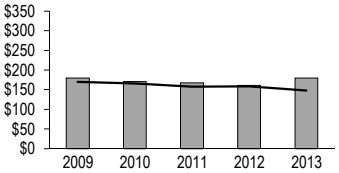
	2009	2010	2011	2012	2013
High Point	$16.17	$15.12	$14.74	$14.18	$15.64
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	1.91	1.88	1.49	1.38	1.62
Average	1.92	1.84	1.66	1.65	1.58

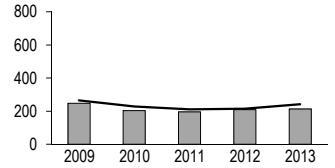
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
High Point	$180	$171	$168	$161	$179
Average	$170	$166	$158	$159	$148

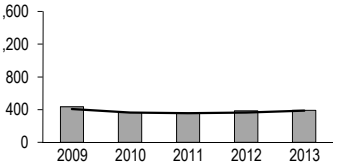
Workload Measures

Inspections per 1,000 Population in Service Area



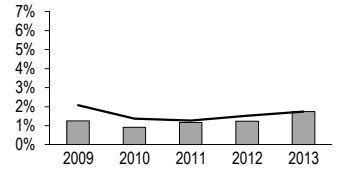
	2009	2010	2011	2012	2013
High Point	247	202	196	209	213
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



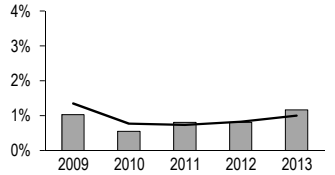
	2009	2010	2011	2012	2013
High Point	437	364	357	382	393
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



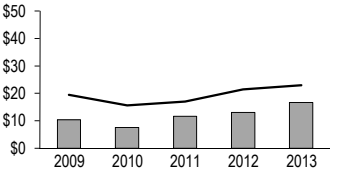
	2009	2010	2011	2012	2013
High Point	1.26%	0.92%	1.17%	1.23%	1.75%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
High Point	1.03%	0.54%	0.81%	0.80%	1.17%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

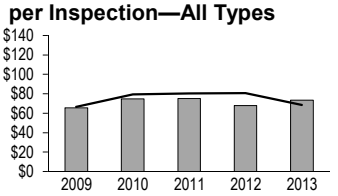
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
High Point	$10.3	$7.6	$11.6	$13.1	$16.7
Average	$19.4	$15.6	$17.0	$21.5	$23.0

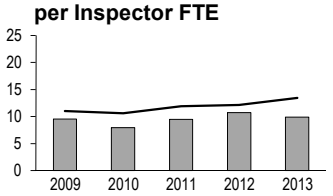
Efficiency Measures

Building Services Cost per Inspection—All Types



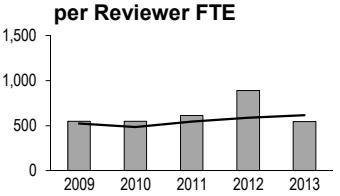
	2009	2010	2011	2012	2013
High Point	$65.47	$74.72	$75.12	$67.87	$73.31
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
High Point	9.6	8.0	9.5	10.7	9.9
Average	11.0	10.6	11.9	12.2	13.5

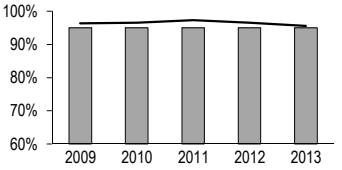
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
High Point	547	549	611	890	544
Average	525	486	546	587	615

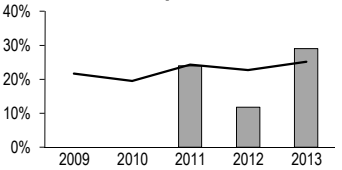
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
High Point	95.0%	95.0%	95.0%	95.0%	95.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
High Point			23.9%	11.8%	29.0%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Wilson's inspection team serves the area within the city's corporate limits and the extra-territorial zoning jurisdiction (ETJ) that is approximately one mile beyond city limits.

Inspection services are currently provided by three inspectors, one field supervisor, and the inspections divisions manager. Two permit technicians provide support to this function. For commercial jobs, each inspector is assigned a primary inspection field. For residential jobs, inspectors hold certificates in all trade areas. Fire inspections are typically handled by certified inspectors in the fire department but are occasionally conducted by building inspectors who have fire inspection certification.

It is the policy of the inspection work team to respond to an inspection request on the same working day if the request is made prior to 8:30 a.m. and to respond to an inspection request by the following working day if the request is made after 8:30 a.m. Most inspections are completed on the same day the request is made.

Total revenue received from inspection fees was not available for FY 2012–13. Inspection and permit fees depend on the type of construction or work, the value of construction, and other factors. A reinspection fee is assessed when making an inspection for the same trade that had been previously rejected.

Conditions Affecting Service, Performance, and Costs
The population served is calculated by adding the population of Wilson with the population of the ETJ. The tax base served is calculated by adding the tax base of Wilson with the tax base of the ETJ. The population and the tax base of the ETJ are calculated by taking the population and tax base per square mile of Wilson County and multiplying them by the square miles of the ETJ.

The broad downturn in the economy had reduced building activity and the number of requests for inspections particularly in the earlier years.

Municipal Profile

Population Served	55,430
Land Area Inspected (Square Miles)	63.30
Persons per Square Mile	876
Estimated Tax Base in Service Area (billions)	$4.43
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Inspectors	
Building	0.0
Electrical	0.0
Mechanical	0.0
Plumbing	0.0
All Trades	2.6
Total Inspectors	2.6
FTE Plan Reviewers	0.8
Other FTE Positions	2.0
Total of All Positions	5.4
Number of Inspections by Type	
Building	1,841
Electrical	1,677
Mechanical	1,857
Plumbing	922
TOTAL	6,297
Building Permit Values	
Residential	$26,897,427
Multi-Family	$3,345,744
Commercial	$52,721,172
TOTAL	$82,964,343
Inspection Fee Revenue	NA

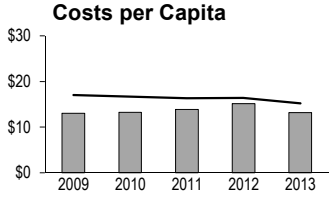
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	74.4%
Operating Costs	19.4%
Capital Costs	6.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$544,199
Operating Costs	$141,906
Capital Costs	$44,929
TOTAL	$731,034

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

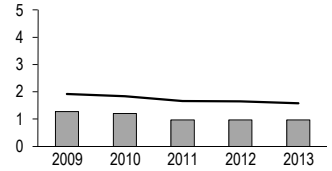
Resource Measures

Building Inspections Services Costs per Capita



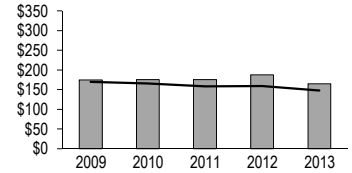
	2009	2010	2011	2012	2013
Wilson	$13.01	$13.26	$13.91	$15.11	$13.19
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	1.28	1.21	0.97	0.97	0.97
Average	1.92	1.84	1.66	1.65	1.58

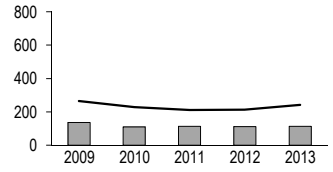
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Wilson	$174	$175	$176	$188	$165
Average	$170	$166	$158	$159	$148

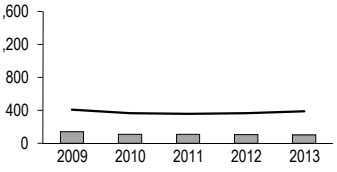
Workload Measures

Inspections per 1,000 Population in Service Area



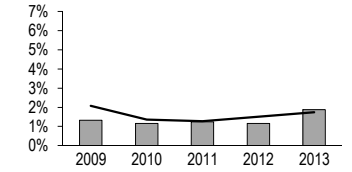
	2009	2010	2011	2012	2013
Wilson	136	110	114	111	114
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



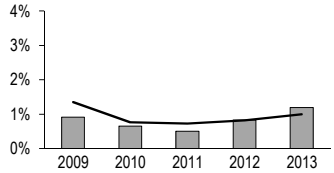
	2009	2010	2011	2012	2013
Wilson	138	110	109	106	99
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



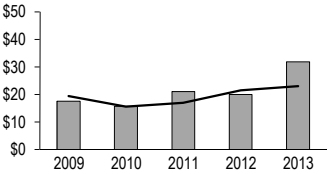
	2009	2010	2011	2012	2013
Wilson	1.33%	1.16%	1.25%	1.16%	1.87%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Wilson	0.92%	0.65%	0.50%	0.83%	1.19%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

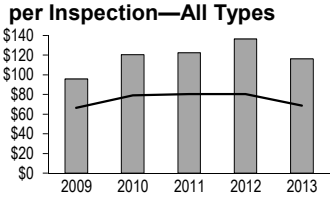
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Wilson	$17.6	$15.8	$21.1	$20.0	$31.9
Average	$19.4	$15.6	$17.0	$21.5	$23.0

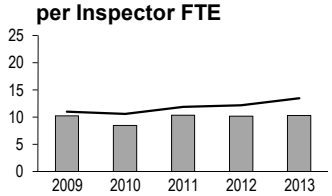
Efficiency Measures

Building Services Cost per Inspection—All Types



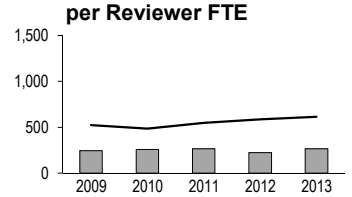
	2009	2010	2011	2012	2013
Wilson	$95.78	$120.39	$122.46	$136.23	$116.09
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Wilson	10.3	8.5	10.3	10.2	10.3
Average	11.0	10.6	11.9	12.2	13.5

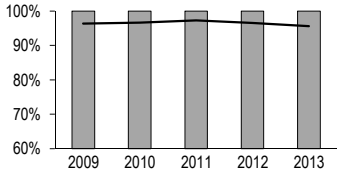
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Wilson	245	260	265	224	265
Average	525	486	546	587	615

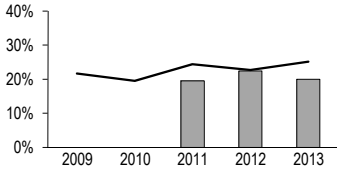
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Wilson	100.0%	100.0%	100.0%	100.0%	100.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Wilson			19.4%	22.4%	19.9%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Inspections Division is a combined program for Winston-Salem and Forsyth County, providing building inspections services for all areas of the county, with the exception of the Town of Kernersville.

Inspectors are certified in one of the following four trades: building, electrical, mechanical, or plumbing. Inspectors drive to and from inspection sites in city-owned vehicles. Besides the North Carolina State Building Code, the Inspections Division enforces zoning codes and soil and sedimentation control regulations. Full-time equivalent positions and costs for these responsibilities are excluded from the project's figures for building inspections.

It is the policy of the Inspections Division to respond to inspection requests within one working day; 90 percent of the time it achieves this goal.

Total revenue received from inspection fees amounted to $2.52 million for FY 2012–13. Inspection and permit fees depend on the type of construction or work, value of the construction, and other factors. An extra trip charge of $40 is assessed for each reinspection due to a second and subsequent failed inspection on each permit.

Conditions Affecting Service, Performance, and Costs
The broad downturn in the economy has reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	333,718
Land Area Inspected (Square Miles)	396.00
Persons per Square Mile	843
Estimated Tax Base in Service Area (billions)	$31.31
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Inspectors	
Building	4.0
Electrical	3.0
Mechanical	4.0
Plumbing	3.0
All Trades	0.0
Total Inspectors	14.0
FTE Plan Reviewers	3.0
Other FTE Positions	8.4
Total of All Positions	25.4
Number of Inspections by Type	
Building	15,295
Electrical	12,587
Mechanical	12,448
Plumbing	8,589
TOTAL	48,919
Building Permit Values	
Residential	$138,013,264
Multi-Family	In residential
Commercial	$173,097,374
TOTAL	$311,110,638
Inspection Fee Revenue	$2,522,503

Full Cost Profile

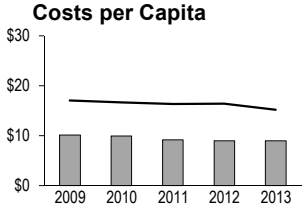
Cost Breakdown by Percentage	
Personal Services	59.4%
Operating Costs	33.9%
Capital Costs	6.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,783,537
Operating Costs	$1,015,928
Capital Costs	$201,789
TOTAL	$3,001,254

Winston-Salem Building Inspections

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

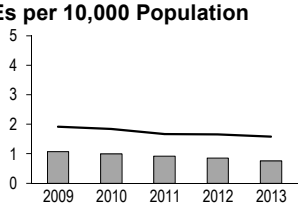
Resource Measures

Building Inspections Services Costs per Capita



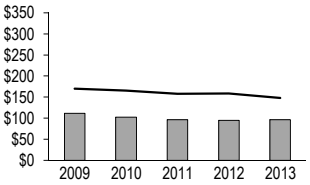
	2009	2010	2011	2012	2013
Winston-Salem	$10.12	$9.90	$9.19	$8.95	$8.99
Average	$17.06	$16.68	$16.33	$16.43	$15.20

Building Inspections Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	1.07	0.99	0.92	0.86	0.76
Average	1.92	1.84	1.66	1.65	1.58

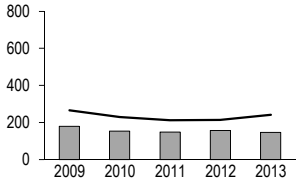
Building Inspections Services Cost per Million Dollars of Tax Base



	2009	2010	2011	2012	2013
Winston-Salem	$111	$102	$96	$95	$96
Average	$170	$166	$158	$159	$148

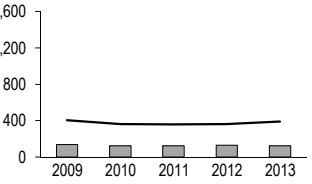
Workload Measures

Inspections per 1,000 Population in Service Area



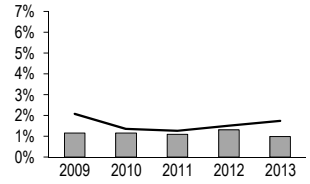
	2009	2010	2011	2012	2013
Winston-Salem	178	153	148	157	147
Average	266	229	211	214	242

Inspections per Square Mile in Service Area



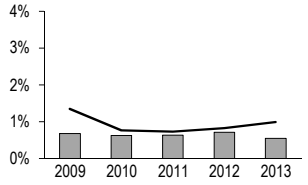
	2009	2010	2011	2012	2013
Winston-Salem	138	125	123	133	124
Average	407	364	358	364	389

Value of Building Permits as Percentage of Tax Base of Area Served



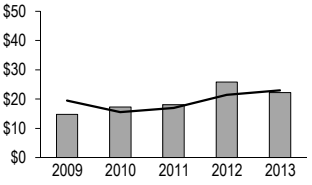
	2009	2010	2011	2012	2013
Winston-Salem	1.16%	1.16%	1.09%	1.32%	0.99%
Average	2.08%	1.36%	1.27%	1.51%	1.74%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2009	2010	2011	2012	2013
Winston-Salem	0.68%	0.63%	0.63%	0.72%	0.55%
Average	1.35%	0.77%	0.73%	0.82%	1.00%

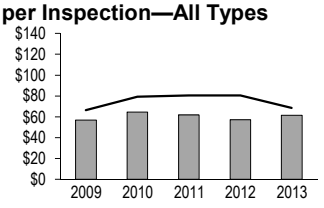
Value of Building Permits Per Inspector FTE In Millions of Dollars



	2009	2010	2011	2012	2013
Winston-Salem	$14.7	$17.3	$18.0	$25.8	$22.2
Average	$19.4	$15.6	$17.0	$21.5	$23.0

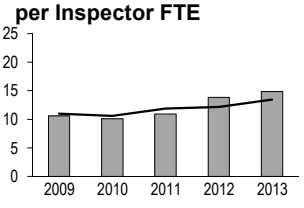
Efficiency Measures

Building Services Cost per Inspection—All Types



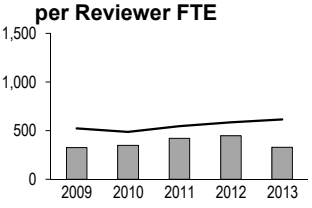
	2009	2010	2011	2012	2013
Winston-Salem	$56.82	$64.66	$61.89	$57.09	$61.35
Average	$66.40	$79.25	$80.41	$80.55	$68.58

Inspections per Day per Inspector FTE



	2009	2010	2011	2012	2013
Winston-Salem	10.6	10.1	10.9	13.8	14.9
Average	11.0	10.6	11.9	12.2	13.5

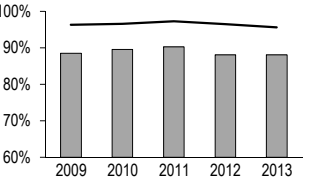
Plan Reviews per Year per Reviewer FTE



	2009	2010	2011	2012	2013
Winston-Salem	325	349	421	447	331
Average	525	486	546	587	615

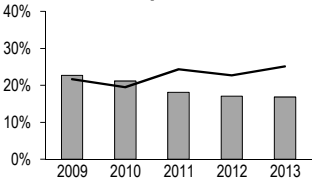
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2009	2010	2011	2012	2013
Winston-Salem	88.5%	89.6%	90.3%	88.0%	88.0%
Average	96.3%	96.6%	97.3%	96.5%	95.6%

Percentage of Inspections that Are Reinspections



	2009	2010	2011	2012	2013
Winston-Salem	22.7%	21.1%	18.1%	17.0%	16.8%
Average	21.7%	19.5%	24.4%	22.7%	25.1%

UNC
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GOVERNMENT

Performance and Cost Data

FLEET MAINTENANCE

UNC
SCHOOL OF
GOVERNMENT

PERFORMANCE MEASURES FOR FLEET MAINTENANCE

SERVICE DEFINITION

Fleet maintenance represents the scheduled and unscheduled maintenance of rolling stock performed by the central garage and contractual work assigned by the central garage. This includes preventive, predictive, corrective, and breakdown maintenance. Excluded from this definition are rolling stock not maintained by the central garage and the broader activities of fleet services, such as rolling stock replacement and disposal, fuel station operation, and pool vehicle management.

NOTES ON PERFORMANCE MEASURES

1. Number of Vehicle Equivalent Units (VEUs) per Technician FTE

Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance effort. The number of VEUs in a municipality is determined by taking the number of rolling stock units in different classes of vehicles and multiplying them by a class weight for that category of vehicle. Vehicle categories include cars; light, medium, and heavy vehicles; trailed equipment; off-road/construction/tractor units; and buses. The number of full-time equivalent (FTE) positions for technicians is the number of employees directly involved in providing the maintenance services for the municipality's rolling stock as approved in the annual operating budget for the fiscal year.

2. Number of Preventive Maintenances Completed In-House per Technician FTE

The number of preventive maintenance jobs (PMs) completed in-house is the total number completed for the fiscal year ending June 30 that are done by the municipality's staff. The number of FTE positions for technicians is the same as defined above.

3. Cost per Work Order

This measure represents the total cost of fleet maintenance and is calculated using the full cost accounting model that captures direct, indirect, and capital costs. Work orders include the total number of work orders produced, including those related to contractual work, for the fiscal year ending June 30.

4. Cost per Vehicle Equivalent Unit (VEU)

This measure represents the total cost of fleet maintenance and is calculated using the full cost accounting model that captures direct, indirect, and capital costs. VEUs are calculated as defined above for the fiscal year ending June 30.

5. Hours Billed as a Percentage of Total Hours
The total number of billable hours includes all hours for technicians available for work during the fiscal year. Billable hours are calculated by multiplying 2,080 (hours in a normal working year) by the number of FTE positions for technicians as defined above. However, this number of FTEs is adjusted for vacancies. Hours billed represents actual hours billed during the fiscal year by the central garage to departments, divisions, and programs.

6. Preventive Maintenances (PMs) as a Percentage of All Work Orders
This measure is based on the total number of PMs (done in-house or by outside contractors) completed during the fiscal year divided by the total number of work orders (including contractual work) completed during the fiscal year for that jurisdiction.

7. Percentage of PMs Completed on Schedule
Based on the total number of PMs as defined above, this measure represents the percentage of PMs completed as scheduled as defined by the respective jurisdiction's standards.

8. Percentage of Work Orders Completed within Twenty-Four Hours
Based on the total number of work orders as defined above, this measure represents the percentage of work orders completed during the fiscal year within twenty-four hours of being received.

9. Percentage of Rolling Stock Available per Day
Based on the total number of rolling stock units as defined above, this measure represents the average percentage of rolling stock available for use per working day of the jurisdiction.

10. Percentage of Work Orders Requiring Repeat Repair within Thirty Days
Based on the total number of work orders as defined above, this measure represents the percentage of works orders (completed work on a unit of rolling stock) requiring repeat repair for the same problem within thirty days.

Fleet Maintenance

Summary of Key Dimensions of Service

City or Town	Number of Rolling Stock Maintained	Average Age of Rolling Stock (in Years)	Number of Work Orders	Number of Preventive Maintenances	Number of Work Bays	Authorized Technician FTEs	Labor Rate (per Hour)	Parts Inventory Turnover per Year	Fund Type
Apex	318	7.9	1,781	811	4	3.5	na	4.0	General Fund
Asheville	802	7.7	4,645	1,596	16	9.0	$50—Cars and Small Trucks $60—Large Truck and Off-Road	2.2	General Fund
Burlington	487	11.1	3,672	2,179	19	8.0	$55—Heavy Equipment $45—Auto/Light Truck $35—Small Engine/Mowers	0.8	General Fund
Cary	787	6.4	4,480	2,110	6	8.0	$60.00	na	Internal Service
Charlotte	4,953	6.6	40,973	13,291	90	74.8	$65.81	4.2	General Fund
Concord	797	7.8	3,777	1,834	8	7.3	$60.00	6.6	General Fund
Durham	1,483	6.6	11,647	5,676	32	25.0	$59—Heavy Equipment $47—Others	3.2	General Fund
Greensboro	1,639	6.8	12,179	5,604	34	32.0	$52.00	2.2	Internal Service
Greenville	550	7.6	8,094	1,972	12	12.0	$60.00	2.2	Internal Service
Hickory	547	10.4	5,525	1,404	14	7.0	$44.50	4.0	Internal Service
High Point	924	8.8	4,831	2,279	18	11.0	$60.00	5.0	Internal Service
Salisbury	487	10.0	6,006	1,440	14	10.0	na	1.9	General Fund
Wilmington	548	8.1	3,677	1,569	20	8.0	$68.00	3.1	Internal Service
Wilson	770	9.8	6,730	1,561	15	12.0	$44.00	2.2	General Fund
Winston-Salem	1,754	8.7	10,127	5,153	31	19.0	$50.00	3.4	Internal Service

EXPLANATORY FACTORS

These are factors that the project found affected fleet maintenance performance and cost in one or more of the municipalities:

Number of vehicles maintained
Types of vehicles maintained
Fleet replacement plan
Average age of vehicles by type
Average miles driven for each type of vehicle
Preventive maintenance classification system
Preventive maintenance schedule

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet Services is a division of the Facility and Fleet Services Department in the Town of Apex. The activities for this operation are accounted for in the general fund.

The town does not charge departments for labor but does track time technicians spend on work orders. There is no charge to departments for parts or sublet work. Parts inventory turned over approximately four times during the fiscal year.

The following services were contracted out:

- transmission repairs
- extended repair order work
- major engine repairs
- body work
- EMS ambulance body service work
- electric line truck repairs
- major hydraulic cylinder repairs
- fire truck pump repairs.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Apex the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of the scheduled date or within mileage parameters.

In addition to rolling stock, Apex's fleet services has maintenance responsibilities for other pieces of equipment, including asphalt rollers, whacker and roller tamps, portable generators, ballfield conditioners, various types of ATVs, weedeaters, lawnmowers, chainsaws, sump pumps, water pumps, snow plows, flail mowers, boat motors, light towers, and stump grinders.

The Apex Fleet Services supervisor provides technician support on an as needed basis.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544

Service Profile

FTE Positions—Technician	3.5
FTE Positions—Other	1.5
Work Bays	4

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	4	6.0 Years
Cars—Severe Usage	48	5.0 Years
Light Vehicles	93	7.0 Years
Medium Vehicles	29	9.0 Years
Heavy—Sanitation	0	NA
Heavy—Sewer	1	4.0 Years
Heavy—Fire Apparatus	11	10.0 Years
Heavy—Other	18	7.0 Years
Trailed Equipment	76	9.5 Years
Off-Road/Construction/Tractors	38	10.2 Years
Buses	0	NA
TOTAL	318	

Vehicle Equivalent Units (VEUs)	930
Average Rolling Stock Units Available per Day	300
Hours Billed	6,670
Work Orders	1,781
Repeat Repairs within 30 Days	15
Work Orders Completed within 24 hours	1,427
Preventive Maintenance Jobs (PMs)	811
PMs Completed as Scheduled	811

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	29.5%
Operating Costs	59.5%
Capital Costs	11.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$195,071
Operating Costs	$394,028
Capital Costs	$73,052
TOTAL	$662,151

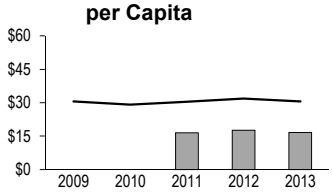
Apex

Fleet Maintenance

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

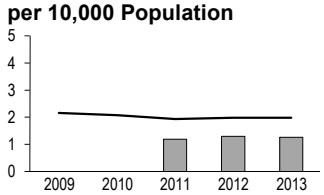
Resource Measures

Fleet Maintenance Services Cost per Capita



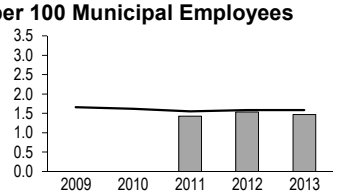
	2009	2010	2011	2012	2013
Apex			$16.49	$17.63	$16.65
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			1.19	1.29	1.26
Average	2.16	2.07	1.93	1.97	1.98

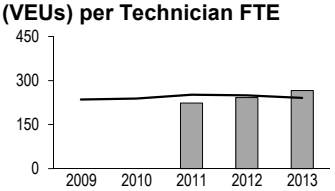
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Apex			1.42	1.54	1.47
Average	1.66	1.62	1.55	1.59	1.58

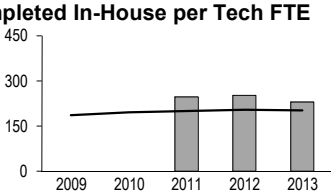
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Apex			223	241	266
Average	235	238	252	249	240

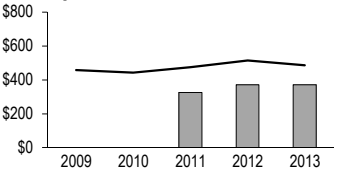
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Apex			247	252	229
Average	186	196	200	205	202

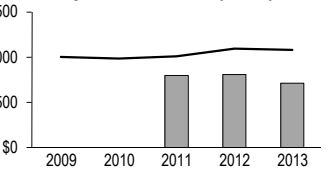
Efficiency Measures

Fleet Maintenance Cost per Work Order



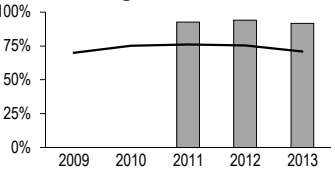
	2009	2010	2011	2012	2013
Apex			$325	$371	$372
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Apex			$799	$808	$712
Average	$1,002	$986	$1,009	$1,095	$1,082

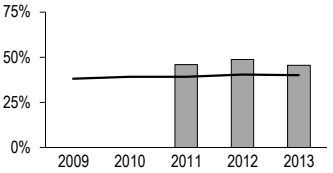
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Apex			93%	94%	92%
Average	70%	75%	76%	75%	71%

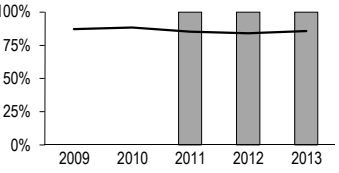
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



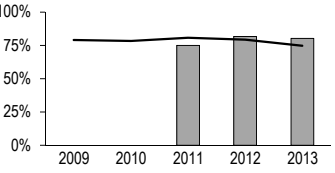
	2009	2010	2011	2012	2013
Apex			46%	49%	46%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



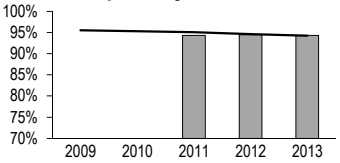
	2009	2010	2011	2012	2013
Apex			100%	100%	100%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



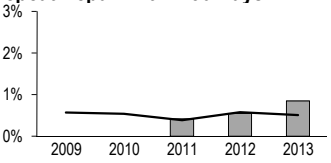
	2009	2010	2011	2012	2013
Apex			75%	82%	80%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Apex			94%	94%	94%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Apex			0.42%	0.54%	0.84%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet management is a division of the Asheville Public Works Department, consisting of the fleet maintenance garage and a fueling station. The activities for this operation are accounted for in the general fund.

Charges for maintenance services included a $50-an-hour labor rate for passenger cars and light trucks up to one ton in weight and a $60-an-hour labor rate for vehicles over one ton in weight and off-road vehicles, a 30 percent markup on parts, and a 5 percent markup on sublet work.

The following services were contracted out:

- major automatic and manual transmission repairs
- front-end alignments
- major emergency generator repairs
- aerial inspections
- major engine repairs
- paint and body repairs
- tire repairs on trucks over one ton
- major hydraulic cylinder repairs
- refuse truck body packer repairs.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Asheville, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within the same calendar month as the scheduled date.

In addition to rolling stock, Asheville's fleet services has maintenance responsibilities for other pieces of equipment, including snow plows, sand spreaders, emergency generators, water pumps, chain saws, a pressure washer, a curb builder, and other city equipment.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899

Service Profile

FTE Positions—Technician	9.0
FTE Positions—Other	7.0
Work Bays	16

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	26	8.8 Years
Cars—Severe Usage	162	6.3 Years
Light Vehicles	289	6.8 Years
Medium Vehicles	8	3.2 Years
Heavy—Sanitation	14	6.5 Years
Heavy—Sewer	2	5.0 Years
Heavy—Fire Apparatus	30	12.4 Years
Heavy—Other	64	9.3 Years
Trailed Equipment	117	8.9 Years
Off-Road/Construction/Tractors	86	8.8 Years
Buses	4	11.5 Years
TOTAL	802	

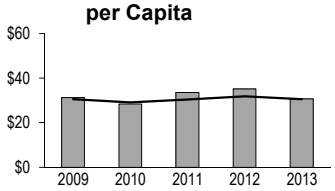
Vehicle Equivalent Units (VEUs)	2,601
Average Rolling Stock Units Available per Day	786
Hours Billed	14,497
Work Orders	4,645
Repeat Repairs within 30 Days	48
Work Orders Completed within 24 hours	3,154
Preventive Maintenance Jobs (PMs)	1,596
PMs Completed as Scheduled	1,468

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	32.6%
Operating Costs	65.0%
Capital Costs	2.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$865,131
Operating Costs	$1,723,543
Capital Costs	$61,754
TOTAL	$2,650,428

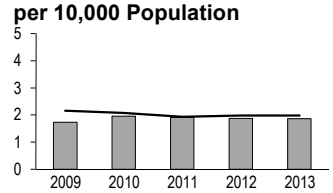
Resource Measures

Fleet Maintenance Services Cost per Capita



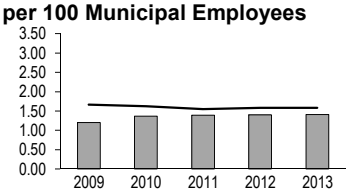
	2009	2010	2011	2012	2013
Asheville	$31.26	$28.42	$33.59	$35.16	$30.74
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	1.73	1.95	1.91	1.87	1.86
Average	2.16	2.07	1.93	1.97	1.98

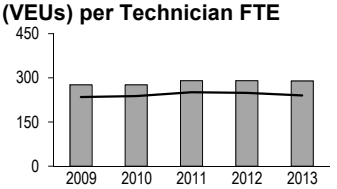
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Asheville	1.20	1.36	1.40	1.40	1.41
Average	1.66	1.62	1.55	1.59	1.58

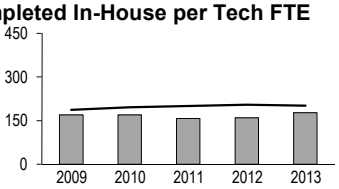
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Asheville	276	276	290	290	289
Average	235	238	252	249	240

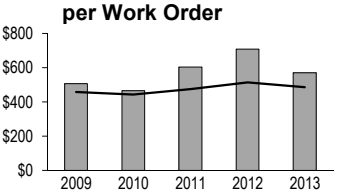
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Asheville	170	170	157	159	177
Average	186	196	200	205	202

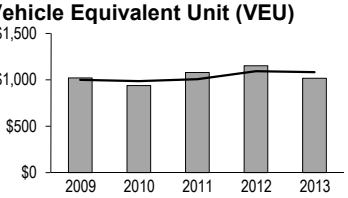
Efficiency Measures

Fleet Maintenance Cost per Work Order



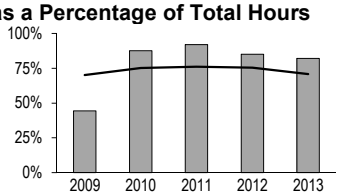
	2009	2010	2011	2012	2013
Asheville	$507	$466	$604	$708	$571
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Asheville	$1,023	$938	$1,079	$1,153	$1,019
Average	$1,002	$986	$1,009	$1,095	$1,082

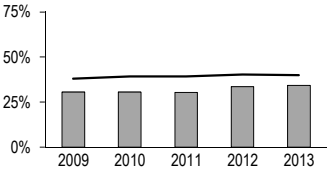
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Asheville	44%	88%	92%	85%	82%
Average	70%	75%	76%	75%	71%

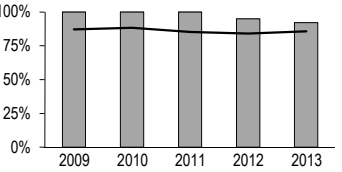
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



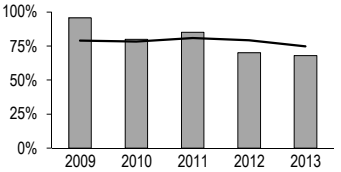
	2009	2010	2011	2012	2013
Asheville	31%	31%	30%	34%	34%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



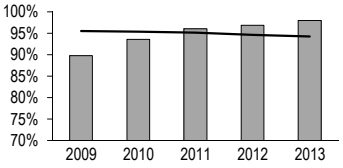
	2009	2010	2011	2012	2013
Asheville	100%	100%	100%	95%	92%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



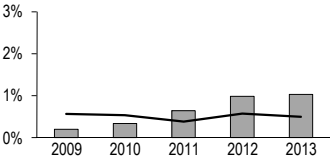
	2009	2010	2011	2012	2013
Asheville	96%	80%	85%	70%	68%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Asheville	90%	94%	96%	97%	98%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Asheville	0.20%	0.34%	0.64%	0.99%	1.03%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Burlington's fleet maintenance is performed by the Equipment Services Division of the Public Works Department. The activities for this operation were accounted for in the general fund.

There are no charges for hourly labor, but a tracking fee is used for internal purposes. There is a 5 percent markup on parts but no markup on sublet work.

The following services were contracted out:

- bodywork
- alignments
- major transmission repairs
- machine work
- windshield replacement
- upholstery work
- aerial inspections
- wrecker service
- two-way radio work.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

In Burlington, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is based on mileage parameters. While most PMs are done within twenty-four hours of arrival at the fleet shop, not all vehicles are brought in by departments on time to allow completion on schedule.

In addition to rolling stock, Burlington's Equipment Services Division has maintenance responsibility for bush hogs, edgers, pavers, pressure washers, riding mowers, generators, chain saws, push mowers, grinders, paint machines, spreaders, aerators, directional signs, and other city equipment.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031

Service Profile

FTE Positions—Technician	8.0
FTE Positions—Other	6.0
Work Bays	19

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	38	6.3 Years
Cars—Severe Usage	100	5.7 Years
Light Vehicles	131	10.3 Years
Medium Vehicles	35	14.2 Years
Heavy—Sanitation	21	7.7 Years
Heavy—Sewer	5	15.2 Years
Heavy—Fire Apparatus	9	10.1 Years
Heavy—Other	8	14.9 Years
Trailed Equipment	90	16.6 Years
Off-Road/Construction/Tractors	47	16.3 Years
Buses	3	9.0 Years
TOTAL	487	

Vehicle Equivalent Units (VEUs)	1,527
Average Rolling Stock Units Available per Day	401
Hours Billed	11,616
Work Orders	3,672
Repeat Repairs within 30 Days	0
Work Orders Completed within 24 hours	2,125
Preventive Maintenance Jobs (PMs)	2,179
PMs Completed as Scheduled	821

Full Cost Profile

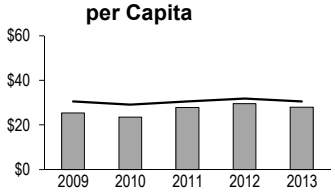
Cost Breakdown by Percentage	
Personal Services	39.0%
Operating Costs	57.8%
Capital Costs	3.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$556,371
Operating Costs	$824,908
Capital Costs	$46,892
TOTAL	$1,428,171

Burlington — Fleet Maintenance

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

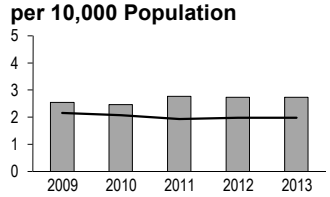
Resource Measures

Fleet Maintenance Services Cost per Capita



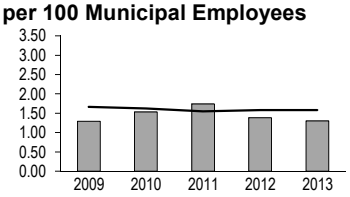
	2009	2010	2011	2012	2013
Burlington	$25.39	$23.45	$27.79	$29.57	$27.90
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	2.54	2.46	2.77	2.73	2.73
Average	2.16	2.07	1.93	1.97	1.98

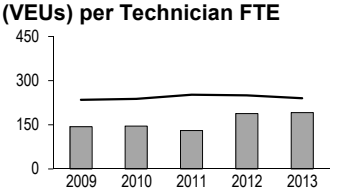
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Burlington	1.29	1.53	1.74	1.39	1.30
Average	1.66	1.62	1.55	1.59	1.58

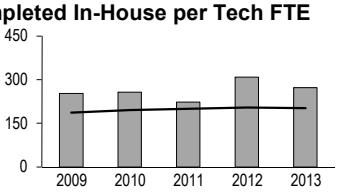
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Burlington	143	145	130	188	191
Average	235	238	252	249	240

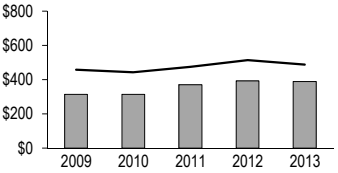
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Burlington	252	257	223	309	272
Average	186	196	200	205	202

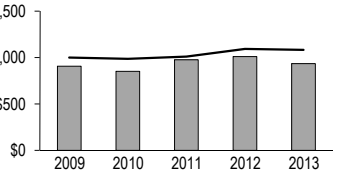
Efficiency Measures

Fleet Maintenance Cost per Work Order



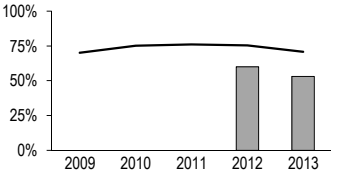
	2009	2010	2011	2012	2013
Burlington	$314	$314	$370	$392	$389
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Burlington	$908	$853	$977	$1,010	$935
Average	$1,002	$986	$1,009	$1,095	$1,082

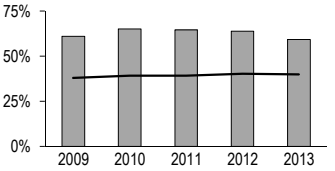
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Burlington				60%	53%
Average	70%	75%	76%	75%	71%

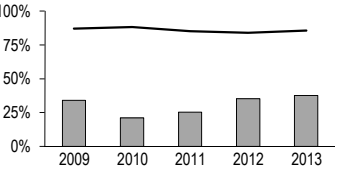
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



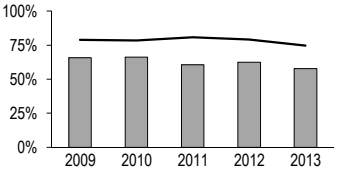
	2009	2010	2011	2012	2013
Burlington	61%	65%	65%	64%	59%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



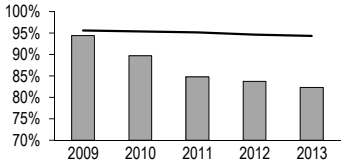
	2009	2010	2011	2012	2013
Burlington	34%	21%	25%	35%	38%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



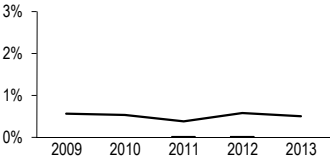
	2009	2010	2011	2012	2013
Burlington	66%	66%	61%	63%	58%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Burlington	94%	90%	85%	84%	82%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Burlington	0.00%	0.00%	0.03%	0.03%	0.00%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Cary's Fleet Division is located in the Public Works and Utilities Department. It operates as an internal service fund where departments are charged according to actual usage and all expenses and revenues are tracked separately from the general fund.

The division charges $60 an hour for labor on all vehicle types and a 19 percent markup on parts sold. A flat fee of $19 is charged on sublet work.

Cary has a contract with the retail store NAPA where space is provided for a parts warehouse, but parts are only sold to Cary when used. Parts are stocked based on an annual review of parts used and maintenance requirements. NAPA does not charge a stocking/restocking fee.

The following services were contracted out:

- body work
- tire replacement (tires over 16 inches)
- some major transmission work
- some engine overhaul
- striping/decal work for law enforcement and fire vehicles only.

Conditions Affecting Service, Performance, and Costs

Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Cary, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within the same calendar month as the scheduled date or within mileage parameters.

In addition to rolling stock, Cary's fleet services has maintenance responsibilities for riding mowers, weedwhackers, rotor tillers, tamps, saws, chippers, rollers, excavators, loaders, salt spreaders, concrete mixers, seeders, aerators, generators, an asphalt heater and trench master, and other town equipment.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610

Service Profile

FTE Positions—Technician	8.0
FTE Positions—Other	3.0
Work Bays	6

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	39	6.2 Years
Cars—Severe Usage	119	5.8 Years
Light Vehicles	258	5.9 Years
Medium Vehicles	73	7.8 Years
Heavy—Sanitation	32	4.3 Years
Heavy—Sewer	4	4.8 Years
Heavy—Fire Apparatus	21	8.5 Years
Heavy—Other	16	8.2 Years
Trailed Equipment	68	8.6 Years
Off-Road/Construction/Tractors	157	6.2 Years
Buses	0	NA
TOTAL	787	

Vehicle Equivalent Units (VEUs)	2,761
Average Rolling Stock Units Available per Day	740
Hours Billed	9,108
Work Orders	4,480
Repeat Repairs within 30 Days	20
Work Orders Completed within 24 hours	3,986
Preventive Maintenance Jobs (PMs)	2,110
PMs Completed as Scheduled	1,935

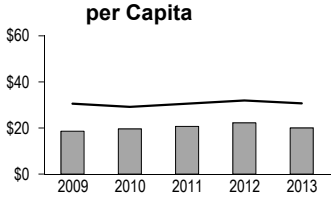
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	24.5%
Operating Costs	70.0%
Capital Costs	5.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$697,193
Operating Costs	$1,993,377
Capital Costs	$157,369
TOTAL	$2,847,939

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

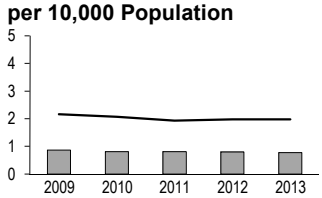
Resource Measures

Fleet Maintenance Services Cost per Capita



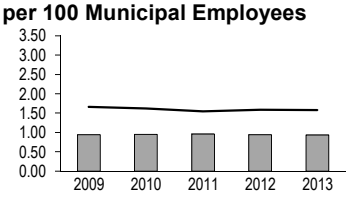
	2009	2010	2011	2012	2013
Cary	$18.59	$19.52	$20.59	$22.13	$20.00
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	0.86	0.81	0.81	0.79	0.77
Average	2.16	2.07	1.93	1.97	1.98

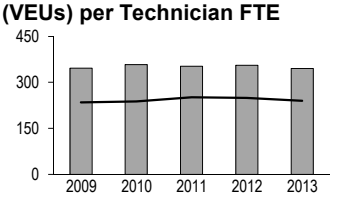
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Cary	0.94	0.95	0.96	0.94	0.93
Average	1.66	1.62	1.55	1.59	1.58

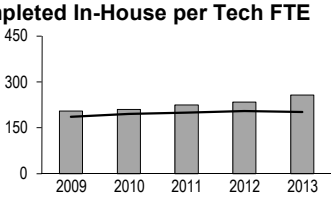
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Cary	346	357	353	356	345
Average	235	238	252	249	240

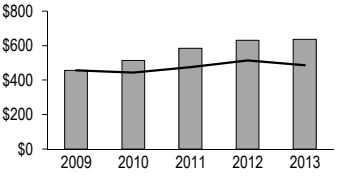
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Cary	204	210	224	235	257
Average	186	196	200	205	202

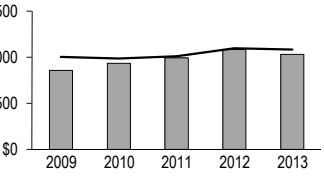
Efficiency Measures

Fleet Maintenance Cost per Work Order



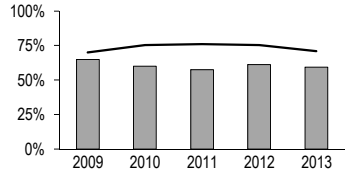
	2009	2010	2011	2012	2013
Cary	$456	$513	$584	$630	$636
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Cary	$857	$933	$993	$1,081	$1,032
Average	$1,002	$986	$1,009	$1,095	$1,082

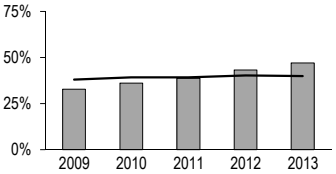
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Cary	65%	60%	58%	61%	59%
Average	70%	75%	76%	75%	71%

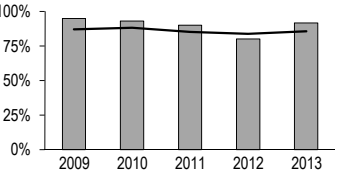
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



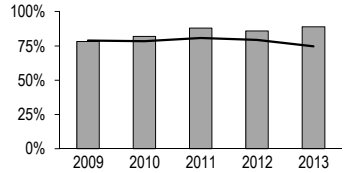
	2009	2010	2011	2012	2013
Cary	33%	36%	39%	43%	47%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



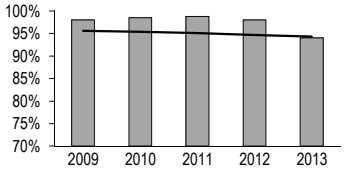
	2009	2010	2011	2012	2013
Cary	95%	93%	90%	80%	92%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



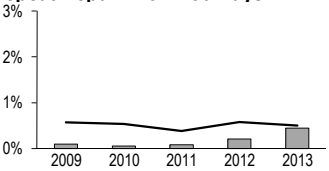
	2009	2010	2011	2012	2013
Cary	78%	82%	88%	86%	89%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Cary	98%	99%	99%	98%	94%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Cary	0.10%	0.06%	0.08%	0.20%	0.45%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Charlotte and the County of Mecklenburg merged fleet maintenance services under a city-operated program beginning July 1, 2009. The data reported here are inclusive of both fleets. The services are provided by Charlotte's Equipment Management Division, which is part of Business Support Services. All activities for this operation are accounted for in the general fund. The Equipment Management Division currently charges an administrative fee per unit to compensate for the overhead of administrative staff, including tags and title work, specification writing, and fleet analysis.

Charges for maintenance services included a $65.81-per-hour labor rate, a 21.22 percent markup charge on parts sold, and a 20.78 percent markup charge on sublet work. Part caps are negotiated individually, based on very special and specific needs. All sublet transactions are subject to a $500 cap.

The following services were contracted out during the year: accident repair, body work, spring repairs, front-end alignment, glass replacement, fuel system repair, engine overhauls, transmission overhauls, towing, some tire service, police car preparation, heavy tire replacement and repair, some light-vehicle preventive maintenance, painting/graphic installation, and radio/computer installation or removal.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent. Charlotte indicated that 73.0 technician full-time equivalents (FTEs) were actually available for work during FY 2012–13 for this calculation.

In Charlotte the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of the scheduled date and within mileage parameters.

In addition to rolling stock, Charlotte's fleet services had maintenance responsibilities for generators, mowers, weedwhackers, compressors, saws, blowers, fans, asphalt-tar/kettles, edgers, snow plows, spreaders, tamps, mixers, chippers, posthole diggers, grinders, pressure washers, and other city equipment.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539

Service Profile

FTE Positions—Technician	74.75
FTE Positions—Other	47.25
Work Bays	90

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	906	5.6 Years
Cars—Severe Usage	943	4.5 Years
Light Vehicles	1,572	6.2 Years
Medium Vehicles	176	8.0 Years
Heavy—Sanitation	148	4.3 Years
Heavy—Sewer	28	5.4 Years
Heavy—Fire Apparatus	94	8.4 Years
Heavy—Other	141	8.9 Years
Trailed Equipment	507	10.9 Years
Off-Road/Construction/Tractors	412	9.1 Years
Buses	26	4.5 Years
TOTAL	4,953	

Vehicle Equivalent Units (VEUs)	14,220
Average Rolling Stock Units Available per Day	4,434
Hours Billed	118,923
Work Orders	40,973
Repeat Repairs within 30 Days	9
Work Orders Completed within 24 hours	31,217
Preventive Maintenance Jobs (PMs)	13,291
PMs Completed as Scheduled	11,333

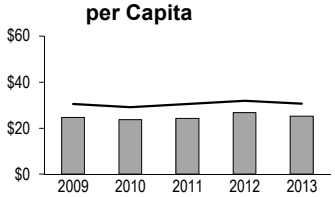
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	39.6%
Operating Costs	58.2%
Capital Costs	2.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,638,475
Operating Costs	$11,232,231
Capital Costs	$422,675
TOTAL	$19,293,381

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

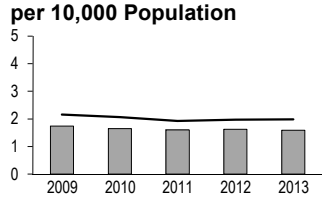
Resource Measures

Fleet Maintenance Services Cost per Capita



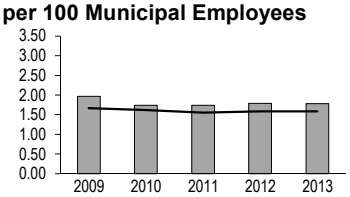
	2009	2010	2011	2012	2013
Charlotte	$24.63	$23.72	$24.21	$26.79	$25.20
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	1.74	1.65	1.60	1.62	1.59
Average	2.16	2.07	1.93	1.97	1.98

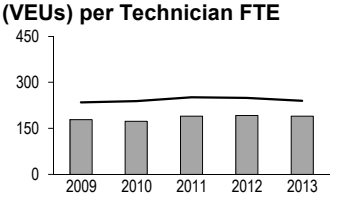
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Charlotte	1.96	1.74	1.74	1.79	1.78
Average	1.66	1.62	1.55	1.59	1.58

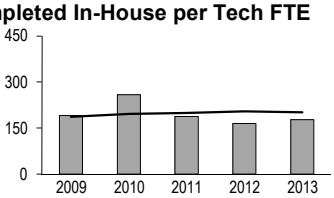
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Charlotte	178	173	190	192	190
Average	235	238	252	249	240

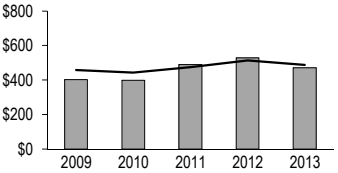
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Charlotte	191	258	188	165	178
Average	186	196	200	205	202

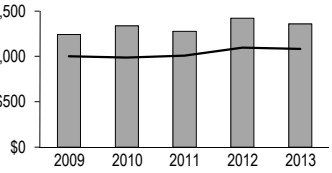
Efficiency Measures

Fleet Maintenance Cost per Work Order



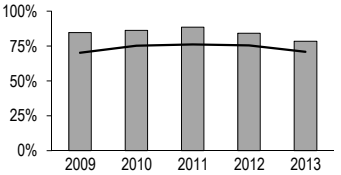
	2009	2010	2011	2012	2013
Charlotte	$403	$399	$490	$529	$471
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Charlotte	$1,240	$1,337	$1,277	$1,421	$1,357
Average	$1,002	$986	$1,009	$1,095	$1,082

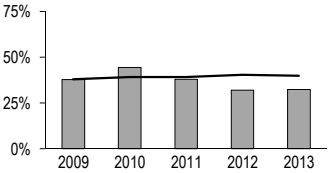
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Charlotte	84%	86%	88%	84%	78%
Average	70%	75%	76%	75%	71%

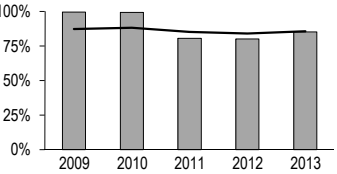
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



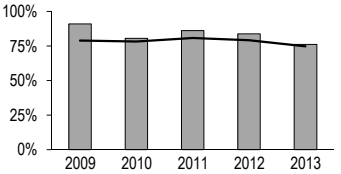
	2009	2010	2011	2012	2013
Charlotte	38%	44%	38%	32%	32%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



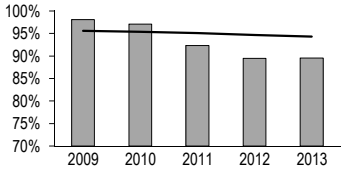
	2009	2010	2011	2012	2013
Charlotte	99%	99%	81%	80%	85%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



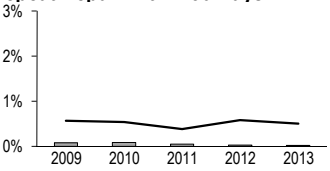
	2009	2010	2011	2012	2013
Charlotte	91%	80%	86%	84%	76%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Charlotte	98%	97%	92%	90%	90%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Charlotte	0.08%	0.08%	0.05%	0.02%	0.02%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Concord's Fleet Department operates as a separate city department through an internal service fund, charging other departments for services rendered.

A labor rate of $60 per hour is charged for all maintenance services. There is a 25 percent markup charge for parts and a 10 percent markup on sublet work.

The following services were contracted out:

- body repairs
- aerial device repairs
- front-end alignments.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent. Concord indicated that 6.90 technician full-time equivalents (FTEs) were actually working during FY 2012–13 for this calculation.

In Concord, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of the scheduled date.

In addition to rolling stock, Concord's fleet services has maintenance responsibilities for generators, mowers, weedeaters, chainsaws, chop saws, leaf blowers, tamps, pumps, power washers, and other city equipment.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351

Service Profile

FTE Positions—Technician	7.25
FTE Positions—Other	5.0
Work Bays	8

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	11	11.1 Years
Cars—Severe Usage	161	4.6 Years
Light Vehicles	221	7.6 Years
Medium Vehicles	49	8.1 Years
Heavy—Sanitation	13	6.2 Years
Heavy—Sewer	3	5.6 Years
Heavy—Fire Apparatus	24	10.5 Years
Heavy—Other	55	7.1 Years
Trailed Equipment	152	10.7 Years
Off-Road/Construction/Tractors	92	8.5 Years
Buses	16	8.9 Years
TOTAL	797	

Vehicle Equivalent Units (VEUs)	2,606
Average Rolling Stock Units Available per Day	786
Hours Billed	9,474
Work Orders	3,777
Repeat Repairs within 30 Days	19
Work Orders Completed within 24 hours	3,698
Preventive Maintenance Jobs (PMs)	1,834
PMs Completed as Scheduled	1,780

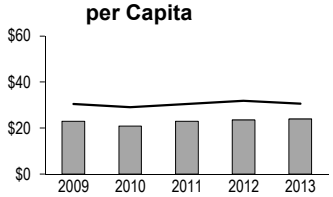
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	40.3%
Operating Costs	55.6%
Capital Costs	4.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$785,191
Operating Costs	$1,084,113
Capital Costs	$80,511
TOTAL	$1,949,815

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

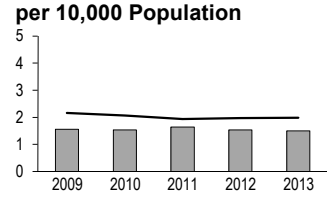
Resource Measures

Fleet Maintenance Services Cost per Capita



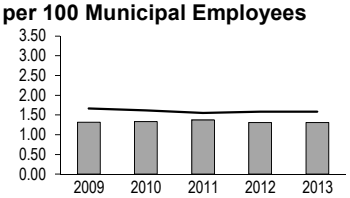
	2009	2010	2011	2012	2013
Concord	$22.93	$20.94	$22.91	$23.58	$23.94
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	1.56	1.53	1.63	1.53	1.50
Average	2.16	2.07	1.93	1.97	1.98

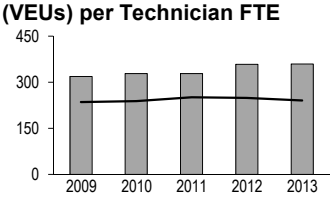
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Concord	1.31	1.33	1.37	1.31	1.31
Average	1.66	1.62	1.55	1.59	1.58

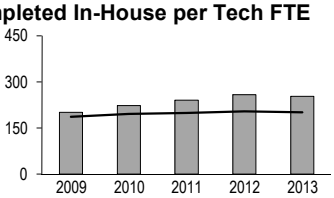
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Concord	319	328	328	358	359
Average	235	238	252	249	240

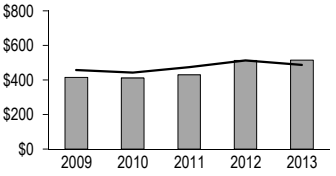
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Concord	202	224	241	259	253
Average	186	196	200	205	202

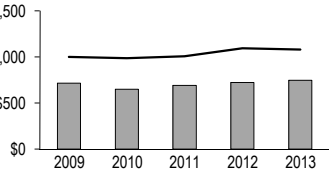
Efficiency Measures

Fleet Maintenance Cost per Work Order



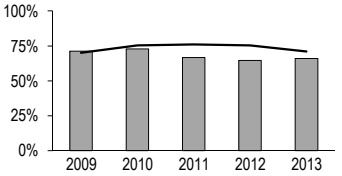
	2009	2010	2011	2012	2013
Concord	$415	$412	$430	$514	$516
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Concord	$717	$652	$694	$725	$748
Average	$1,002	$986	$1,009	$1,095	$1,082

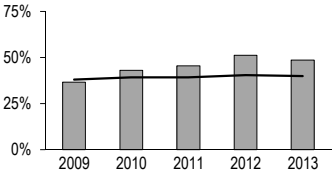
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Concord	71%	73%	67%	64%	66%
Average	70%	75%	76%	75%	71%

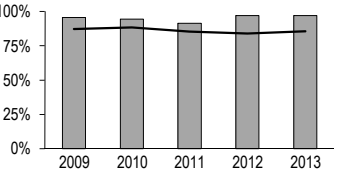
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



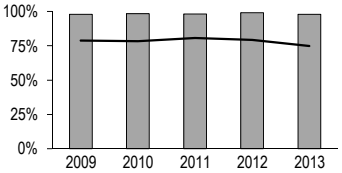
	2009	2010	2011	2012	2013
Concord	37%	43%	46%	51%	49%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



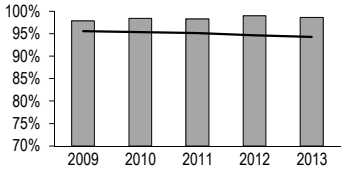
	2009	2010	2011	2012	2013
Concord	95%	94%	91%	97%	97%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



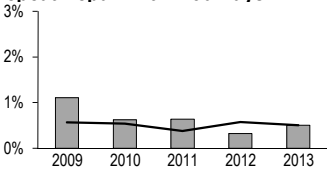
	2009	2010	2011	2012	2013
Concord	98%	98%	98%	99%	98%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Concord	98%	98%	98%	99%	99%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Concord	1.11%	0.63%	0.64%	0.33%	0.50%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet Maintenance is a division of Durham's General Services Department. All activities for this operation were accounted for through the general fund. A $59 per hour fee is charged for work on heavy vehicles and $47 per hour for all other vehicles. A 5 percent markup is added to all inside and outside parts issued to work orders to cover consummable items such as nuts, bolts, and light bulbs.

The following services were contracted out :

- paint and body
- transmission and engine overhauls
- glass repairs
- environmental cleanup and spills
- towing
- window tinting
- welding

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and theytake normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Durham the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within the same calendar month and by mileage parameters.

In addition to rolling stock, Durham's fleet services has maintenance responsibilities for tractors, mowers, generators, compressors, pumps, jack hammers, and other city equipment.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176

Service Profile

FTE Positions—Technician	25.0
FTE Positions—Other	19.0
Work Bays	32

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	105	8.3 Years
Cars—Severe Usage	372	4.7 Years
Light Vehicles	443	6.2 Years
Medium Vehicles	61	6.1 Years
Heavy—Sanitation	70	5.5 Years
Heavy—Sewer	8	6.9 Years
Heavy—Fire Apparatus	31	10.5 Years
Heavy—Other	88	7.1 Years
Trailed Equipment	163	8.3 Years
Off-Road/Construction/Tractors	135	8.7 Years
Buses	7	7.1 Years
TOTAL	1,483	

Vehicle Equivalent Units (VEUs)	5,074
Average Rolling Stock Units Available per Day	1,391
Hours Billed	32,638
Work Orders	11,647
Repeat Repairs within 30 Days	28
Work Orders Completed within 24 hours	6,036
Preventive Maintenance Jobs (PMs)	5,676
PMs Completed as Scheduled	5,676

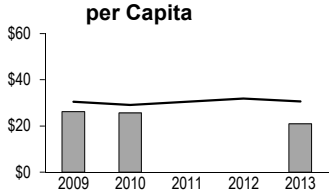
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	50.0%
Operating Costs	44.8%
Capital Costs	5.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,480,006
Operating Costs	$2,219,300
Capital Costs	$256,349
TOTAL	$4,955,655

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

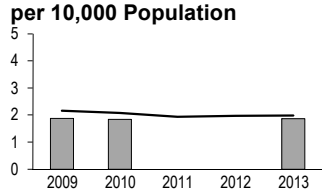
Resource Measures

Fleet Maintenance Services Cost per Capita



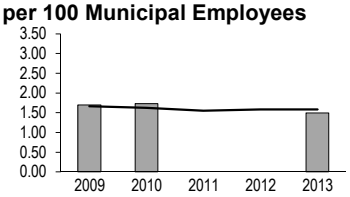
	2009	2010	2011	2012	2013
Durham	$26.21	$25.64			$20.95
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	1.88	1.84			1.86
Average	2.16	2.07	1.93	1.97	1.98

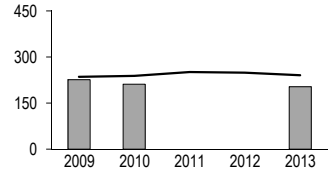
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Durham	1.70	1.73			1.50
Average	1.66	1.62	1.55	1.59	1.58

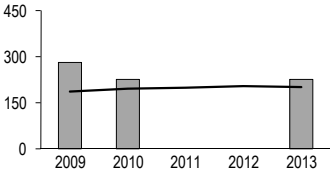
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Durham	226	212			203
Average	235	238	252	249	240

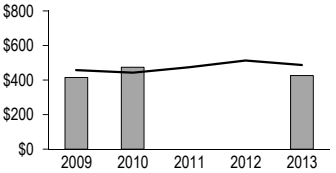
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Durham	282	226			226
Average	186	196	200	205	202

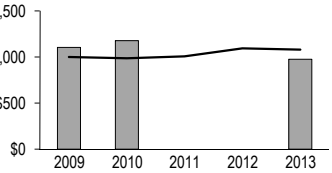
Efficiency Measures

Fleet Maintenance Cost per Work Order



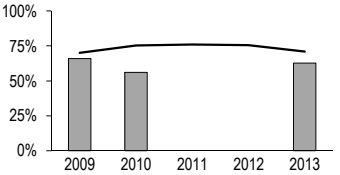
	2009	2010	2011	2012	2013
Durham	$415	$475			$425
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Durham	$1,106	$1,179			$977
Average	$1,002	$986	$1,009	$1,095	$1,082

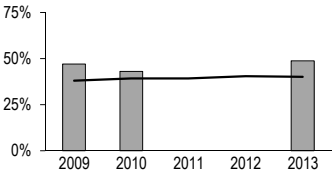
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Durham	66%	56%			63%
Average	70%	75%	76%	75%	71%

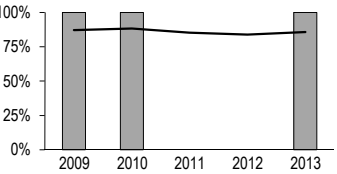
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



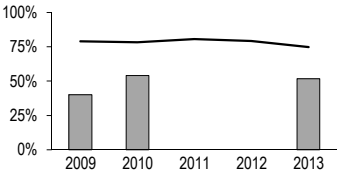
	2009	2010	2011	2012	2013
Durham	47%	43%			49%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



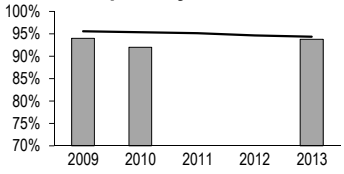
	2009	2010	2011	2012	2013
Durham	100%	100%			100%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



	2009	2010	2011	2012	2013
Durham	40%	54%			52%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Durham	94%	92%			94%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days

	2009	2010	2011	2012	2013
Durham	0.22%	0.24%			0.24%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Greensboro's fleet maintenance operation is housed within the Equipment Services Division of the Finance Department. The division consists of four sections: administration, services, parts, and tires. All activities for this operation are accounted for in an internal service fund, with other departments and programs charged for its maintenance services on a cost recovery basis.

The labor rate for FY 2012–13 was $52 an hour. Charges included a 25 percent markup for parts sold and a 5 percent markup for sublet work.

The following services were contracted out:

- body work
- glass repair
- upholstery repair
- most automotive and light-duty oil changes
- other repairs when workload exceeded in-house capacity.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Greensboro, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" uses mileage parameters and scheduled dates within the calendar month or within thirty days of schedule.

The measure "number of repeat repairs within thirty days" is tracked by city fleet management software. This data reflects an inflated number of repeat repairs within thirty days due to repair type coding on the parts and/or shop maintenance that can incorrectly attribute additional maintenance as a repeat repair. This data will be tracked manually going forward starting with the current year. The average monthly repeat repairs in FY 2010–11 suggest that past reported data may be inflated by an average of 300 repairs annually.

In addition to rolling stock, Greensboro's fleet services has maintenance responsibilities for generators, saws, blowers, various police equipment, asphalt pavers, sprayers, hydraulic hammers, a motor mixer, pumps, snow plows, spreaders, and other equipment.

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163

Service Profile

FTE Positions—Technician	32.0
FTE Positions—Other	17.0
Work Bays	34

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	164	5.0 Years
Cars—Severe Usage	373	4.0 Years
Light Vehicles	420	7.0 Years
Medium Vehicles	115	8.0 Years
Heavy—Sanitation	92	5.0 Years
Heavy—Sewer	7	4.0 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	112	8.0 Years
Trailed Equipment	218	10.0 Years
Off-Road/Construction/Tractors	135	10.0 Years
Buses	3	14.0 Years
TOTAL	1,639	

Vehicle Equivalent Units (VEUs)	5,340
Average Rolling Stock Units Available per Day	1,513
Hours Billed	53,554
Work Orders	12,179
Repeat Repairs within 30 Days	49
Work Orders Completed within 24 hours	11,290
Preventive Maintenance Jobs (PMs)	5,604
PMs Completed as Scheduled	5,604

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	44.2%
Operating Costs	55.8%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,180,815
Operating Costs	$4,020,096
Capital Costs	$0
TOTAL	$7,200,911

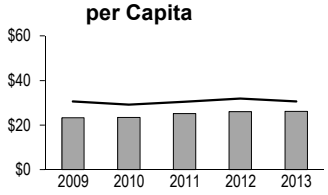
Greensboro

Fleet Maintenance

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

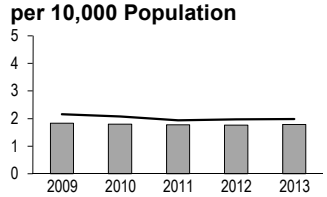
Resource Measures

Fleet Maintenance Services Cost per Capita



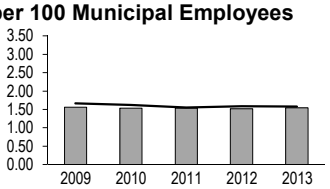
	2009	2010	2011	2012	2013
Greensboro	$23.30	$23.37	$25.16	$26.05	$26.18
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.83	1.80	1.78	1.76	1.78
Average	2.16	2.07	1.93	1.97	1.98

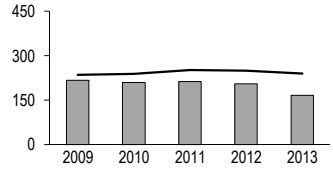
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greensboro	1.56	1.54	1.54	1.51	1.54
Average	1.66	1.62	1.55	1.59	1.58

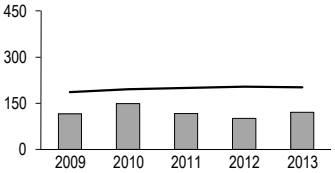
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Greensboro	217	210	212	205	167
Average	235	238	252	249	240

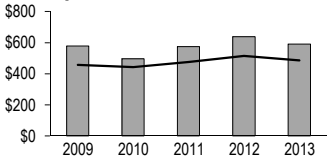
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Greensboro	116	149	116	101	121
Average	186	196	200	205	202

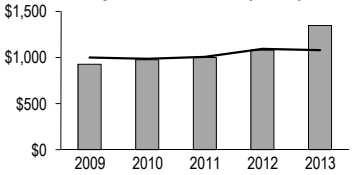
Efficiency Measures

Fleet Maintenance Cost per Work Order



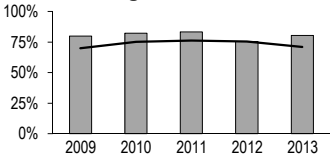
	2009	2010	2011	2012	2013
Greensboro	$578	$496	$574	$637	$591
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Greensboro	$927	$976	$1,000	$1,080	$1,348
Average	$1,002	$986	$1,009	$1,095	$1,082

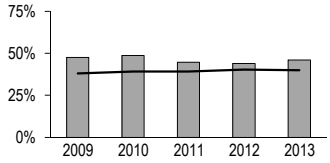
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Greensboro	80%	82%	83%	75%	80%
Average	70%	75%	76%	75%	71%

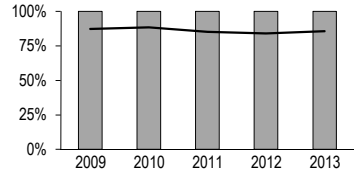
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



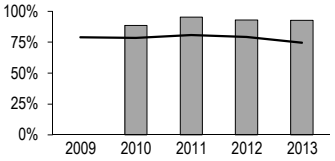
	2009	2010	2011	2012	2013
Greensboro	47%	49%	45%	44%	46%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



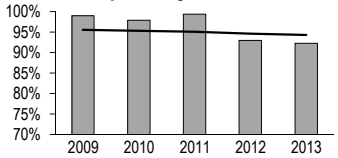
	2009	2010	2011	2012	2013
Greensboro	100%	100%	100%	100%	100%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



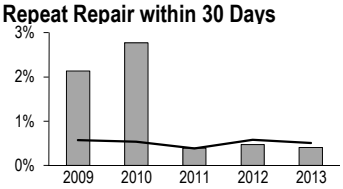
	2009	2010	2011	2012	2013
Greensboro		89%	95%	93%	93%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Greensboro	99%	98%	99%	93%	92%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Greensboro	2.13%	2.77%	0.39%	0.47%	0.40%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Fleet Division is a part of Greenville's Public Works Department. All activities for this operation are accounted for as part of the city's general fund.

The division charges the Transit and Sanitation departments a $60-per-hour labor rate for maintenance services and has a 25 percent markup on parts and a 15 percent markup on sublet work.

The following services were contracted out:

- alignments
- major body and paint repair
- two-way radio installs
- emergency light installs
- exhaust repair
- glass repair or replacement
- transmission overhaul
- major engine repair
- warranty repairs
- towing.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

In Greenville, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of the scheduled date or mileage parameters.

In addition to rolling stock, Greenville's fleet division has maintenance responsibilities for generators, lawnmowers, blowers, weedeaters, light towers, tampers, chainsaws, golf carts, utility carts, bush hogs, sprayers, fog machines, tractors, salt spreaders, leaf vacuums, concrete saws, an asphalt melter, rollers, a stump grinder, trail mowers, and other equipment.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482

Service Profile

FTE Positions—Technician	12.0
FTE Positions—Other	5.0
Work Bays	12

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	82	8.5 Years
Cars—Severe Usage	92	5.0 Years
Light Vehicles	156	8.5 Years
Medium Vehicles	29	8.5 Years
Heavy—Sanitation	40	7.0 Years
Heavy—Sewer	1	13.0 Years
Heavy—Fire Apparatus	12	10.0 Years
Heavy—Other	32	7.0 Years
Trailed Equipment	53	12.5 Years
Off-Road/Construction/Tractors	42	19.0 Years
Buses	11	6.0 Years
TOTAL	550	

Vehicle Equivalent Units (VEUs)	2,051
Average Rolling Stock Units Available per Day	NA
Hours Billed	14,053
Work Orders	8,094
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	1,972
PMs Completed as Scheduled	890

Full Cost Profile

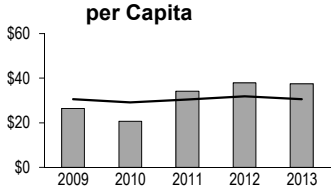
Cost Breakdown by Percentage	
Personal Services	36.4%
Operating Costs	43.5%
Capital Costs	20.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,172,621
Operating Costs	$1,401,051
Capital Costs	$648,813
TOTAL	$3,222,485

Greenville — Fleet Maintenance

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

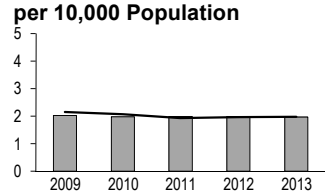
Resource Measures

Fleet Maintenance Services Cost per Capita



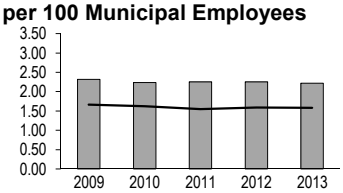
	2009	2010	2011	2012	2013
Greenville	$26.35	$20.66	$34.11	$37.85	$37.41
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	2.03	1.98	2.00	2.00	1.97
Average	2.16	2.07	1.93	1.97	1.98

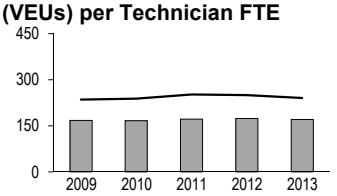
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greenville	2.32	2.24	2.25	2.25	2.22
Average	1.66	1.62	1.55	1.59	1.58

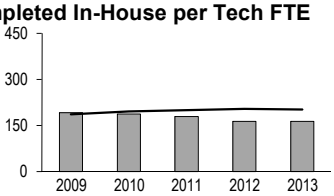
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Greenville	167	167	172	174	171
Average	235	238	252	249	240

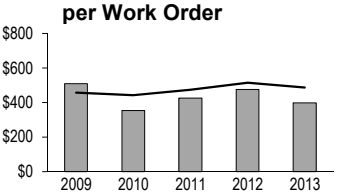
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Greenville	191	187	179	164	164
Average	186	196	200	205	202

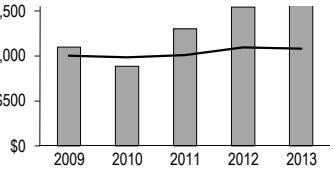
Efficiency Measures

Fleet Maintenance Cost per Work Order



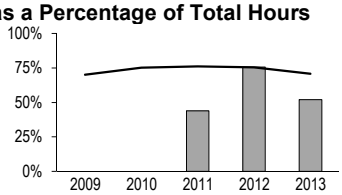
	2009	2010	2011	2012	2013
Greenville	$510	$354	$426	$476	$398
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Greenville	$1,098	$886	$1,301	$1,544	$1,571
Average	$1,002	$986	$1,009	$1,095	$1,082

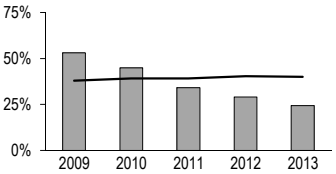
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Greenville			44%	76%	52%
Average	70%	75%	76%	75%	71%

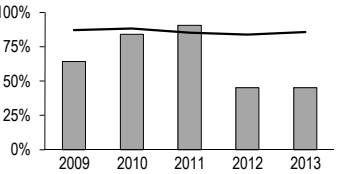
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



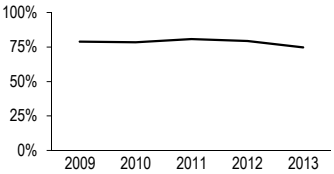
	2009	2010	2011	2012	2013
Greenville	53%	45%	34%	29%	24%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



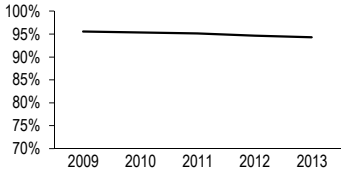
	2009	2010	2011	2012	2013
Greenville	64%	84%	91%	45%	45%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



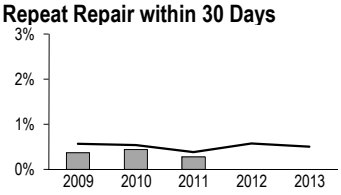
	2009	2010	2011	2012	2013
Greenville					
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Greenville					
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Greenville	0.37%	0.44%	0.28%		
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet Maintenance is a division of Hickory's Public Services Department and consists of a garage office, a parts warehouse, a welding shop, a maintenance shop, a fleet wash station, a fuel station, and a compressed natural gas station. All activities for this operation are accounted for in an internal service fund.

The division charges a $44.50-per-hour labor rate for maintenance services and a 25 percent markup charge on parts sold. There is no markup charge for sublet work.

The following services were contracted out:

- alignments
- body work
- large wrecker service
- special machine work
- starter/alternator repair
- glass repair or replacement
- transmission repairs.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Hickory, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of the scheduled date.

In addition to rolling stock, Hickory's fleet services has maintenance responsibilities for electronic signs, saws, weedeaters, sewer machines, hole piercing tools, boring machines, pumps, mowers, edgers, a sand blaster, pressure washers, blowers, mules, spreaders, generators, tamps, vacuums, airport equipment, grinders, a fleet wash station, a compressed natural gas fuel station, a gasoline and diesel fuel station, and other equipment.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347

Service Profile

FTE Positions—Technician	7.0
FTE Positions—Other	4.0
Work Bays	14

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	22	9.8 Years
Cars—Severe Usage	140	6.8 Years
Light Vehicles	103	8.8 Years
Medium Vehicles	35	12.6 Years
Heavy—Sanitation	30	7.4 Years
Heavy—Sewer	7	10.0 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	20	13.5 Years
Trailed Equipment	55	11.1 Years
Off-Road/Construction/Tractors	135	14.7 Years
Buses	0	NA
TOTAL	547	

Vehicle Equivalent Units (VEUs)	1,928
Average Rolling Stock Units Available per Day	531
Hours Billed	11,722
Work Orders	5,525
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	1,404
PMs Completed as Scheduled	1,404

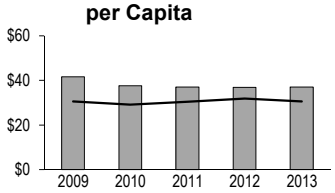
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	39.9%
Operating Costs	59.2%
Capital Costs	0.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$590,905
Operating Costs	$877,091
Capital Costs	$13,403
TOTAL	$1,481,399

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

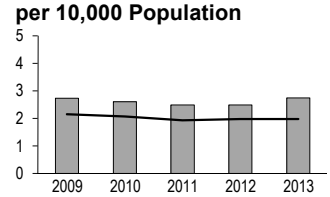
Resource Measures

Fleet Maintenance Services Cost per Capita



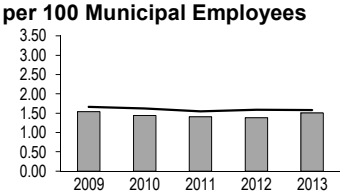
	2009	2010	2011	2012	2013
Hickory	$41.58	$37.66	$37.07	$36.88	$37.00
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	2.74	2.61	2.49	2.49	2.75
Average	2.16	2.07	1.93	1.97	1.98

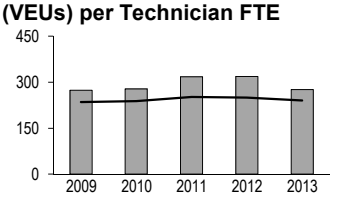
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Hickory	1.54	1.44	1.40	1.38	1.51
Average	1.66	1.62	1.55	1.59	1.58

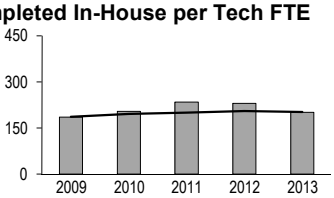
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Hickory	273	278	318	318	275
Average	235	238	252	249	240

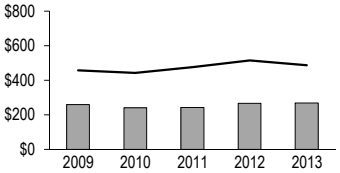
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Hickory	185	204	234	230	201
Average	186	196	200	205	202

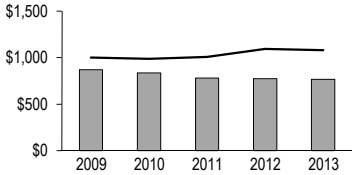
Efficiency Measures

Fleet Maintenance Cost per Work Order



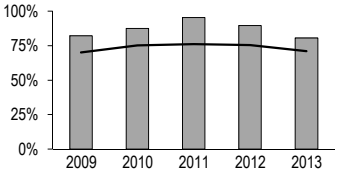
	2009	2010	2011	2012	2013
Hickory	$259	$239	$243	$266	$268
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Hickory	$871	$838	$780	$774	$768
Average	$1,002	$986	$1,009	$1,095	$1,082

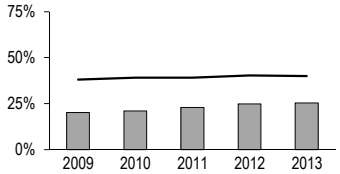
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Hickory	82%	88%	95%	90%	81%
Average	70%	75%	76%	75%	71%

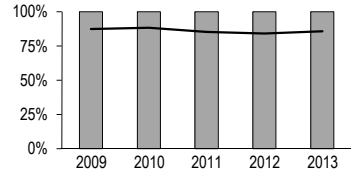
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



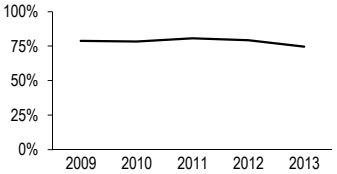
	2009	2010	2011	2012	2013
Hickory	20%	21%	23%	25%	25%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



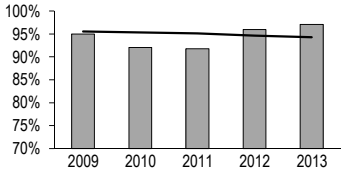
	2009	2010	2011	2012	2013
Hickory	100%	100%	100%	100%	100%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



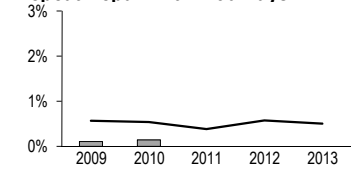
	2009	2010	2011	2012	2013
Hickory					
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Hickory	95%	92%	92%	96%	97%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Hickory	0.11%	0.14%			
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

High Point's Fleet Maintenance Department consists of a director, administrative staff, support staff, and technicians. All activities in this operation are accounted for in an internal service fund, where costs are recovered through maintenance and service charges to other city departments.

Labor is billed at $60 per hour. There is no markup charge on parts sold or sublet work. Parts inventory turned over five times during the fiscal year.

The following services were contracted out:

- body work
- windshield/glass replacements
- front-end alignment
- mufflers/exhaust systems
- after-hours towing
- car washes
- refurbishing special equipment
- upholstery repairs
- hydraulic cylinder and pump rebuilds
- 50 percent of engine and transmission overhauls
- tire repairs for heavy equipment
- maintenance and repairs covered under manufacturer warranty.

Conditions Affecting Service, Performance, and Costs

Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

In High Point, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within certain mileage parameters or every three months, whichever comes first.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977

Service Profile

FTE Positions—Technician	11.0
FTE Positions—Other	9.0
Work Bays	18

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	31	8.0 Years
Cars—Severe Usage	225	8.0 Years
Light Vehicles	265	8.0 Years
Medium Vehicles	30	10.0 Years
Heavy—Sanitation	25	8.0 Years
Heavy—Sewer	3	8.0 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	59	10.0 Years
Trailed Equipment	116	10.0 Years
Off-Road/Construction/Tractors	170	10.0 Years
Buses	0	NA
TOTAL	924	

Vehicle Equivalent Units (VEUs)	2,787
Average Rolling Stock Units Available per Day	887
Hours Billed	11,914
Work Orders	4,831
Repeat Repairs within 30 Days	48
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	2,279
PMs Completed as Scheduled	2,165

Full Cost Profile

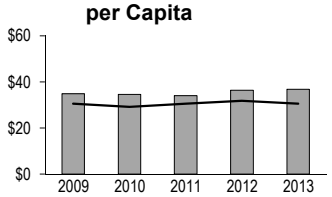
Cost Breakdown by Percentage	
Personal Services	35.8%
Operating Costs	60.4%
Capital Costs	3.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,400,853
Operating Costs	$2,362,374
Capital Costs	$147,048
TOTAL	$3,910,275

High Point — Fleet Maintenance

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

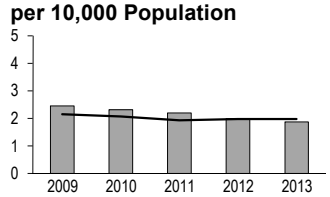
Resource Measures

Fleet Maintenance Services Cost per Capita



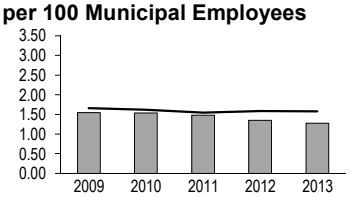
	2009	2010	2011	2012	2013
High Point	$34.87	$34.54	$34.05	$36.30	$36.75
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	2.45	2.32	2.19	1.99	1.88
Average	2.16	2.07	1.93	1.97	1.98

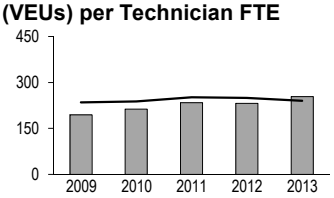
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
High Point	1.55	1.54	1.48	1.35	1.28
Average	1.66	1.62	1.55	1.59	1.58

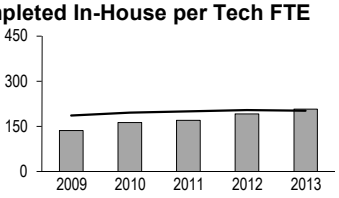
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
High Point	194	213	234	232	253
Average	235	238	252	249	240

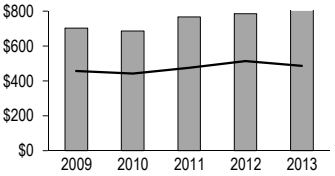
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
High Point	136	162	170	191	207
Average	186	196	200	205	202

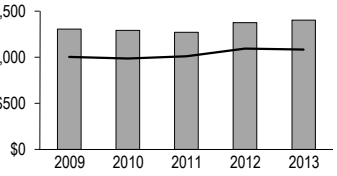
Efficiency Measures

Fleet Maintenance Cost per Work Order



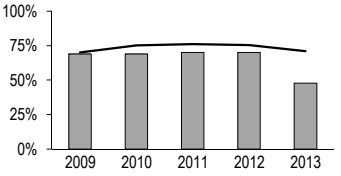
	2009	2010	2011	2012	2013
High Point	$702	$686	$767	$786	$809
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
High Point	$1,306	$1,292	$1,272	$1,374	$1,403
Average	$1,002	$986	$1,009	$1,095	$1,082

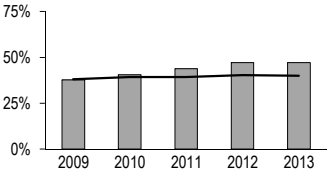
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
High Point	69%	69%	70%	70%	48%
Average	70%	75%	76%	75%	71%

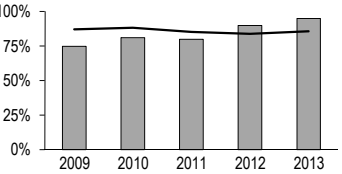
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



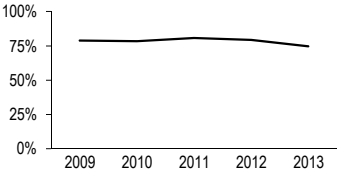
	2009	2010	2011	2012	2013
High Point	38%	40%	44%	47%	47%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



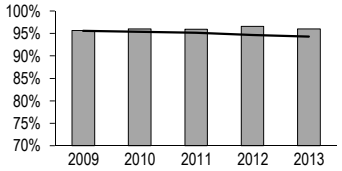
	2009	2010	2011	2012	2013
High Point	75%	81%	80%	90%	95%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



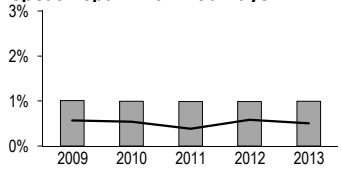
	2009	2010	2011	2012	2013
High Point					
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
High Point	96%	96%	96%	97%	96%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
High Point	1.01%	1.00%	0.99%	0.98%	0.99%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet Maintenance is a division of the Public Services Department and operates the fleet and transit shops. All activities in this operation are accounted for in Salisbury's general fund.

There is no markup on any parts sold or sublet work performed on city vehicles. However, for work done on vehicles owned by other local governments, such as the county, the city charges for labor and includes a markup on parts and sublet work.

The following services were contracted out:

- body work
- exhaust system repairs
- towing.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

In Salisbury, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty days of scheduled maintenance or within defined mileage parameters.

In addition to maintenance responsibilities for the city's rolling stock, the fleet maintenance division also maintains vehicles for Rowan County and two trolleys for downtown Salisbury. The division also has responsibility for equipment, including generators, water pumps, hydraulic power units, mowers, tamps, weedwhackers, jack hammers, rescue equipment, air compressors, sidewalk sweepers, thermo plastic equipment, hydraulic hammers, pavement saws, chain saws, and other city equipment

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508

Service Profile

FTE Positions—Technician	10.0
FTE Positions—Other	3.0
Work Bays	14

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	12	8.3 Years
Cars—Severe Usage	77	6.0 Years
Light Vehicles	137	8.2 Years
Medium Vehicles	27	8.6 Years
Heavy—Sanitation	11	9.6 Years
Heavy—Sewer	3	9.3 Years
Heavy—Fire Apparatus	13	14.6 Years
Heavy—Other	26	11.7 Years
Trailed Equipment	92	14.0 Years
Off-Road/Construction/Tractors	80	11.8 Years
Buses	9	8.2 Years
TOTAL	487	

Vehicle Equivalent Units (VEUs)	1,596
Average Rolling Stock Units Available per Day	472
Hours Billed	NA
Work Orders	6,006
Repeat Repairs within 30 Days	8
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	1,440
PMs Completed as Scheduled	1,382

Full Cost Profile

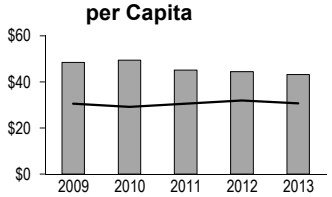
Cost Breakdown by Percentage	
Personal Services	45.9%
Operating Costs	49.5%
Capital Costs	4.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$662,479
Operating Costs	$714,310
Capital Costs	$65,558
TOTAL	$1,442,347

Salisbury — Fleet Maintenance

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

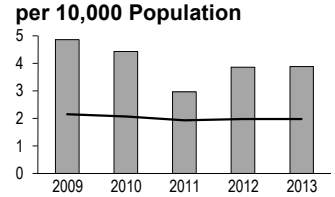
Resource Measures

Fleet Maintenance Services Cost per Capita



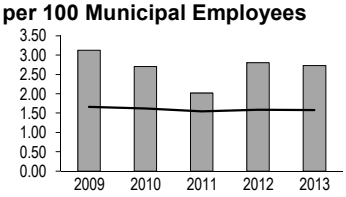
	2009	2010	2011	2012	2013
Salisbury	$48.45	$49.40	$45.16	$44.40	$43.13
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	4.86	4.43	2.97	3.86	3.89
Average	2.16	2.07	1.93	1.97	1.98

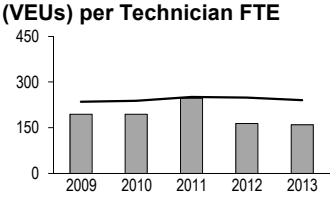
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Salisbury	3.13	2.71	2.02	2.81	2.73
Average	1.66	1.62	1.55	1.59	1.58

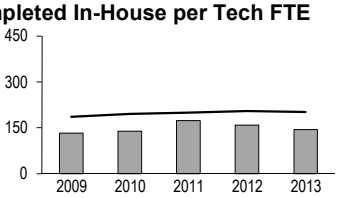
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Salisbury	194	194	247	164	160
Average	235	238	252	249	240

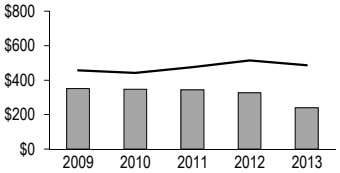
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Salisbury	133	139	174	159	144
Average	186	196	200	205	202

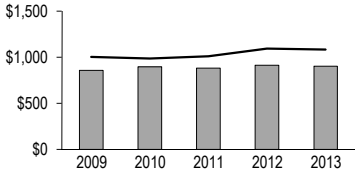
Efficiency Measures

Fleet Maintenance Cost per Work Order



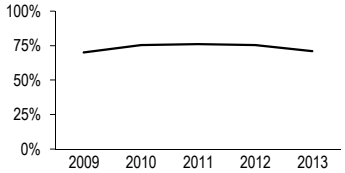
	2009	2010	2011	2012	2013
Salisbury	$351	$347	$343	$328	$240
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Salisbury	$858	$894	$880	$913	$902
Average	$1,002	$986	$1,009	$1,095	$1,082

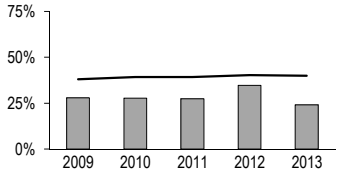
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Salisbury					
Average	70%	75%	76%	75%	71%

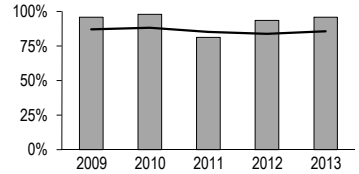
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



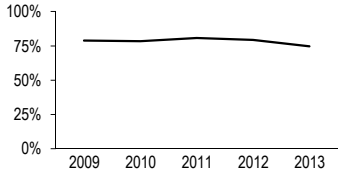
	2009	2010	2011	2012	2013
Salisbury	28%	28%	27%	35%	24%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



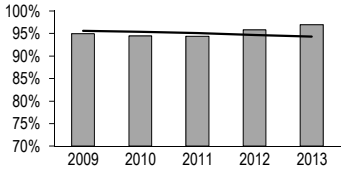
	2009	2010	2011	2012	2013
Salisbury	96%	98%	81%	94%	96%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



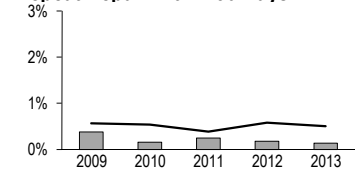
	2009	2010	2011	2012	2013
Salisbury					
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Salisbury	95%	94%	94%	96%	97%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Salisbury	0.38%	0.16%	0.25%	0.18%	0.13%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Fleet Management Division is a part of the Finance Department. All activities in this operation are accounted for in an internal service fund, where costs are recovered through maintenance and service charges to other city departments. Fleet Management leases city-owned vehicles to the other city departments for an annual fee that covers all preventive maintenance, insurance, and replacement fund contributions. Repairs that are required because of misuse and abuse are not covered and are billed back to departments. The city also contracts with Cape Fear Public Utility Authority to provide maintenance on more than 200 pieces of rolling stock under a service contract with the utililty that went into effect in FY 2011–12.

The division charged a $68-per-hour labor rate for all services. There was a 10 percent markup for special order parts sold but no markup for other parts or sublet work. There is a markup on fuel, which is used to support fleet maintenance.

The following services were contracted out: wrecker service, body repairs, transmission repairs, engine overhauls, exhaust repairs, front-end alignments on medium and heavy trucks, some tire repairs, some hydraulic repairs, vehicle washes, and other miscellaneous work when workload is too heavy.

Conditions Affecting Service, Performance, and Costs

Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent. Wilmington indicated that 7.54 technician full-time equivalents (FTEs) were actually working during FY 2012–13 for this calculation.

In Wilmington, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is within thirty calendar days of scheduled date or within mileage parameters.

In addition to maintenance responsibilities for rolling stock, the Fleet Management Division in Wilmington maintains some non-rolling pieces of equipment and does some fabrication and welding as needed. Equipment maintained includes small portable generators, pumps, saws, mowers, and other city equipment.

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130

Service Profile

FTE Positions—Technician	8.0
FTE Positions—Other	4.0
Work Bays	20

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	87	7.6 Years
Cars—Severe Usage	188	5.7 Years
Light Vehicles	131	9.2 Years
Medium Vehicles	39	12.1 Years
Heavy—Sanitation	33	9.1 Years
Heavy—Sewer	3	4.1 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	18	10.4 Years
Trailed Equipment	9	17.2 Years
Off-Road/Construction/Tractors	38	9.5 Years
Buses	2	6.6 Years
TOTAL	548	

Vehicle Equivalent Units (VEUs)	1,813
Average Rolling Stock Units Available per Day	540
Hours Billed	11,933
Work Orders	3,677
Repeat Repairs within 30 Days	34
Work Orders Completed within 24 hours	1,948
Preventive Maintenance Jobs (PMs)	1,569
PMs Completed as Scheduled	1,089

Full Cost Profile

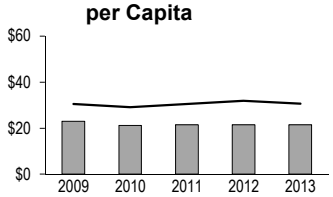
Cost Breakdown by Percentage	
Personal Services	32.6%
Operating Costs	64.2%
Capital Costs	3.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$768,430
Operating Costs	$1,510,545
Capital Costs	$75,573
TOTAL	$2,354,548

Wilmington — Fleet Maintenance

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

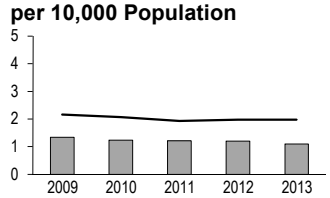
Resource Measures

Fleet Maintenance Services Cost per Capita



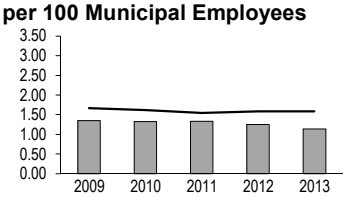
	2009	2010	2011	2012	2013
Wilmington	$22.95	$21.22	$21.53	$21.41	$21.47
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	1.34	1.23	1.22	1.20	1.09
Average	2.16	2.07	1.93	1.97	1.98

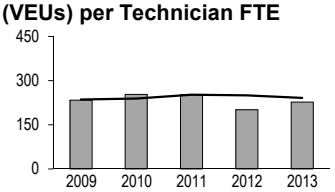
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilmington	1.35	1.32	1.33	1.25	1.14
Average	1.66	1.62	1.55	1.59	1.58

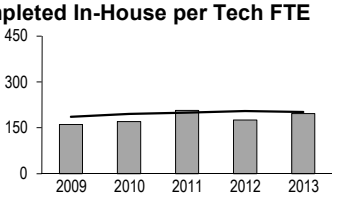
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Wilmington	234	253	252	201	227
Average	235	238	252	249	240

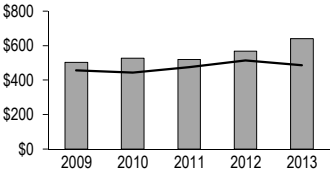
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Wilmington	161	170	207	176	196
Average	186	196	200	205	202

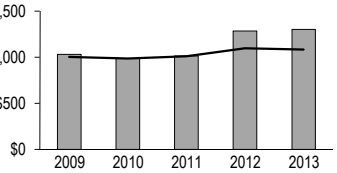
Efficiency Measures

Fleet Maintenance Cost per Work Order



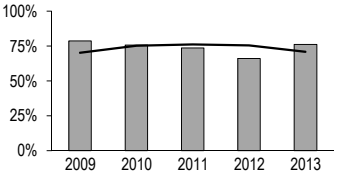
	2009	2010	2011	2012	2013
Wilmington	$502	$527	$520	$568	$640
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Wilmington	$1,029	$984	$1,014	$1,282	$1,299
Average	$1,002	$986	$1,009	$1,095	$1,082

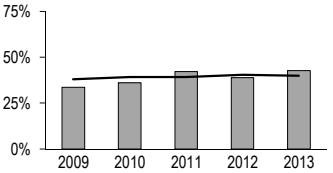
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Wilmington	79%	76%	74%	66%	76%
Average	70%	75%	76%	75%	71%

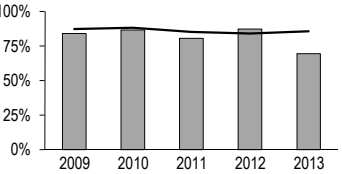
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



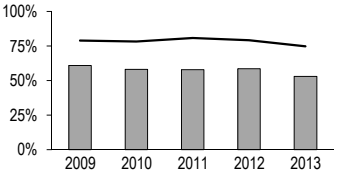
	2009	2010	2011	2012	2013
Wilmington	34%	36%	42%	39%	43%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



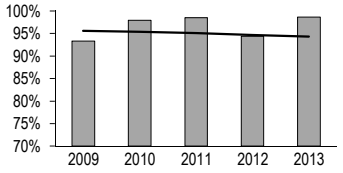
	2009	2010	2011	2012	2013
Wilmington	84%	87%	81%	87%	69%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



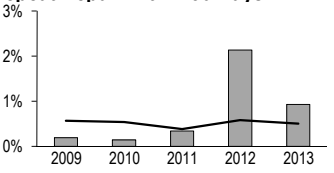
	2009	2010	2011	2012	2013
Wilmington	61%	58%	58%	58%	53%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Wilmington	93%	98%	98%	94%	99%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Wilmington	0.19%	0.14%	0.34%	2.13%	0.92%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet maintenance is a division housed within the Department of Public Services. All activities in this operation are accounted for in the general fund.

Charges for maintenance services included a $44-per-hour labor rate, a 25 percent markup charge on parts sold, and a 5 percent markup charge on sublet work.

The following services were contracted out:

- body repairs
- paint work
- wrecker service
- radiator repairs
- alignment
- muffler repairs.

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent.

In Wilson, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" varies, including both calendar and mileage standards.

In addition to rolling stock, Wilson's fleet services has maintenance responsibilities for generators, mowers, tamps, leaf machines, water pumps, and other city equipment.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718

Service Profile

FTE Positions—Technician	12.0
FTE Positions—Other	5.0
Work Bays	15

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	36	12.0 Years
Cars—Severe Usage	116	7.0 Years
Light Vehicles	175	9.0 Years
Medium Vehicles	36	12.0 Years
Heavy—Sanitation	35	6.5 Years
Heavy—Sewer	6	9.5 Years
Heavy—Fire Apparatus	11	14.0 Years
Heavy—Other	66	9.0 Years
Trailed Equipment	138	10.5 Years
Off-Road/Construction/Tractors	145	12.0 Years
Buses	6	8.0 Years
TOTAL	770	

Vehicle Equivalent Units (VEUs)	2,706
Average Rolling Stock Units Available per Day	732
Hours Billed	17,942
Work Orders	6,730
Repeat Repairs within 30 Days	33
Work Orders Completed within 24 hours	5,720
Preventive Maintenance Jobs (PMs)	1,561
PMs Completed as Scheduled	1,404

Full Cost Profile

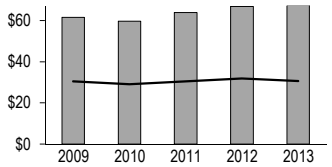
Cost Breakdown by Percentage	
Personal Services	31.1%
Operating Costs	64.5%
Capital Costs	4.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,110,603
Operating Costs	$2,304,403
Capital Costs	$156,317
TOTAL	$3,571,323

Wilson — Fleet Maintenance

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

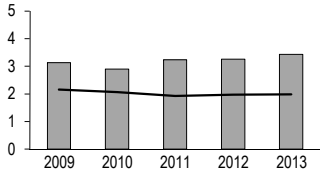
Resource Measures

Fleet Maintenance Services Cost per Capita



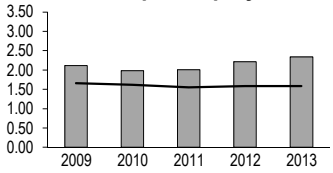
	2009	2010	2011	2012	2013
Wilson	$61.55	$59.69	$63.76	$66.83	$72.24
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	3.13	2.90	3.24	3.26	3.44
Average	2.16	2.07	1.93	1.97	1.98

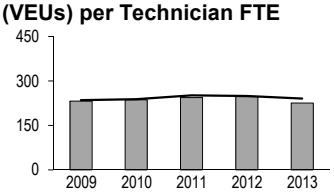
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilson	2.11	1.98	2.01	2.22	2.34
Average	1.66	1.62	1.55	1.59	1.58

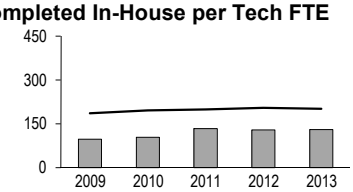
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Wilson	231	236	244	246	226
Average	235	238	252	249	240

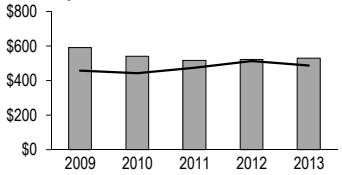
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Wilson	98	105	134	130	130
Average	186	196	200	205	202

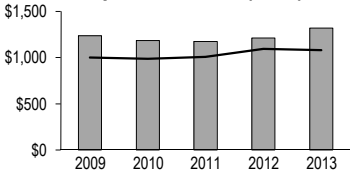
Efficiency Measures

Fleet Maintenance Cost per Work Order



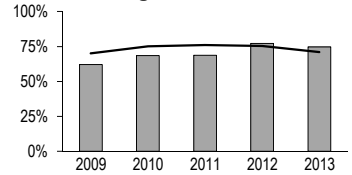
	2009	2010	2011	2012	2013
Wilson	$592	$542	$517	$522	$531
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Wilson	$1,236	$1,187	$1,175	$1,212	$1,320
Average	$1,002	$986	$1,009	$1,095	$1,082

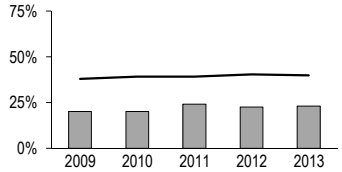
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Wilson	62%	68%	69%	77%	75%
Average	70%	75%	76%	75%	71%

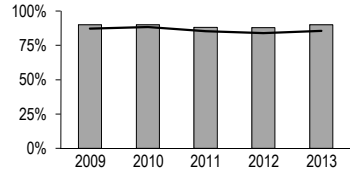
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



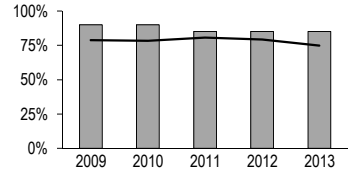
	2009	2010	2011	2012	2013
Wilson	20%	20%	24%	23%	23%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



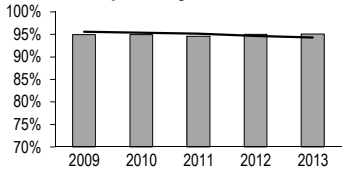
	2009	2010	2011	2012	2013
Wilson	90%	90%	88%	88%	90%
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



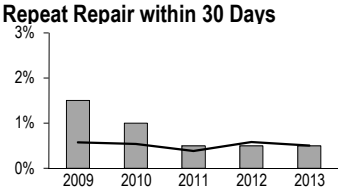
	2009	2010	2011	2012	2013
Wilson	90%	90%	85%	85%	85%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Wilson	95%	95%	95%	95%	95%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2009	2010	2011	2012	2013
Wilson	1.50%	1.00%	0.49%	0.49%	0.49%
Average	0.57%	0.54%	0.38%	0.58%	0.50%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Fleet Services is a division of the Property and Facilities Management Department, consisting of eight units: vehicle maintenance administration, contract monitoring administration, heavy equipment, service station, vehicle leasing, parts, light equipment, and tire shop. All activities in this operation are accounted for in an internal service fund.

Charges for maintenance services included a $50-per-hour labor rate, a 26 percent markup charge for parts sold, and a 13 percent markup charge for sublet work.

The following services were contracted out:

- body work
- welding
- hydraulic cylinder and pump repair
- glass repair
- towing
- transmission repair

Conditions Affecting Service, Performance, and Costs
Vehicle Equivalent Units (VEUs) are a weighted measure of the maintenance effort associated with different classes of vehicles. A normal-use car is considered equal to one VEU. Vehicles such as fire trucks or police cars have higher VEUs, reflecting greater expected levels of maintenance.

The measure "hours billed as a percentage of total hours" is based on a work year of 2,080 hours and only counts those positions that were filled. It should be noted that technicians have responsibilities that do not result in billable hours and they take normal vacation and sick leave. Therefore this percentage should not be expected to be near 100 percent. Winston-Salem indicated that 12.85 technician FTEs were actually working during FY 2012–13 for this calculation.

Results for the measures "percentage of PMs completed as scheduled" and "percentage of work orders requiring repeat repairs within 30 days" were not available.

In addition to rolling stock, Winston-Salem's Fleet Services has maintenance responsibilities for mowers, weedeaters, water pumps, chain saws, wacker tamps, pavement stripers, tractor implements, leaf blowers, power trimmers, salt spreaders, snow plows, and other city equipment.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761

Service Profile

FTE Positions—Technician	19.0
FTE Positions—Other	12.0
Work Bays	31

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	247	7.2 Years
Cars—Severe Usage	448	4.9 Years
Light Vehicles	423	8.1 Years
Medium Vehicles	134	10.6 Years
Heavy—Sanitation	61	8.7 Years
Heavy—Sewer	8	9.8 Years
Heavy—Fire Apparatus	31	NA
Heavy—Other	0	NA
Trailed Equipment	144	16.8 Years
Off-Road/Construction/Tractors	258	13.4 Years
Buses	0	NA
TOTAL	1,754	

Vehicle Equivalent Units (VEUs)	5,383
Average Rolling Stock Units Available per Day	1,642
Hours Billed	23,517
Work Orders	10,127
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	7,138
Preventive Maintenance Jobs (PMs)	5,153
PMs Completed as Scheduled	NA

Full Cost Profile

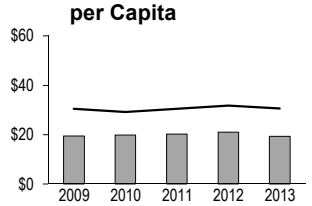
Cost Breakdown by Percentage	
Personal Services	27.4%
Operating Costs	71.0%
Capital Costs	1.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,235,293
Operating Costs	$3,203,238
Capital Costs	$75,058
TOTAL	$4,513,589

Winston-Salem Fleet Maintenance

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

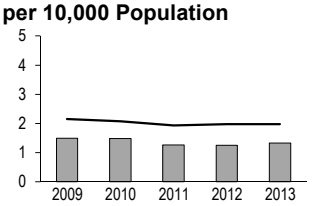
Resource Measures

Fleet Maintenance Services Cost per Capita



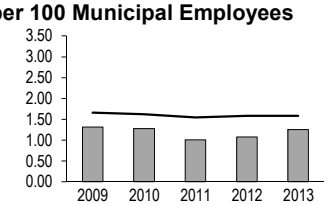
	2009	2010	2011	2012	2013
Winston-Salem	$19.55	$19.82	$20.27	$21.10	$19.35
Average	$30.54	$29.15	$30.48	$31.83	$30.59

Fleet Maintenance FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	1.49	1.48	1.26	1.25	1.33
Average	2.16	2.07	1.93	1.97	1.98

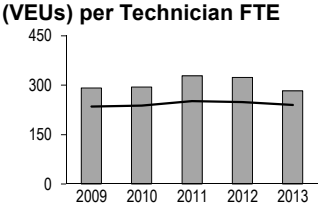
Fleet Maintenance FTEs per 100 Municipal Employees



	2009	2010	2011	2012	2013
Winston-Salem	1.31	1.28	1.01	1.08	1.25
Average	1.66	1.62	1.55	1.59	1.58

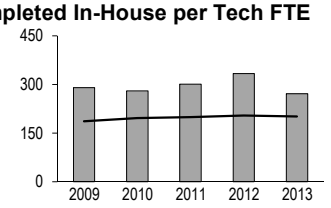
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2009	2010	2011	2012	2013
Winston-Salem	291	294	328	324	283
Average	235	238	252	249	240

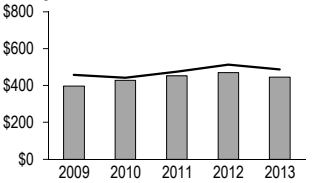
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2009	2010	2011	2012	2013
Winston-Salem	290	280	302	334	271
Average	186	196	200	205	202

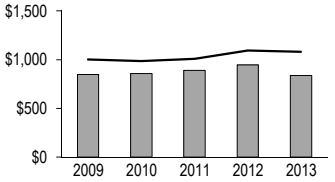
Efficiency Measures

Fleet Maintenance Cost per Work Order



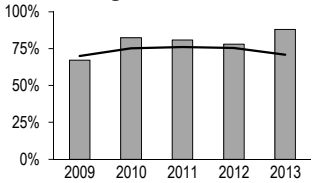
	2009	2010	2011	2012	2013
Winston-Salem	$397	$428	$452	$470	$446
Average	$457	$443	$475	$514	$487

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2009	2010	2011	2012	2013
Winston-Salem	$849	$859	$889	$946	$839
Average	$1,002	$986	$1,009	$1,095	$1,082

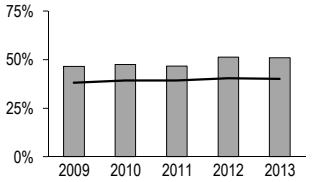
Hours Billed as a Percentage of Total Hours



	2009	2010	2011	2012	2013
Winston-Salem	67%	82%	81%	78%	88%
Average	70%	75%	76%	75%	71%

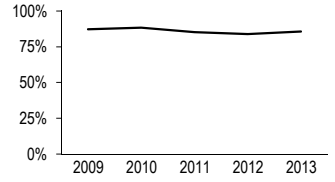
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



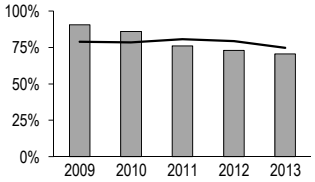
	2009	2010	2011	2012	2013
Winston-Salem	47%	47%	47%	51%	51%
Average	38%	39%	39%	40%	40%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



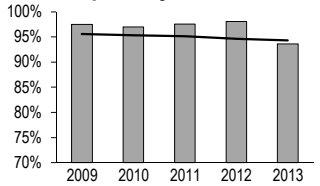
	2009	2010	2011	2012	2013
Winston-Salem					
Average	87%	88%	85%	84%	86%

Percentage of Work Orders Completed within 24 Hours



	2009	2010	2011	2012	2013
Winston-Salem	91%	86%	76%	73%	70%
Average	79%	78%	81%	79%	75%

Percentage of Rolling Stock Available per Day



	2009	2010	2011	2012	2013
Winston-Salem	97%	97%	98%	98%	94%
Average	96%	95%	95%	95%	94%

Percentage of Work Orders Requiring Repeat Repair within 30 Days

	2009	2010	2011	2012	2013
Winston-Salem					
Average	0.57%	0.54%	0.38%	0.58%	0.50%

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

CENTRAL HUMAN RESOURCES

UNC
SCHOOL OF
GOVERNMENT

PERFORMANCE MEASURES FOR CENTRAL HUMAN RESOURCES

SERVICE DEFINITION

Central human resources represents an internal support service. It is characterized by various functions related to the daily management of human capital or personnel, including compensation analysis; position classification; benefits administration; management of employee training and development; employee relations; position control; employee performance evaluations; recruitment and selection; occupational health, wellness, and safety programs; administration of a Human Resources Information System (HRIS); and general administration of the central human resources office. Excluded from the counts here are staff who may be assisting with certain human resource functions but who are not in the central human resources department, such as employees who might be assigned to individual departments. Also excluded from this service area is risk financing, including general liability insurance and workers' compensation.

NOTES ON PERFORMANCE MEASURES

1. Total Workforce FTEs per 10,000 Population

The number of full-time equivalent (FTE) positions includes all permanent full-time and permanent part-time employees budgeted for the municipality. One FTE equates to 2,080 hours of work per year. Any combination of employees providing 2,080 hours of annual work equals one FTE.

2. Number of Applications Received per 100 Employees

Human resources is responsible for the recruitment and selection of applicants to fill new or vacant positions.

3. Number of Position Requisitions per 100 Employees

Position requisitions are submitted to the human resources office by departments seeking to fill vacant positions.

4. Cost per Employee

This measure represents the total cost of human resources for the fiscal year ending June 30 and is calculated using the project's full cost accounting model, which captures direct, indirect, and capital costs. Cost per employee is the primary measure of cost efficiency for this service area.

5. Ratio of Human Resources Staff to Total Workforce

This is a calculation of human resource FTEs divided by the total number of permanent municipal workforce, including full- and part-time staff.

6. Probationary Period Completion Rate (New Hires)

Most organizations require that new employees complete a probationary employment period, typically lasting three to eighteen months from the hire date, depending on the job classification. This effectiveness measure is calculated by dividing the total number of employees that completed the probationary period by the number of employees eligible to complete the probationary period during the fiscal year.

7. Employee Total Turnover Rate
The employee turnover rate is calculated by dividing the total number of separated staff during the fiscal year by the total number of authorized positions.

8. Employee Voluntary Turnover Rate
The voluntary employee turnover rate is calculated by dividing the number of voluntarily separated staff during the fiscal year by the total number of authorized positions. Voluntary separations include retirements and resignations.

9. Percentage of Grievances Resolved at Department Level
Most jurisdictions have a process in place for handling formal grievances filed by employees. This effectiveness measure is calculated by dividing the number of formal grievances that were resolved within the respective department (prior to going to a higher level or third party for resolution) by the total number of grievances filed during the fiscal year.

10. Average Number of Days from Position Post Date to Hire Date
This includes the number of working days from the date a job is posted to the hire date (first day of employment). It includes only recruitments for permanent full-time and part-time positions that were completed during the fiscal year. This measure excludes recruitment of temporary workers.

Central Human Resources

Summary of Key Dimensions of Service

City or Town	Total Number of Authorized Municipal Positions	Average Length of Service (in Years)	Number of Position Requisitions	Number of Employment Applications Processed	Number of Retirees Serviced	Probationary Period	Turnover Rate	Number of HR FTEs
Apex	340	8.6	41	3,146	28	6 & 12 months	8.2%	2.8
Asheville	1,133	9.8	144	7,895	235	6 months	12.7%	15.7
Burlington	1,076	11.5	52	824	10	6 & 12 months	9.6%	3.5
Cary	1,178	10.5	411	9,436	177	6 & 12 months	5.1%	12.3
Charlotte	6,855	11.3	536	90,618	2,475	6 & 12 months	6.4%	33.0
Concord	938	11.0	84	7,834	277	6 & 12 months	5.7%	7.0
Durham	2,942	9.6	222	20,552	500	6 & 12 months	7.9%	20.0
Greensboro	3,175	11.6	365	10,535	1,390	6 & 12 months	7.7%	35.0
Greenville	765	8.0	51	6,650	205	6 & 12 months	6.5%	9.0
Hickory	729	10.0	67	5,536	60	12 months	13.7%	5.0
High Point	1,563	11.4	318	3,345	89	12 months	6.1%	12.5
Salisbury	476	10.4	68	2,018	63	6 & 12 months	14.3%	7.0
Wilmington	1,054	9.9	167	10,526	46	12 & 18 months	8.7%	7.5
Wilson	727	10.5	44	1,922	350	12 months	8.3%	4.5
Winston-Salem	2,876	10.6	316	16,295	427	None	11.2%	18.8

NOTES

For municipalities with varying probationary periods, typically fire and/or police personnel have longer probationary periods.

EXPLANATORY FACTORS

These are factors that the project found affected human resources performance and cost in one or more of the municipalities:

Decentralization of HR functions
Personnel policies
External economic climate
Unemployment rate
Extent of contracting out for services
Departmental discretion regarding vacancies
Hiring freezes
State and/or federal mandates

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Human Resources Department for Apex provides a comprehensive assortment of services, including occupational health and wellness, benefits, recruitment and selection, compensation, employee relations, and training and development programs.

One employee compensation study was completed during the fiscal year covering thirty-two postions. The Town of Apex tries to study one-third of the job classifications every three years and uses a consultant to assist in this process.

The town's probationary period for new employees is six months for general employees and twelve months for sworn police, fire, and EMS personnel.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,544
Median Family Income U.S. Census 2010	$97,201
County Unemployment Rate (2011) N.C. Employment Security Commission	8.3%

Service Profile

Central HR FTE Positions	
Administration	1.0
Generalist/Specialist	1.0
Staff Support/Clerical	0.75
Total Authorized Workforce	340.0
Authorized FTEs	338.8
Average Length of Service (Months)	103.39
Number of Position Requisitions	41
Employment Applications Processed	3,146
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	1
Positions Studied	118
Employee Turnover	
Voluntary Separations	22
Involuntary Separations	6
TOTAL SEPARATIONS	28
Formal Grievances Filed by Employees	0
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

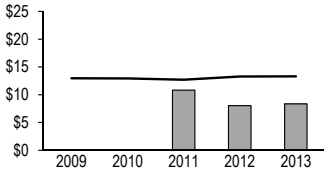
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	61.6%
Operating Costs	35.5%
Capital Costs	2.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$204,886
Operating Costs	$117,963
Capital Costs	$9,620
TOTAL	$332,469

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

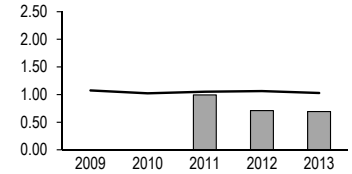
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Apex			$10.83	$8.05	$8.36
Average	$12.96	$12.94	$12.71	$13.26	$13.31

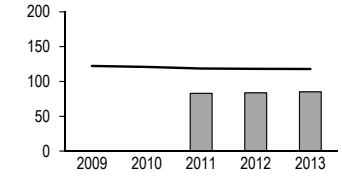
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			0.99	0.71	0.69
Average	1.07	1.02	1.05	1.06	1.03

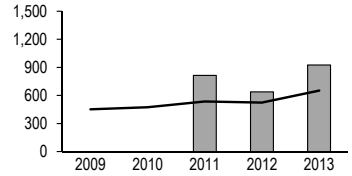
Workload Measures

Total Municipal FTEs per 10,000 Population



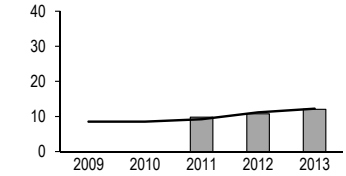
	2009	2010	2011	2012	2013
Apex			83	84	85
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Apex			814	638	925
Average	452	473	535	524	652

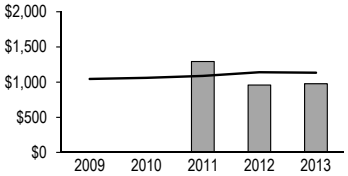
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Apex			9.8	10.8	12.1
Average	8.5	8.5	9.2	11.2	12.2

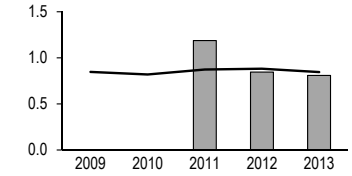
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Apex			$1,293	$958	$978
Average	$1,045	$1,061	$1,088	$1,140	$1,134

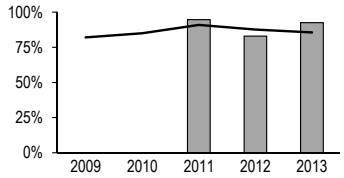
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Apex			1.19	0.85	0.81
Average	0.85	0.82	0.87	0.88	0.85

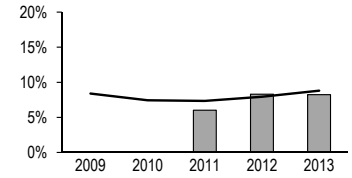
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



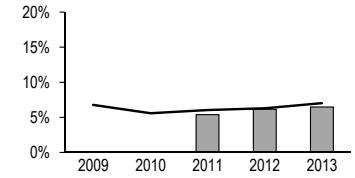
	2009	2010	2011	2012	2013
Apex			95%	83%	93%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



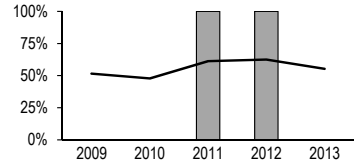
	2009	2010	2011	2012	2013
Apex			6.0%	8.3%	8.2%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



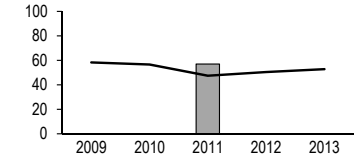
	2009	2010	2011	2012	2013
Apex			5.4%	6.2%	6.5%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Apex			100%	100%	
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Apex			57		
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Human Resources Department provides a comprehensive assortment of services, including occupational health and wellness, benefits, recruitment and selection, compensation, employee relations, and youth development programs.

The city's probationary period for new employees is six months.

Conditions Affecting Service, Performance, and Costs
The city's data include the following positions (and related costs) as part of the city's Human Resources Department: Health Services Supervisor, registered nurse, and administrative staff.

Employee relations issues are resolved through the city's administration.

All advertising costs for vacant positions are now paid for out of the Human Resources budget, with the exception of industry-specific websites or publications specifically requested by the individual departments.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Median Family Income U.S. Census 2010	$53,350
County Unemployment Rate (2011) N.C. Employment Security Commission	8.2%

Service Profile

Central HR FTE Positions	
Administration	4.80
Generalist/Specialist	7.25
Staff Support/Clerical	3.63
Total Authorized Workforce	1,133.0
Authorized FTEs	1,132.2
Average Length of Service (Months)	117
Number of Position Requisitions	144
Employment Applications Processed	7,895
Length of Probationary Employment Period	6 months
Compensation Studies Completed	2
Positions Studied	93
Employee Turnover	
Voluntary Separations	128
Involuntary Separations	16
TOTAL SEPARATIONS	144
Formal Grievances Filed by Employees	14
Equal Employment Opportunity Commission (EEOC) Complaints Filed	2

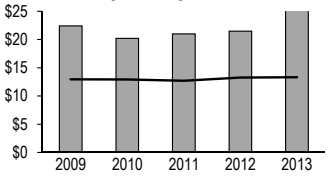
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	56.8%
Operating Costs	42.0%
Capital Costs	1.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,275,394
Operating Costs	$942,823
Capital Costs	$26,349
TOTAL	$2,244,566

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

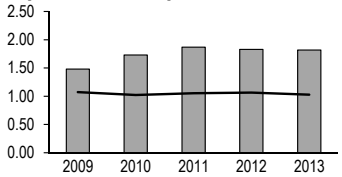
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Asheville	$22.41	$20.20	$20.99	$21.48	$26.04
Average	$12.96	$12.94	$12.71	$13.26	$13.31

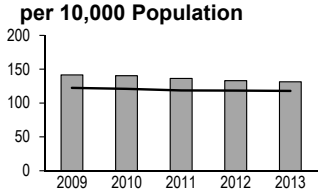
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	1.48	1.73	1.87	1.83	1.82
Average	1.07	1.02	1.05	1.06	1.03

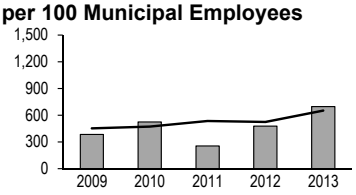
Workload Measures

Total Municipal FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	142	140	136	133	131
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



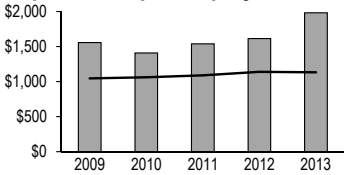
	2009	2010	2011	2012	2013
Asheville	386	524	255	478	697
Average	452	473	535	524	652

Position Requisitions per 100 Municipal Employees

	2009	2010	2011	2012	2013
Asheville	12.8	14.7	10.9	17.3	12.7
Average	8.5	8.5	9.2	11.2	12.2

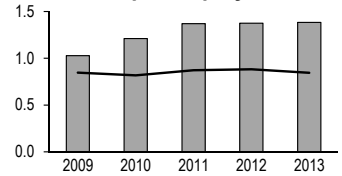
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Asheville	$1,557	$1,410	$1,539	$1,614	$1,981
Average	$1,045	$1,061	$1,088	$1,140	$1,134

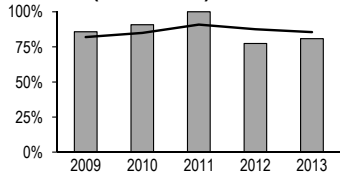
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Asheville	1.03	1.21	1.37	1.38	1.38
Average	0.85	0.82	0.87	0.88	0.85

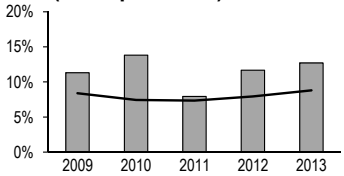
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



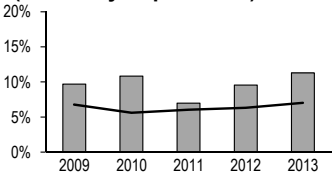
	2009	2010	2011	2012	2013
Asheville	86%	91%	100%	77%	81%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



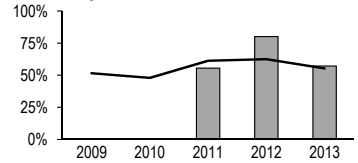
	2009	2010	2011	2012	2013
Asheville	11.3%	13.8%	7.9%	11.7%	12.7%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



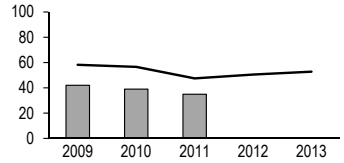
	2009	2010	2011	2012	2013
Asheville	9.7%	10.8%	7.0%	9.6%	11.3%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Asheville			56%	80%	57%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Asheville	42	39	35		
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Burlington's Human Resources (HR) Department is a separate department consisting of four full-time positions: an HR director, two HR specialists, and a staff support person.

The city's probationary period for new employees is twelve months for police and six months for all other employees.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Median Family Income U.S. Census 2010	$46,461
County Unemployment Rate (2011) N.C. Employment Security Commission	10.7%

Service Profile

Central HR FTE Positions	
Administration	1.0
Generalist/Specialist	2.0
Staff Support/Clerical	0.5
Total Authorized Workforce	1,076.0
Authorized FTEs	811.0
Average Length of Service (Months)	138
Number of Position Requisitions	52
Employment Applications Processed	824
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	7
Positions Studied	253
Employee Turnover	
Voluntary Separations	83
Involuntary Separations	20
TOTAL SEPARATIONS	103
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

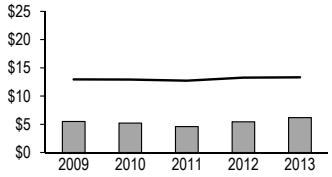
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	76.6%
Operating Costs	22.5%
Capital Costs	1.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$241,717
Operating Costs	$70,881
Capital Costs	$3,116
TOTAL	$315,714

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

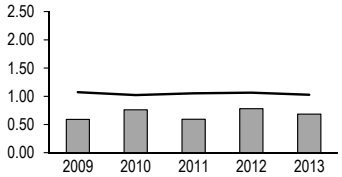
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Burlington	$5.49	$5.22	$4.59	$5.45	$6.17
Average	$12.96	$12.94	$12.71	$13.26	$13.31

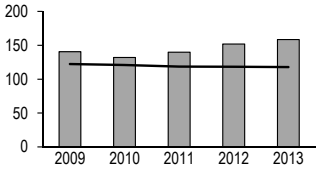
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	0.59	0.76	0.59	0.78	0.68
Average	1.07	1.02	1.05	1.06	1.03

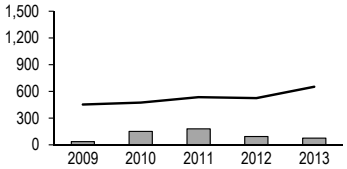
Workload Measures

Total Municipal FTEs per 10,000 Population



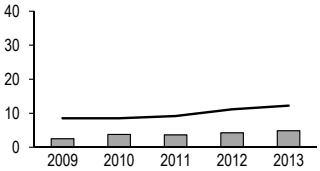
	2009	2010	2011	2012	2013
Burlington	141	132	140	152	158
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Burlington	35	152	179	94	77
Average	452	473	535	524	652

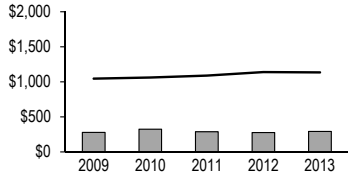
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Burlington	2.5	3.8	3.6	4.3	4.8
Average	8.5	8.5	9.2	11.2	12.2

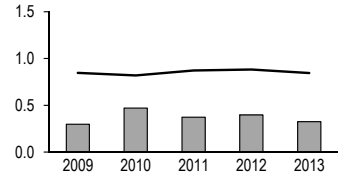
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Burlington	$279	$324	$288	$276	$293
Average	$1,045	$1,061	$1,088	$1,140	$1,134

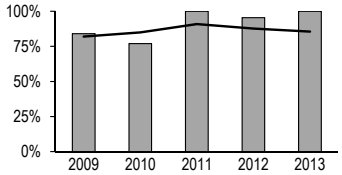
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Burlington	0.30	0.47	0.37	0.40	0.33
Average	0.85	0.82	0.87	0.88	0.85

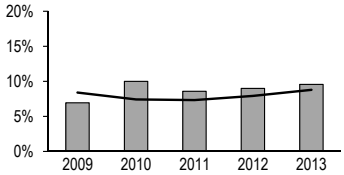
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



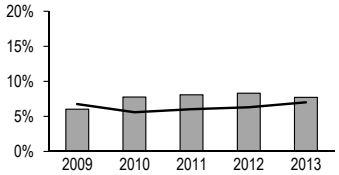
	2009	2010	2011	2012	2013
Burlington	84%	77%	100%	95%	100%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



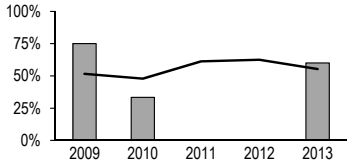
	2009	2010	2011	2012	2013
Burlington	6.9%	10.0%	8.6%	9.0%	9.6%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



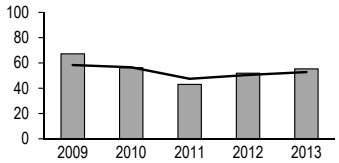
	2009	2010	2011	2012	2013
Burlington	6.0%	7.8%	8.1%	8.3%	7.7%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Burlington	75%	33%	0%		60%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Burlington	67	56	43	52	55
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Cary's Human Resources (HR) Department includes the following: a director, an employee relations manager, an employee benefits manager, a training and development program administrator, an employee safety coordinator, three HR consultants who handle all recruitment and day-to-day employee issues, two HR assistants who support each of the consultants, one safety technician, and two administrative secretaries.

The town conducted one compensation study during FY 2012–13 that involved the study of 430 positions.

The town's probationary period for new employees is six months for non–public safety employees and twelve months for public safety employees.

Conditions Affecting Service, Performance, and Costs

The employee benefits manager also administers workers' compensation. In many other organizations, this function is performed within a risk-management department. The HR assistants also handle many payroll tasks which in other organizations might be handled within the finance department.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Median Family Income U.S. Census 2010	$108,956
County Unemployment Rate (2011) N.C. Employment Security Commission	8.3%

Service Profile

Central HR FTE Positions	
Administration	3.0
Generalist/Specialist	5.0
Staff Support/Clerical	4.25
Total Authorized Workforce	1,178.0
Authorized FTEs	1,167.5
Average Length of Service (Months)	126
Number of Position Requisitions	411
Employment Applications Processed	9,436
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	1
Positions Studied	430
Employee Turnover	
Voluntary Separations	54
Involuntary Separations	6
TOTAL SEPARATIONS	60
Formal Grievances Filed by Employees	1
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

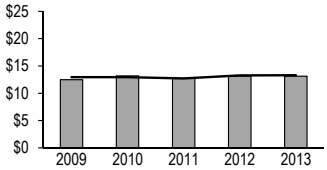
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	56.0%
Operating Costs	42.4%
Capital Costs	1.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,045,960
Operating Costs	$791,091
Capital Costs	$30,752
TOTAL	$1,867,803

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

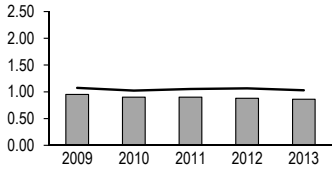
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Cary	$12.47	$13.19	$12.71	$13.13	$13.12
Average	$12.96	$12.94	$12.71	$13.26	$13.31

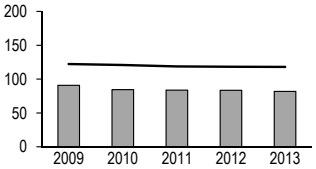
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary	0.95	0.90	0.90	0.88	0.86
Average	1.07	1.02	1.05	1.06	1.03

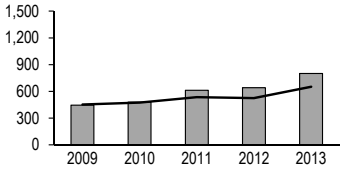
Workload Measures

Total Municipal FTEs per 10,000 Population



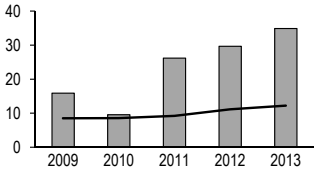
	2009	2010	2011	2012	2013
Cary	91	84	84	83	82
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Cary	445	480	613	640	801
Average	452	473	535	524	652

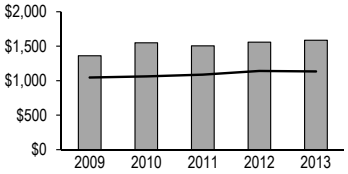
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Cary	15.9	9.5	26.2	29.7	34.9
Average	8.5	8.5	9.2	11.2	12.2

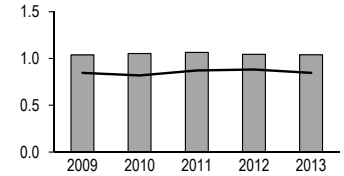
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Cary	$1,361	$1,549	$1,505	$1,559	$1,586
Average	$1,045	$1,061	$1,088	$1,140	$1,134

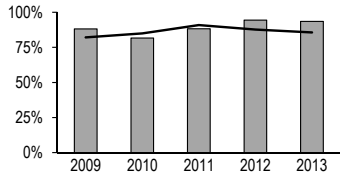
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Cary	1.04	1.05	1.07	1.05	1.04
Average	0.85	0.82	0.87	0.88	0.85

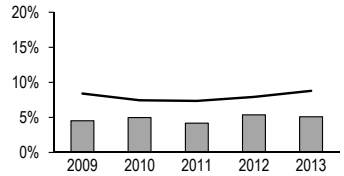
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



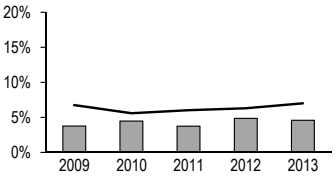
	2009	2010	2011	2012	2013
Cary	88%	82%	88%	94%	93%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



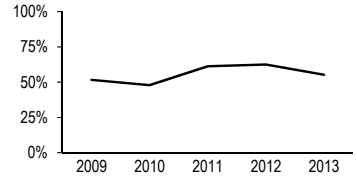
	2009	2010	2011	2012	2013
Cary	4.5%	5.0%	4.2%	5.4%	5.1%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



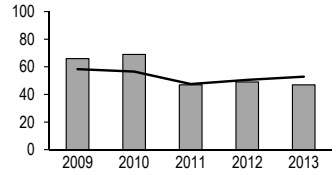
	2009	2010	2011	2012	2013
Cary	3.8%	4.5%	3.7%	4.9%	4.6%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Cary		0%	0%		
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Cary	66	69	47	49	47
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Charlotte's Human Resources Business Unit is organized into five core services: benefits, compensations, business unit services, HRMS/payroll, and organizational development and learning. These functional areas perform a variety of strategic, tactical, and transactional services. Some of the transactional services are outsourced.

During FY 2012–13, nine compensation studies were conducted covering 383 positions. Surveys were done on the basis of national, regional, and other larger city comparisons. There were 90,618 applications processed electronically or online. All applicants (except sworn police and fire positions) must use the PeopleSoft online job application software for each position for which they wish to apply.

The city is self-insured for medical and dental insurance, and third-party administrators are retained to administer the plans. The wellness program, Wellness Works, includes a number of programs, such as tobacco cessation, annual flu shots, blood pressure screenings, onsite education programs, and weight loss programs. The city partners with Provant to administer health coaching and health risk assessments. New in 2011, the city offered a premium differential to employees who take a health screening, complete a health assessment, and engage with a health coach on an ongoing basis.

Conditions Affecting Service, Performance, and Costs

Charlotte has a very robust wellness program. Many resources are devoted to the sucess of this program. There are wellness ambassadors in every department in the city.

The payroll function in many cities is located in finance; it resides in Human Resources in Charlotte. The computation of indirect costs for Human Resources was changed in Fiscal Year 2011–2012, resulting in somewhat higher total costs than would have been the case using the method from prior years.

Municipal Profile

Population (OSBM 2012)	765,464
Land Area (Square Miles)	301.48
Persons per Square Mile	2,539
Median Family Income U.S. Census 2010	$61,405
County Unemployment rate (2011) N.C. Employment Security Commission	10.7%

Service Profile

Central HR FTE Positions	
Administration	6.0
Generalist/Specialist	24.0
Staff Support/Clerical	3.0
Total Authorized Workforce	6,855.0
Authorized FTEs	6,843.75
Average Length of Service (Months)	135
Number of Position Requisitions	536
Employment Applications Processed	90,618
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	9
Positions Studied	383
Employee Turnover	
Voluntary Separations	361
Involuntary Separations	77
TOTAL SEPARATIONS	438
Formal Grievances Filed by Employees	49
Equal Employment Opportunity Commission (EEOC) Complaints Filed	13

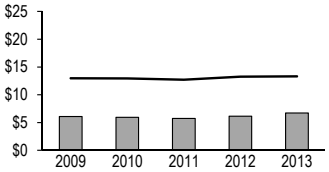
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	63.3%
Operating Costs	36.7%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,257,355
Operating Costs	$1,885,216
Capital Costs	$0
TOTAL	$5,142,571

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

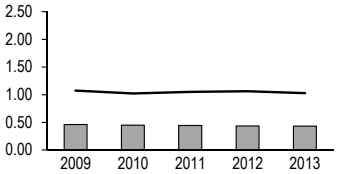
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Charlotte	$6.09	$5.94	$5.74	$6.15	$6.72
Average	$12.96	$12.94	$12.71	$13.26	$13.31

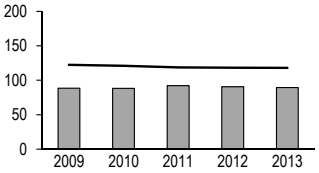
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	0.46	0.45	0.44	0.44	0.43
Average	1.07	1.02	1.05	1.06	1.03

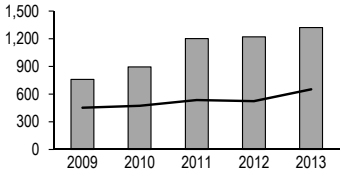
Workload Measures

Total Municipal FTEs per 10,000 Population



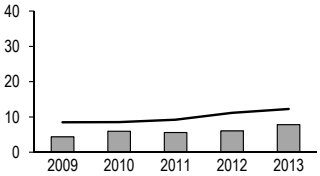
	2009	2010	2011	2012	2013
Charlotte	88	88	92	90	89
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Charlotte	760	895	1,202	1,221	1,322
Average	452	473	535	524	652

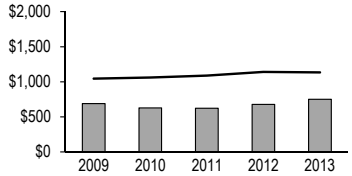
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Charlotte	4.4	5.9	5.6	6.1	7.8
Average	8.5	8.5	9.2	11.2	12.2

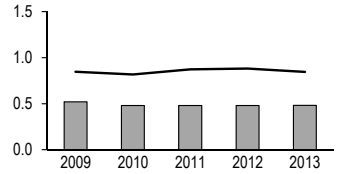
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Charlotte	$688	$627	$623	$678	$750
Average	$1,045	$1,061	$1,088	$1,140	$1,134

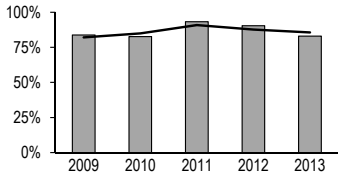
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Charlotte	0.52	0.48	0.48	0.48	0.48
Average	0.85	0.82	0.87	0.88	0.85

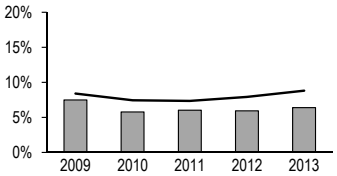
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



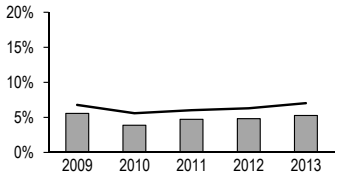
	2009	2010	2011	2012	2013
Charlotte	84%	83%	93%	90%	83%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



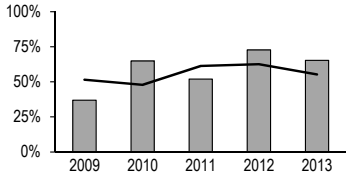
	2009	2010	2011	2012	2013
Charlotte	7.5%	5.8%	6.0%	5.9%	6.4%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



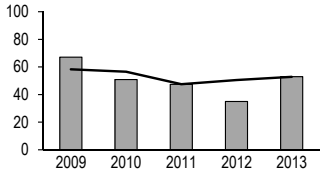
	2009	2010	2011	2012	2013
Charlotte	5.6%	3.9%	4.7%	4.8%	5.3%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Charlotte	37%	65%	52%	73%	65%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Charlotte	67	51	47	35	53
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Human Resources Department for the City of Concord is responsible for the following functions: departmental management, policy design and administration, classification and compensation design and administration, benefits plan design and administration, employee relations, grievance and disciplinary actions, and employee rewards.

The department conducted four compensation studies during FY 2012–13 covering seventy-one positions.

The city's probationary period for new employees is six months for non–public safety employees and twelve months for public safety employees.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Median Family Income U.S. Census 2010	$63,643
County Unemployment Rate (2011) N.C. Employment Security Commission	10.1%

Service Profile

Central HR FTE Positions	
Administration	2.0
Generalist/Specialist	3.0
Staff Support/Clerical	2.0
Total Authorized Workforce	938.0
Authorized FTEs	914.8
Average Length of Service (Months)	132
Number of Position Requisitions	84
Employment Applications Processed	7,834
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	4
Positions Studied	71
Employee Turnover	
Voluntary Separations	42
Involuntary Separations	11
TOTAL SEPARATIONS	53
Formal Grievances Filed by Employees	7
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

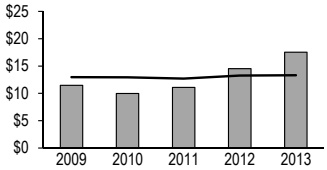
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	39.2%
Operating Costs	59.0%
Capital Costs	1.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$560,272
Operating Costs	$843,408
Capital Costs	$25,210
TOTAL	$1,428,890

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

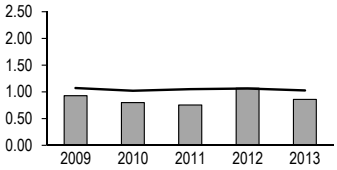
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Concord	$11.47	$9.98	$11.10	$14.51	$17.54
Average	$12.96	$12.94	$12.71	$13.26	$13.31

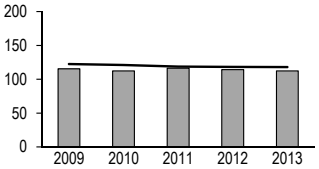
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	0.93	0.80	0.75	1.07	0.86
Average	1.07	1.02	1.05	1.06	1.03

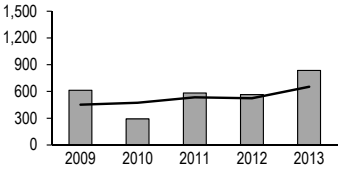
Workload Measures

Total Municipal FTEs per 10,000 Population



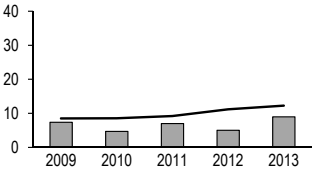
	2009	2010	2011	2012	2013
Concord	115	112	116	114	112
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Concord	614	293	584	565	835
Average	452	473	535	524	652

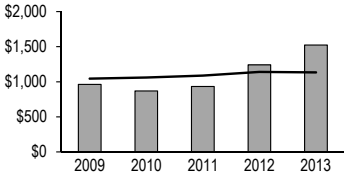
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Concord	7.4	4.7	7.0	5.0	9.0
Average	8.5	8.5	9.2	11.2	12.2

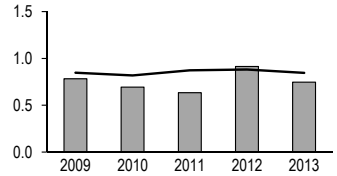
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Concord	$963	$868	$932	$1,241	$1,523
Average	$1,045	$1,061	$1,088	$1,140	$1,134

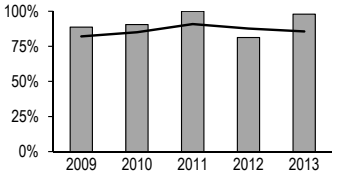
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Concord	0.78	0.69	0.63	0.91	0.75
Average	0.85	0.82	0.87	0.88	0.85

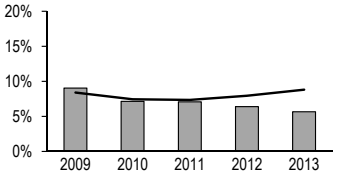
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



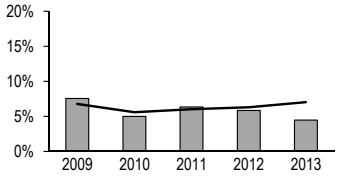
	2009	2010	2011	2012	2013
Concord	89%	90%	100%	81%	98%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



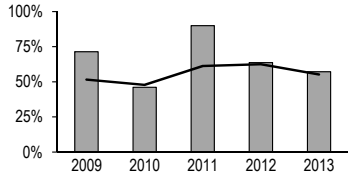
	2009	2010	2011	2012	2013
Concord	9.0%	7.1%	7.1%	6.4%	5.7%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



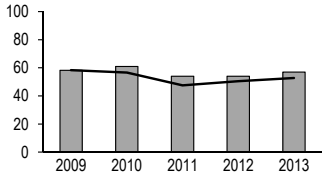
	2009	2010	2011	2012	2013
Concord	7.6%	5.0%	6.3%	5.9%	4.5%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Concord	71%	46%	90%	64%	57%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Concord	58	61	54	54	57
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Human Resources (HR) Department of the City of Durham is organized into teams. Three teams serve specific sets of departments. A fourth team, Planning and Systems, provides basic information for the departmental teams and provides core functions such as benefits and training. A fifth team provides support with management assistants who provide technical and clerical support to the whole HR department.

The department conducted two compensation studies covering fifty-seven positions during FY 2012–13.

The city's probationary period is six months for new employees.

Conditions Affecting Service, Performance, and Costs
Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Median Family Income U.S. Census 2010	$58,976
County Unemployment Rate (2011) N.C. Employment Security Commission	

Service Profile

Central HR FTE Positions	
Administration	7.0
Generalist/Specialist	10.0
Staff Support/Clerical	3.0
Total Authorized Workforce	2,942.0
Authorized FTEs	2,485.0
Average Length of Service (Months)	115
Number of Position Requisitions	222
Employment Applications Processed	20,552
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	2
Positions Studied	57
Employee Turnover	
Voluntary Separations	185
Involuntary Separations	46
TOTAL SEPARATIONS	231
Formal Grievances Filed by Employees	21
Equal Employment Opportunity Commission (EEOC) Complaints Filed	8

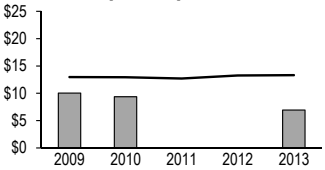
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	93.5%
Operating Costs	4.9%
Capital Costs	1.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,532,654
Operating Costs	$79,587
Capital Costs	$26,101
TOTAL	$1,638,342

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

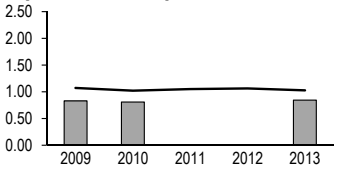
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Durham	$10.04	$9.35			$6.93
Average	$12.96	$12.94	$12.71	$13.26	$13.31

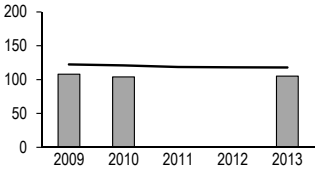
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	0.83	0.81			0.85
Average	1.07	1.02	1.05	1.06	1.03

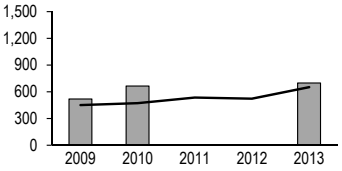
Workload Measures

Total Municipal FTEs per 10,000 Population



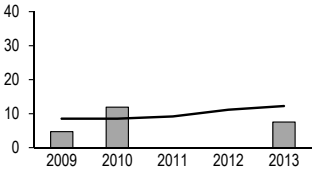
	2009	2010	2011	2012	2013
Durham	108	104			105
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Durham	519	665			699
Average	452	473	535	524	652

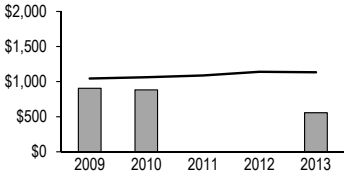
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Durham	4.7	11.9			7.5
Average	8.5	8.5	9.2	11.2	12.2

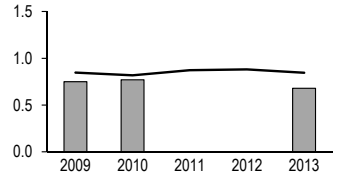
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Durham	$906	$883			$557
Average	$1,045	$1,061	$1,088	$1,140	$1,134

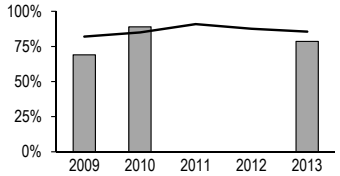
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Durham	0.75	0.77			0.68
Average	0.85	0.82	0.87	0.88	0.85

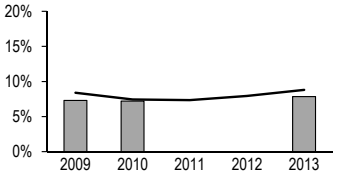
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



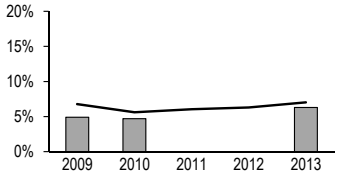
	2009	2010	2011	2012	2013
Durham	69%	89%			79%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



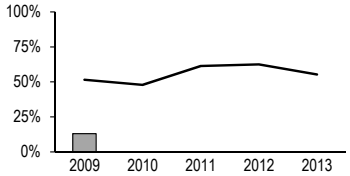
	2009	2010	2011	2012	2013
Durham	7.3%	7.2%			7.9%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



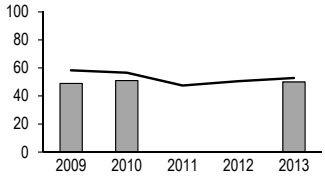
	2009	2010	2011	2012	2013
Durham	4.9%	4.7%			6.3%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Durham	13%				0%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Durham	49	51			50
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Human Resources Department for the City of Greensboro provides comprehensive personnel services, including recruitment and selection, compensation, benefits, employee relations, safety, and occupational health and wellness. The total number of full-time equivalent (FTE) positions includes staff from the Training Division, which is housed in a separate department from Human Resources. The HR department has a staff attorney who is able to provide legal consultation on a variety of issues confronting the HR department.

The city's probationary period for new employees is six months for non–public safety employees and twelve months for public safety employees.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Median Family Income U.S. Census 2010	$52,752
County Unemployment Rate (2011) N.C. Employment Security Commission	10.8%

Service Profile

Central HR FTE Positions	
Administration	8.0
Generalist/Specialist	21.0
Staff Support/Clerical	6.0
Total Authorized Workforce	3,175.0
Authorized FTEs	3,155.0
Average Length of Service (Months)	140
Number of Position Requisitions	365
Employment Applications Processed	10,535
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	0
Positions Studied	NA
Employee Turnover	
Voluntary Separations	196
Involuntary Separations	49
TOTAL SEPARATIONS	245
Formal Grievances Filed by Employees	18
Equal Employment Opportunity Commission (EEOC) Complaints Filed	12

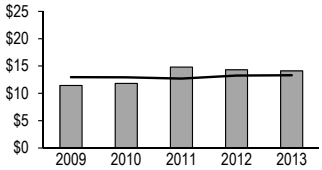
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.3%
Operating Costs	24.7%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,922,497
Operating Costs	$957,925
Capital Costs	$0
TOTAL	$3,880,422

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

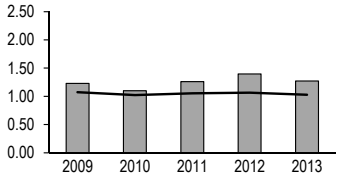
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Greensboro	$11.44	$11.81	$14.82	$14.31	$14.11
Average	$12.96	$12.94	$12.71	$13.26	$13.31

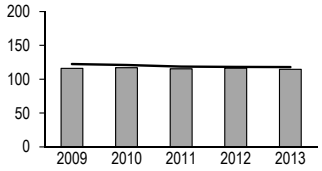
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	1.23	1.10	1.26	1.40	1.27
Average	1.07	1.02	1.05	1.06	1.03

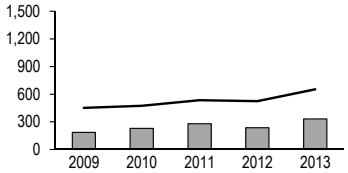
Workload Measures

Total Municipal FTEs per 10,000 Population



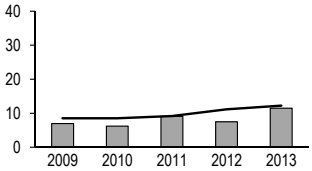
	2009	2010	2011	2012	2013
Greensboro	116	117	115	116	115
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greensboro	187	230	280	237	332
Average	452	473	535	524	652

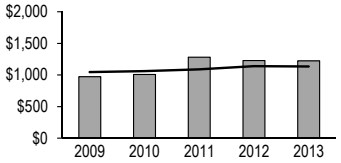
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greensboro	7.0	6.2	9.1	7.5	11.5
Average	8.5	8.5	9.2	11.2	12.2

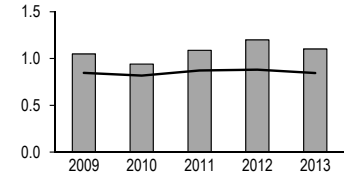
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Greensboro	$972	$1,008	$1,281	$1,229	$1,222
Average	$1,045	$1,061	$1,088	$1,140	$1,134

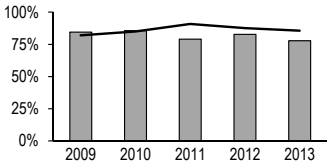
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Greensboro	1.05	0.94	1.09	1.20	1.10
Average	0.85	0.82	0.87	0.88	0.85

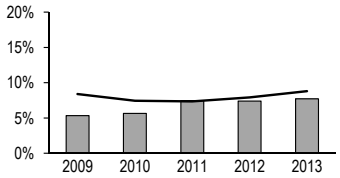
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



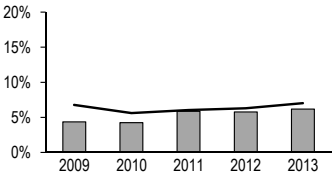
	2009	2010	2011	2012	2013
Greensboro	84%	86%	79%	83%	78%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



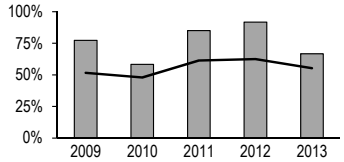
	2009	2010	2011	2012	2013
Greensboro	5.3%	5.6%	7.5%	7.4%	7.7%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



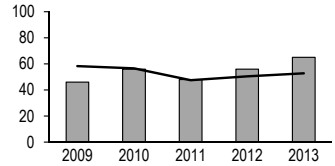
	2009	2010	2011	2012	2013
Greensboro	4.4%	4.2%	5.9%	5.8%	6.2%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Greensboro	77%	58%	85%	92%	67%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Greensboro	46	56	48	56	65
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Human Resources Department for the City of Greenville is responsible for recruitment and selection, salary and benefits administration, position classification, employee relations, affirmative action and equal employment opportunity, training and development, risk administration, and safety.

The city's probationary period is twelve months for all law enforcement personnel and employees in a trainee status, such as fire/rescue trainees. All other employees serve a six-month probationary period.

Nearly all employment applications are processed online. The Human Resources Department screens applications to ensure that applicants meet the position minimum qualifications. Applications are only accepted for positions that are open for recruitment.

Greenville has a voluntary wellness program focusing on education, fitness, mental health, nutrition, weight management, personal health, and personal safety. A safety specialist provides technical safety and occupational illness and injury prevention training.

A formal employee in Greenville requires a written notice given to a supervisor appealing a disciplinary action. The grievance process is an internal one, moving up the chain of command with specific timeframes for responses and appeals to the next level.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Median Family Income U.S. Census 2010	$50,395
County Unemployment Rate (2011) N.C. Employment Security Commission	10.8%

Service Profile

Central HR FTE Positions	
Administration	4.0
Generalist/Specialist	2.0
Staff Support/Clerical	3.0
Total Authorized Workforce	765.0
Authorized FTEs	761.75
Average Length of Service (Months)	96
Number of Position Requisitions	51
Employment Applications Processed	6,650
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	0
Positions Studied	na
Employee Turnover	
Voluntary Separations	45
Involuntary Separations	5
TOTAL SEPARATIONS	50
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	2

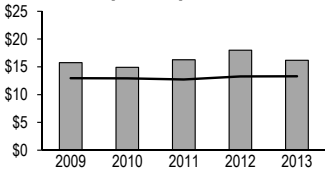
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	63.4%
Operating Costs	36.6%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$883,984
Operating Costs	$510,429
Capital Costs	$0
TOTAL	$1,394,413

Key: Greenville ■ Benchmarking Average — Fiscal Years 2009 through 2013

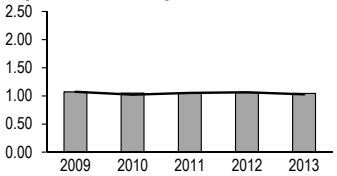
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Greenville	$15.75	$14.92	$16.27	$17.98	$16.19
Average	$12.96	$12.94	$12.71	$13.26	$13.31

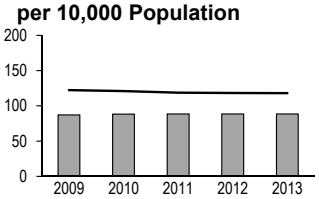
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greenville	1.07	1.05	1.06	1.06	1.04
Average	1.07	1.02	1.05	1.06	1.03

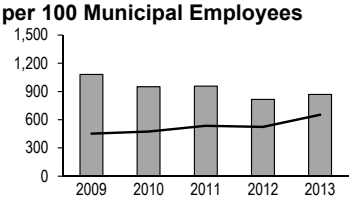
Workload Measures

Total Municipal FTEs per 10,000 Population



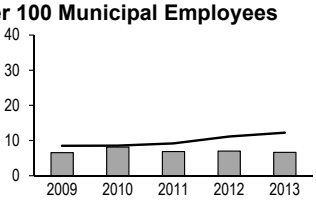
	2009	2010	2011	2012	2013
Greenville	87	88	88	88	88
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greenville	1,080	950	957	816	869
Average	452	473	535	524	652

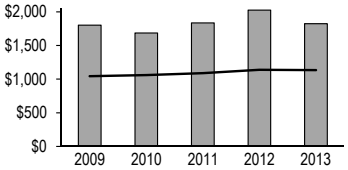
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Greenville	6.6	8.2	6.9	7.0	6.7
Average	8.5	8.5	9.2	11.2	12.2

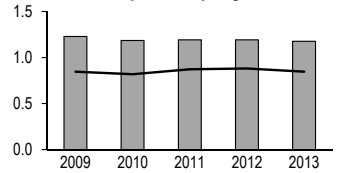
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Greenville	$1,802	$1,685	$1,835	$2,026	$1,823
Average	$1,045	$1,061	$1,088	$1,140	$1,134

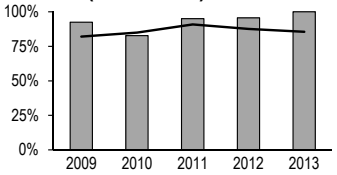
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Greenville	1.23	1.19	1.19	1.19	1.18
Average	0.85	0.82	0.87	0.88	0.85

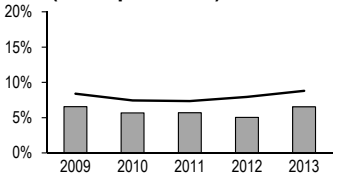
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



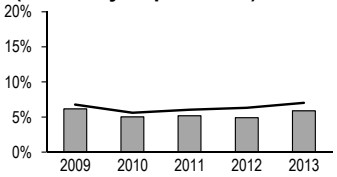
	2009	2010	2011	2012	2013
Greenville	93%	83%	95%	96%	100%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



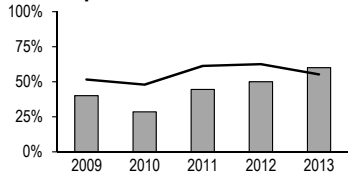
	2009	2010	2011	2012	2013
Greenville	6.6%	5.7%	5.7%	5.0%	6.5%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



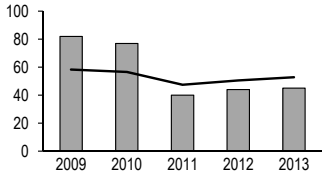
	2009	2010	2011	2012	2013
Greenville	6.1%	5.0%	5.2%	4.9%	5.9%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Greenville	40%	29%	44%	50%	60%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Greenville	82	77	40	44	45
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The human resources function for the City of Hickory contains a director, an organizational development coordinator, a city nurse, two human resources analysts (one oversees benefits administration and the other oversees general employment), and one clerical position. Risk management is a division of the human resources function, which includes a risk manager and a clerical support position.

The city's probationary period is twelve months for all new city employees. The city conducted five compensation studies during the year.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Median Family Income U.S. Census 2010	$54,093
County Unemployment rate (2011) N.C. Employment Security Commission	12.7%

Service Profile

Central HR FTE Positions	
Administration	0.25
Generalist/Specialist	4.0
Staff Support/Clerical	0.75
Total Authorized Workforce	729.0
Authorized FTEs	688.0
Average Length of Service (Months)	120
Number of Position Requisitions	67
Employment Applications Processed	5,536
Length of Probationary Employment Period	12 months
Compensation Studies Completed	5
Positions Studied	2
Employee Turnover	
Voluntary Separations	91
Involuntary Separations	9
TOTAL SEPARATIONS	100
Formal Grievances Filed by Employees	0
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

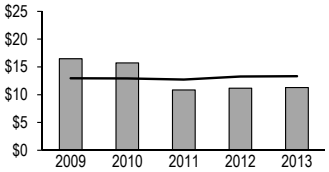
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.6%
Operating Costs	29.4%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$319,023
Operating Costs	$133,022
Capital Costs	$0
TOTAL	$452,045

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

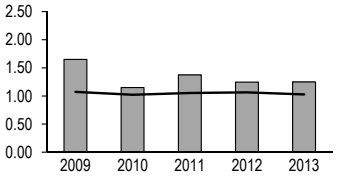
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Hickory	$16.48	$15.71	$10.86	$11.18	$11.29
Average	$12.96	$12.94	$12.71	$13.26	$13.31

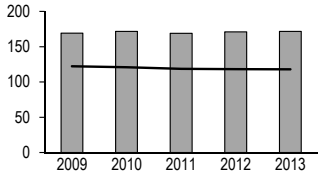
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	1.65	1.15	1.37	1.25	1.25
Average	1.07	1.02	1.05	1.06	1.03

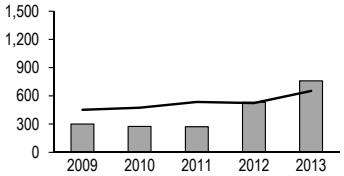
Workload Measures

Total Municipal FTEs per 10,000 Population



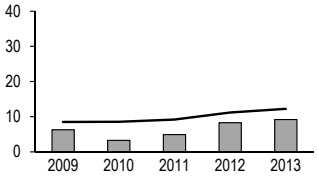
	2009	2010	2011	2012	2013
Hickory	169	172	169	171	172
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Hickory	301	274	271	532	759
Average	452	473	535	524	652

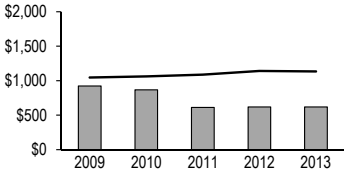
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Hickory	6.3	3.3	4.9	8.3	9.2
Average	8.5	8.5	9.2	11.2	12.2

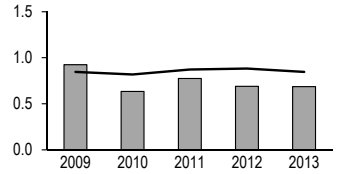
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Hickory	$922	$867	$611	$618	$620
Average	$1,045	$1,061	$1,088	$1,140	$1,134

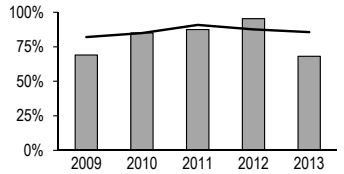
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Hickory	0.92	0.63	0.77	0.69	0.69
Average	0.85	0.82	0.87	0.88	0.85

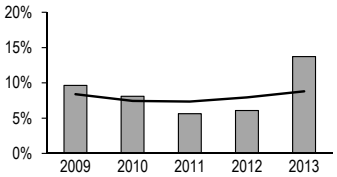
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



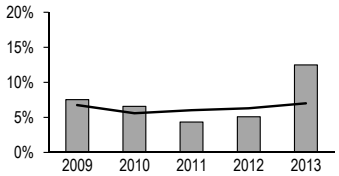
	2009	2010	2011	2012	2013
Hickory	69%	85%	88%	95%	68%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



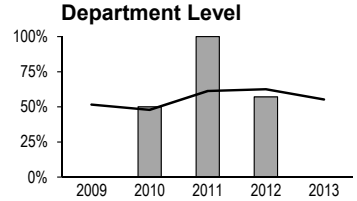
	2009	2010	2011	2012	2013
Hickory	9.6%	8.1%	5.6%	6.1%	13.7%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



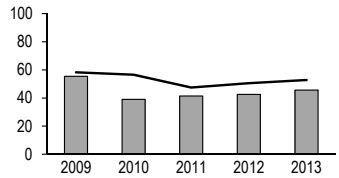
	2009	2010	2011	2012	2013
Hickory	7.5%	6.6%	4.4%	5.1%	12.5%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Hickory	0%	50%	100%	57%	
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Hickory	55	39	41	43	46
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of High Point Human Resources Department is organized into two divisions. The Administrative Division's organizational objectives consist of personnel and fringe benefits budgeting; workforce planning; recruitment, selection, and EEO, ADA, FMLA, FLSA, and HIPPA compliance; fringe benefit competitiveness and cost containment; employee benefits education and awareness; maintaining a competitive and equitable salary and classification plan; offering professional training opportunities for employees; development of intervention strategies to address workplace problems; and facilitation services to employee groups. The director of human resources reports directly to the city manager.

The Safety and Health Division's organizational objectives consist of assisting city departments in providing a safe work environment, promoting a healthier workforce through job fitness assessments and wellness programs, coordination of the city's substance abuse program, workers' compensation cost containment and compliance with OSHA, HIPPA, EPA, and DOT; and compliance with North Carolina workers' compensation regulations.

One compensation study was conducted in FY 2012–13 covering 497 positions.

The city's probationary period is twelve months for new employees. Department directors may extend probationary periods for up to ninety additional days if approved by the human resources director.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Median Family Income U.S. Census 2010	$49,720
County Unemployment Rate (2011) N.C. Employment Security Commission	10.8%

Service Profile

Central HR FTE Positions	
Administration	5.0
Generalist/Specialist	6.5
Staff Support/Clerical	1.0
Total Authorized Workforce	1,563.0
Authorized FTEs	1,436.0
Average Length of Service (Months)	137
Number of Position Requisitions	318
Employment Applications Processed	3,345
Length of Probationary Employment Period	12 months
Compensation Studies Completed	1
Positions Studied	497
Employee Turnover	
Voluntary Separations	81
Involuntary Separations	15
TOTAL SEPARATIONS	96
Formal Grievances Filed by Employees	3
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

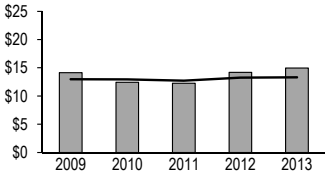
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	64.2%
Operating Costs	34.4%
Capital Costs	1.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,023,304
Operating Costs	$547,978
Capital Costs	$21,708
TOTAL	$1,592,990

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

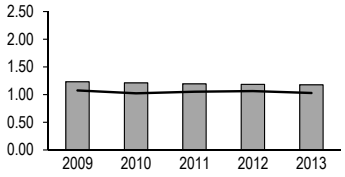
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
High Point	$14.14	$12.45	$12.27	$14.19	$14.97
Average	$12.96	$12.94	$12.71	$13.26	$13.31

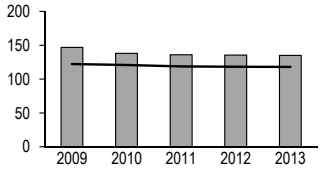
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	1.23	1.21	1.19	1.18	1.17
Average	1.07	1.02	1.05	1.06	1.03

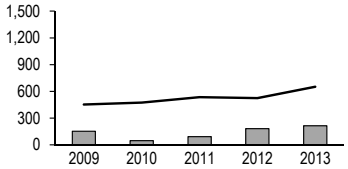
Workload Measures

Total Municipal FTEs per 10,000 Population



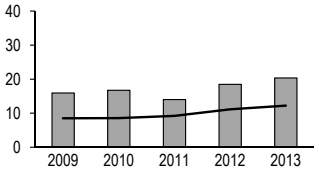
	2009	2010	2011	2012	2013
High Point	147	138	136	135	135
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
High Point	153	47	91	182	214
Average	452	473	535	524	652

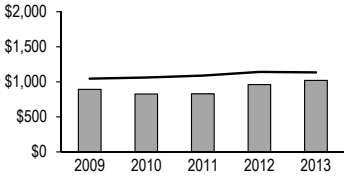
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
High Point	16.0	16.7	14.0	18.5	20.3
Average	8.5	8.5	9.2	11.2	12.2

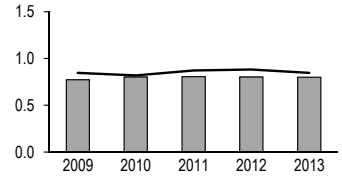
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
High Point	$891	$827	$828	$961	$1,019
Average	$1,045	$1,061	$1,088	$1,140	$1,134

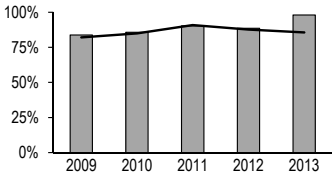
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
High Point	0.77	0.80	0.80	0.80	0.80
Average	0.85	0.82	0.87	0.88	0.85

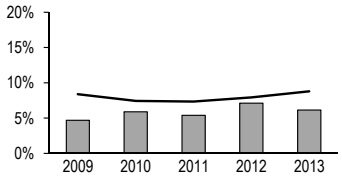
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



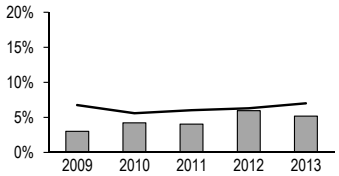
	2009	2010	2011	2012	2013
High Point	84%	86%	90%	89%	98%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



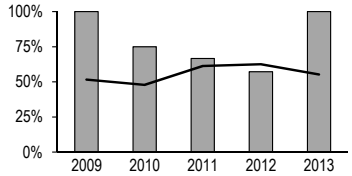
	2009	2010	2011	2012	2013
High Point	4.7%	5.9%	5.4%	7.1%	6.1%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



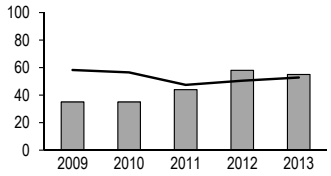
	2009	2010	2011	2012	2013
High Point	3.0%	4.2%	4.1%	6.0%	5.2%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
High Point	100%	75%	67%	57%	100%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
High Point	35	35	44	58	55
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The human resources function in Salisbury is a centralized unit that provides internal support and assistance with six staff members: the director (administration, equal employment opportunity and grievance, and special investigations), an analyst II (benefits administration, HRIS, policy interpretation, and wellness), an analyst II (training and development), an analyst I (recruitment, compensation, classification, and position control), an analyst I (multiculturalism program), and a technician (applicant flow, administrative support, budget preparation, and corporate giving).

The human resources department has been the lead agency in the development of customer service provisions identified by the city council as the top priority goal for the city.

The city's probationary period for new general employees is six months and twelve months for police and fire.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Median Family Income U.S. Census 2010	$40,192
County Unemployment Rate (2011) N.C. Employment Security Commission	11.6%

Service Profile

Central HR FTE Positions	
Administration	2.0
Generalist/Specialist	4.0
Staff Support/Clerical	1.0
Total Authorized Workforce	476.0
Authorized FTEs	473.0
Average Length of Service (Months)	125
Number of Position Requisitions	68
Employment Applications Processed	2,018
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	NA
Positions Studied	19
Employee Turnover	
Voluntary Separations	48
Involuntary Separations	20
TOTAL SEPARATIONS	68
Formal Grievances Filed by Employees	3
Equal Employment Opportunity Commission (EEOC) Complaints Filed	2

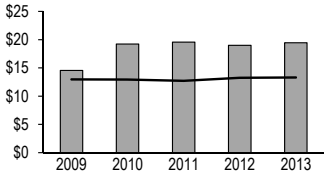
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	74.5%
Operating Costs	23.2%
Capital Costs	2.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$484,578
Operating Costs	$151,040
Capital Costs	$14,682
TOTAL	$650,300

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

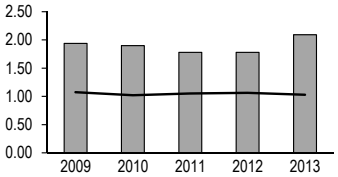
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Salisbury	$14.56	$19.22	$19.58	$19.00	$19.45
Average	$12.96	$12.94	$12.71	$13.26	$13.31

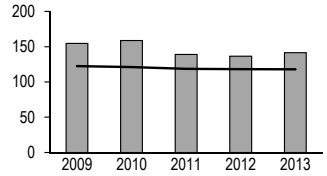
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	1.94	1.90	1.78	1.78	2.09
Average	1.07	1.02	1.05	1.06	1.03

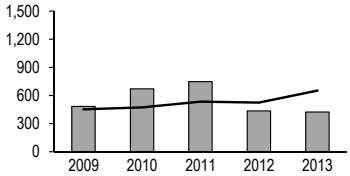
Workload Measures

Total Municipal FTEs per 10,000 Population



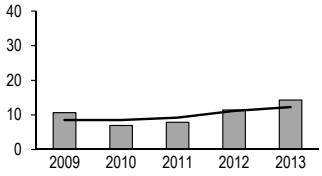
	2009	2010	2011	2012	2013
Salisbury	155	159	139	136	141
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Salisbury	483	671	747	435	424
Average	452	473	535	524	652

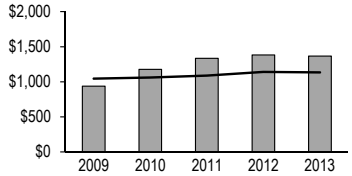
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Salisbury	10.6	7.0	7.9	11.4	14.3
Average	8.5	8.5	9.2	11.2	12.2

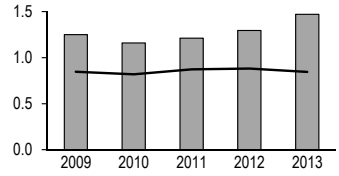
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Salisbury	$937	$1,176	$1,334	$1,383	$1,366
Average	$1,045	$1,061	$1,088	$1,140	$1,134

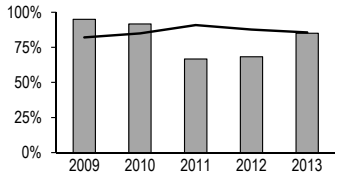
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Salisbury	1.25	1.16	1.21	1.30	1.47
Average	0.85	0.82	0.87	0.88	0.85

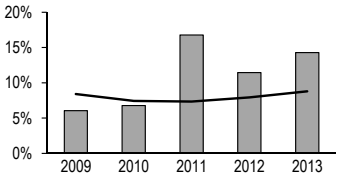
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



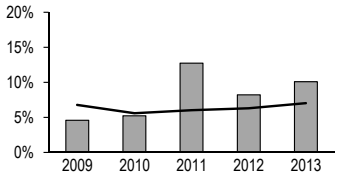
	2009	2010	2011	2012	2013
Salisbury	95%	92%	67%	68%	85%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



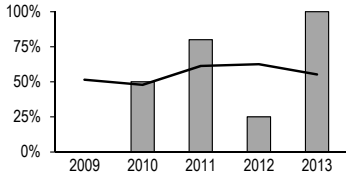
	2009	2010	2011	2012	2013
Salisbury	6.0%	6.8%	16.8%	11.4%	14.3%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



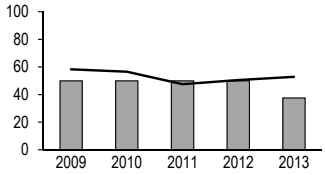
	2009	2010	2011	2012	2013
Salisbury	4.6%	5.2%	12.7%	8.2%	10.1%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Salisbury	0%	50%	80%	25%	100%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Salisbury	50	50	50	50	38
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wilmington had eight employees during FY 2011–12 performing human resource functions. The director had administrative oversight responsibilities and was responsible for policy and compliance matters. In early 2007, the human resources department implemented a "business partner" concept to provide human resource services to city departments. Service delivery is centralized, with business partners serving as content experts on issues like benefits, recruiting, policies, compensation, learning and development, and safety management.

Wilmington is undergoing a change in its management model, moving to more employee engagement and a results-oriented approach. This culture change seeks to empower employees and improve accountability and performance for citizens.

Wilimington conducted ten compensation studies during the fiscal year covering 155 positions.

The city's probationary period for new employees is twelve months for non–public safety employees and eighteen months for public safety employees.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Median Family Income U.S. Census 2010	$57,892
County Unemployment Rate (2011) N.C. Employment Security Commission	9.9%

Service Profile

Central HR FTE Positions	
Administration	1.0
Generalist/Specialist	6.0
Staff Support/Clerical	0.5
Total Authorized Workforce	1,054.0
Authorized FTEs	1,023.0
Average Length of Service (Months)	119
Number of Position Requisitions	167
Employment Applications Processed	10,526
Length of Probationary Employment Period	12 or 18 months
Compensation Studies Completed	10
Positions Studied	155
Employee Turnover	
Voluntary Separations	61
Involuntary Separations	31
TOTAL SEPARATIONS	92
Formal Grievances Filed by Employees	4
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

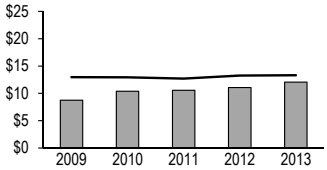
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	41.1%
Operating Costs	58.3%
Capital Costs	0.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$544,424
Operating Costs	$771,628
Capital Costs	$7,585
TOTAL	$1,323,637

Key: Wilmington ■ Benchmarking Average — Fiscal Years 2009 through 2013

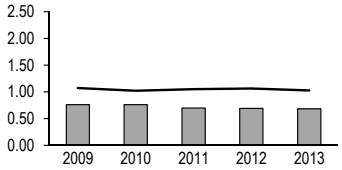
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Wilmington	$8.75	$10.39	$10.56	$11.07	$12.07
Average	$12.96	$12.94	$12.71	$13.26	$13.31

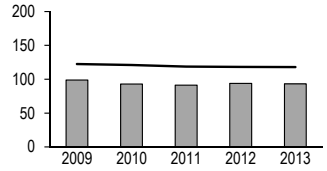
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilmington	0.76	0.76	0.70	0.69	0.68
Average	1.07	1.02	1.05	1.06	1.03

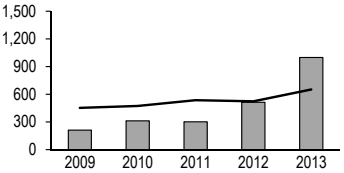
Workload Measures

Total Municipal FTEs per 10,000 Population



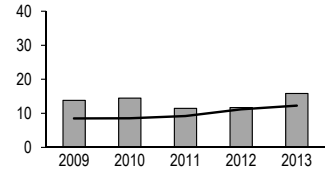
	2009	2010	2011	2012	2013
Wilmington	99	93	91	94	93
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilmington	210	311	301	513	999
Average	452	473	535	524	652

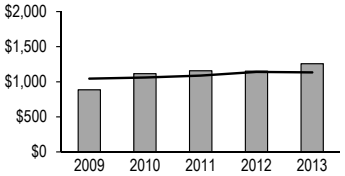
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilmington	13.8	14.5	11.5	11.7	15.8
Average	8.5	8.5	9.2	11.2	12.2

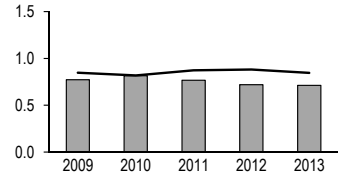
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Wilmington	$885	$1,116	$1,157	$1,151	$1,256
Average	$1,045	$1,061	$1,088	$1,140	$1,134

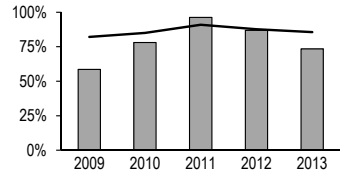
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilmington	0.77	0.81	0.77	0.72	0.71
Average	0.85	0.82	0.87	0.88	0.85

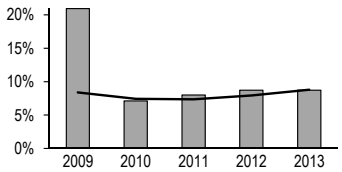
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



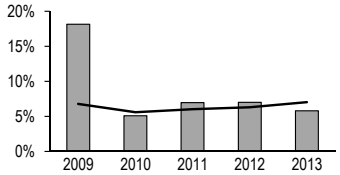
	2009	2010	2011	2012	2013
Wilmington	59%	78%	96%	87%	73%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



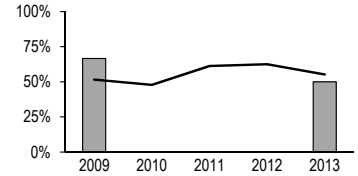
	2009	2010	2011	2012	2013
Wilmington	20.9%	7.1%	8.0%	8.7%	8.7%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



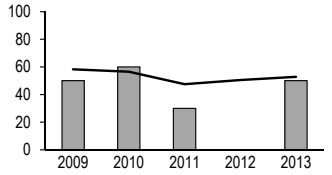
	2009	2010	2011	2012	2013
Wilmington	18.1%	5.1%	7.0%	7.0%	5.8%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Wilmington	67%				50%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Wilmington	50	60	30		50
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Wilson has a centralized Human Resources Department comprised of policy development and implementation, classification and pay administration, recruitment and selection, benefits administration, and employee relations. The safety and health program is a function of the Risk Management Division under another department. Occupational health needs are met through a contract with the Wilson Medical Center.

The city conducted no compensation studies during FY 2012–13.

The city's probationary period is twelve months for new city employees.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Median Family Income U.S. Census 2010	$43,442
County Unemployment Rate (2011) N.C. Employment Security Commission	13.5%

Service Profile

Central HR FTE Positions	
Administration	0.5
Generalist/Specialist	3.0
Staff Support/Clerical	1.0
Total Authorized Workforce	1,054.0
Authorized FTEs	1,023.0
Average Length of Service (Months)	126
Number of Position Requisitions	44
Employment Applications Processed	1,922
Length of Probationary Employment Period	12 months
Compensation Studies Completed	0
Positions Studied	0
Employee Turnover	
Voluntary Separations	43
Involuntary Separations	17
TOTAL SEPARATIONS	60
Formal Grievances Filed by Employees	1
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

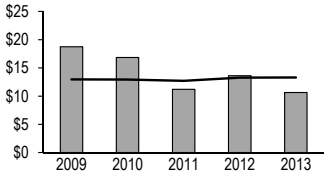
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	73.4%
Operating Costs	24.1%
Capital Costs	2.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$386,175
Operating Costs	$126,599
Capital Costs	$13,389
TOTAL	$526,163

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

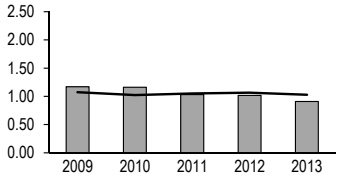
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Wilson	$18.74	$16.85	$11.22	$13.60	$10.64
Average	$12.96	$12.94	$12.71	$13.26	$13.31

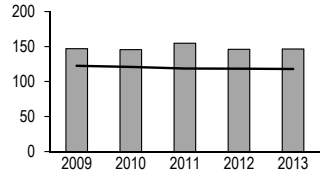
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	1.17	1.16	1.03	1.02	0.91
Average	1.07	1.02	1.05	1.06	1.03

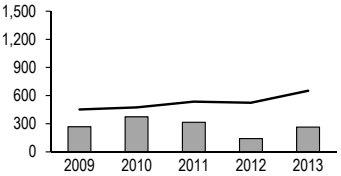
Workload Measures

Total Municipal FTEs per 10,000 Population



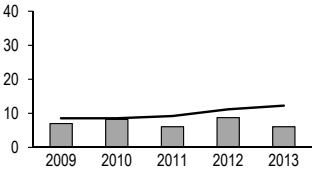
	2009	2010	2011	2012	2013
Wilson	147	145	155	146	146
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilson	267	374	315	142	264
Average	452	473	535	524	652

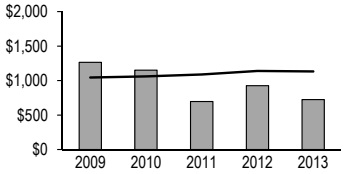
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilson	7.0	8.2	6.0	8.7	6.1
Average	8.5	8.5	9.2	11.2	12.2

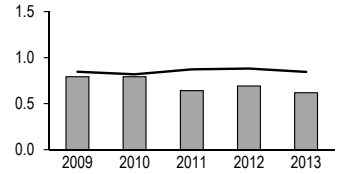
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Wilson	$1,265	$1,151	$696	$926	$724
Average	$1,045	$1,061	$1,088	$1,140	$1,134

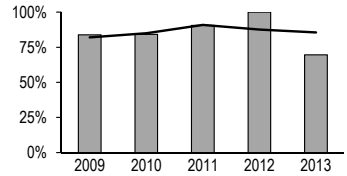
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Wilson	0.79	0.79	0.64	0.69	0.62
Average	0.85	0.82	0.87	0.88	0.85

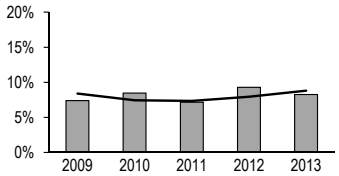
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



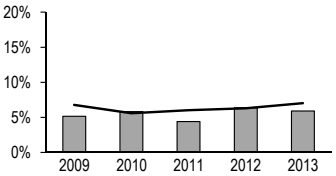
	2009	2010	2011	2012	2013
Wilson	84%	84%	91%	100%	70%
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



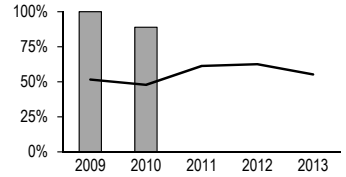
	2009	2010	2011	2012	2013
Wilson	7.4%	8.5%	7.2%	9.3%	8.3%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



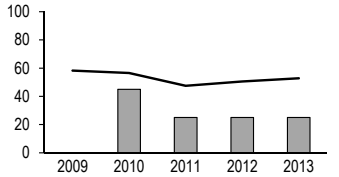
	2009	2010	2011	2012	2013
Wilson	5.2%	5.8%	4.4%	6.4%	5.9%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Wilson	100%	89%			0%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Wilson		45	25	25	25
Average	58	57	47	50	53

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The human resources function is housed under two separate departments: Human Resources (HR) and Finance. The finance department is responsible for benefits administration and employee safety. The human resources department has three separate sections: general human resources management, employee health, and employee training.

The city conducted no compensation studies during FY 2012–13.

Winston-Salem did not use a probationary period. As a result, no data are available for the measure "probationary period completion rate (new hires)."

Conditions Affecting Service, Performance, and Costs
Winston-Salem now requires all job applications to be submitted online. This process has made it substantially easier to apply for jobs, pushing up the number of applications.

The city has two health insurance plans: a basic plan and the Basic Plus Plan, which has richer benefits and more expensive premiums for employees.

The City Attorney's Office handles all Equal Employment Opportunity Commission (EEOC) charges.

Winston-Salem's HR department manually calculates the time from post date to hire by subtracting the "approved for posting date" from the actual hire date as noted in the department's system. Certain current policies can effectively stretch this time period which accounts for the long time reported in the length of time to hire new employees. For example, graduates from the fire academy may sometimes require five months before all evaluations are completed. There were also a number of positions that were posted but then held vacant for administrative reasons before being allowed to be filled.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Median Family Income U.S. Census 2010	$51,491
County Unemployment Rate (2011) N.C. Employment Security Commission	10.0%

Service Profile

Central HR FTE Positions	
Administration	3.0
Generalist/Specialist	10.8
Staff Support/Clerical	5.0
Total Authorized Workforce	2,876.0
Authorized FTEs	2,675.3
Average Length of Service (Months)	127
Number of Position Requisitions	316
Employment Applications Processed	16,295
Length of Probationary Employment Period	No probation
Compensation Studies Completed	0
Positions Studied	na
Employee Turnover	
Voluntary Separations	223
Involuntary Separations	98
TOTAL SEPARATIONS	321
Formal Grievances Filed by Employees	68
Equal Employment Opportunity Commission (EEOC) Complaints Filed	6

Full Cost Profile

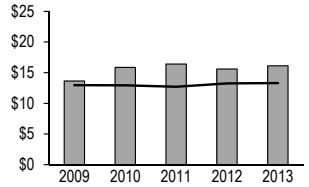
Cost Breakdown by Percentage	
Personal Services	31.6%
Operating Costs	64.1%
Capital Costs	4.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,187,468
Operating Costs	$2,410,787
Capital Costs	$162,633
TOTAL	$3,760,888

Winston-Salem Central Human Resources

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

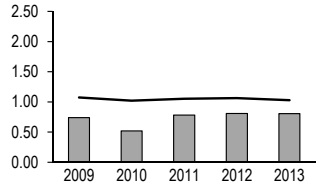
Resource Measures

Human Resources Services Cost per Capita



	2009	2010	2011	2012	2013
Winston-Salem	$13.65	$15.87	$16.42	$15.59	$16.13
Average	$12.96	$12.94	$12.71	$13.26	$13.31

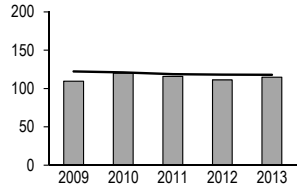
Human Resources FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	0.74	0.52	0.78	0.81	0.81
Average	1.07	1.02	1.05	1.06	1.03

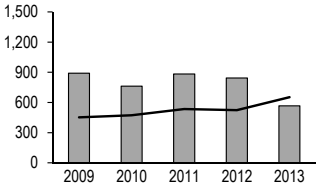
Workload Measures

Total Municipal FTEs per 10,000 Population



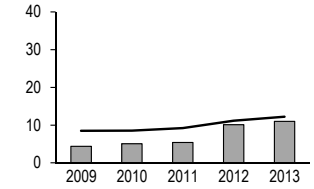
	2009	2010	2011	2012	2013
Winston-Salem	110	120	116	111	115
Average	122	121	119	118	118

Applications Processed per 100 Municipal Employees



	2009	2010	2011	2012	2013
Winston-Salem	891	762	883	843	567
Average	452	473	535	524	652

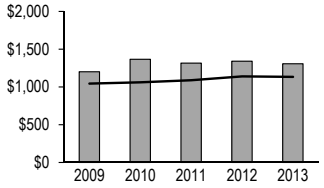
Position Requisitions per 100 Municipal Employees



	2009	2010	2011	2012	2013
Winston-Salem	4.4	5.1	5.4	10.1	11.0
Average	8.5	8.5	9.2	11.2	12.2

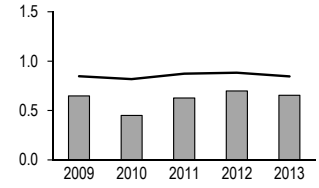
Efficiency Measures

Human Resources Cost per Municipal Employee



	2009	2010	2011	2012	2013
Winston-Salem	$1,201	$1,367	$1,316	$1,342	$1,308
Average	$1,045	$1,061	$1,088	$1,140	$1,134

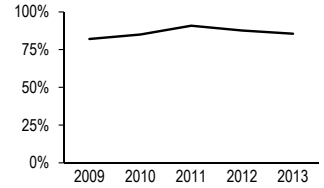
Ratio of Human Resources Staff to 100 Municipal Employees



	2009	2010	2011	2012	2013
Winston-Salem	0.65	0.45	0.63	0.70	0.65
Average	0.85	0.82	0.87	0.88	0.85

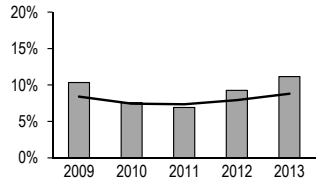
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



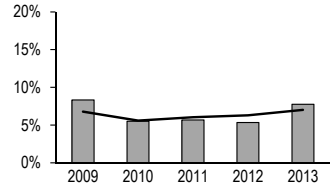
	2009	2010	2011	2012	2013
Winston-Salem					
Average	82%	85%	91%	88%	86%

Employee Turnover Rate (All Separations)



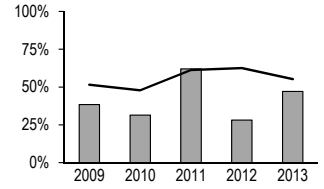
	2009	2010	2011	2012	2013
Winston-Salem	10.3%	7.6%	6.9%	9.3%	11.2%
Average	8.4%	7.4%	7.3%	7.9%	8.8%

Employee Turnover Rate (Voluntary Separations)



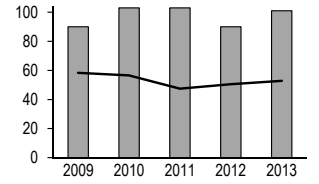
	2009	2010	2011	2012	2013
Winston-Salem	8.3%	5.5%	5.7%	5.3%	7.8%
Average	6.8%	5.6%	6.0%	6.3%	7.0%

Percentage of Grievances Resolved at Department Level



	2009	2010	2011	2012	2013
Winston-Salem	38%	31%	62%	28%	47%
Average	52%	48%	61%	63%	55%

Average Days from Post Date to Hire Date (First Day of Employment)



	2009	2010	2011	2012	2013
Winston-Salem	90	103	103	90	101
Average	58	57	47	50	53

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

WATER SERVICES

UNC
SCHOOL OF
GOVERNMENT

PERFORMANCE MEASURES FOR WATER SERVICES

SERVICE DEFINITION

This service area includes the collection, treatment, distribution, and billing related to drinking water services. It includes reservoirs where appropriate, pumping stations, pipes to and from treatment plants, storage tanks, and treatment plants. Activities and costs include the operation, maintenance, and installation of infrastructure. Also included are costs and activities associated with the installation, upkeep, and reading of meters; billing and collection costs for drinking water services; and administrative activities such as planning, engineering, and testing. Excluded are reclaimed water, sewer collection, and wastewater treatment services.

NOTES ON PERFORMANCE MEASURES

1. Thousands of Gallons Billed Water per Meter

This workload measure captures the amount of water provided per meter in the system. Water that does not make it to customer taps is not included.

2. Miles of Main Line Pipe per Square Mile of Service Area

The amount of pipe per square mile shows the density of the pipe infrastructure to be maintained relative to the geographic size of the area served.

3. Total Cost per 1,000 Gallons of Billed Water

This efficiency measure shows the total system costs per 1,000 gallons of water that is actually billed to customers.

4. Million Gallons of Billed Water per All Staff FTEs

Large numbers of staff are required to bring drinking water to customer taps, including treatment staff, line maintenance staff, meter readers, billing staff, and others. Based on all staff who help support the delivery of drinking water to customers, this efficiency measure shows how much billable water is produced per full-time equivalent (FTE) staff member.

5. Billed Water as a Percentage of Finished Water

Not all water produced at treatment plants makes it to customer meters. Some water is lost through leaks or breaks in the system. Other water is unbilled but authorized for uses such as fighting fires or flushing lines. This efficiency measure shows the percentage of water produced that makes it to customer taps.

6. Percentage of Existing Pipeline Renewed

Replacement or rehabilitation of existing pipeline is needed to ensure that the distribution infrastructure can continue to function. This effectiveness measure shows the percentage of existing water lines that are renewed each year.

7. Percentage of Bills Not Collected
Collection of water bills sent to customers is necessary to ensure revenues for system operation. Adjustments to bills reflecting water loss adjustments are not included in the amount of billings.

8. Peak Daily Demand as a Percentage of Treatment Capacity
A water system needs sufficient capacity to not only meet average demands, but also peak demands. This measure looks at peak historical demand relative to the water system treatment capacity in a day.

9. Breaks and Leaks per Mile of Main Line Pipe
Breaks or leaks in water distribution lines mean the loss of treated water.

10. Customer Complaints about Water Quality per 1,000 Meters
Concerns for the adequacy of water are matched with the quality of the water delivered to customers. This effectiveness measure assesses customers' perceptions about their water quality.

Water Services

Summary of Key Dimensions of Service

City or Town	Estimated Residential Population in Service Area	Service Area (in Square Miles)	Average Daily Demand for Water (in MGD)	Operating Treatment Plants	Total Treatment Capacity for Finished Water (in MGD)	Miles of Water Main Lines	Number of Water Meters	Water System FTE Positions
Apex	40,769	18.5	2.8	Shared with Cary	na	186.7	13,751	20.5
Asheville	124,300	183.0	20.1	3	43.5	1,671.4	56,900	148.0
Burlington	53,410	43.9	11.3	2	34.0	424.2	23,222	49.0
Cary	167,340	75.5	13.4	1	40.0	975.0	63,419	62.6
Charlotte	969,031	546.0	99.2	3	242.0	4,198.0	272,766	359.0
Concord	84,483	169.0	9.2	2	24.0	682.3	37,040	76.0
Durham	258,636	144.0	26.6	2	52.0	1,201.0	88,389	139.0
Greensboro	215,700	148.0	34.1	2	54.0	1,481.0	103,507	159.5
Hickory	92,000	326.0	10.4	1	32.0	917.0	28,365	57.5
High Point	108,000	64.0	12.2	1	24.0	614.7	40,647	56.5
Salisbury	52,600	47.2	8.7	1	25.0	418.0	18,905	44.0
Wilson	51,110	39.0	8.5	2	22.0	419.0	22,185	41.0
Winston-Salem	336,243	366.0	35.9	3	91.0	2,245.0	123,647	166.0

NOTES

MGD stands for millions of gallons per day.

EXPLANATORY FACTORS

These are factors that the project found affected water services performance and cost in one or more of the municipalities:

Topography
Water quality of source water
Size of service area
Population density
Age of infrastructure
Growth of population and businesses

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The Town of Apex Water Distribution Division is housed within the Department of Public Works. It consists of repairs, preventive maintenance, meter installation and replacement, and testing. The town is co-owner of the Cary/Apex water treatment facility, which draws raw water from Jordan Lake. The Town of Cary provides the operational staff for the treatment plant but Apex shares in the costs of operation and capital.

Apex bases replacement of water lines on customer complaints, frequency of repairs, street rehabilitation needs, age and material of pipes, and flow concerns.

Currently, about 77.8 percent of water meters are read by various automatic means. Replacement of meters is based on a combination of factors, as is water line replacement.

Conditions Affecting Service, Performance, and Costs
Apex began participation in the benchmarking project in July 2011, with FY 2010–11 being the first reporting year.

The costs of water services as captured here do not include debt service but do capture depreciation.

Municipal Profile

Estimated Service Population	40,769
Service Land Area (Square Miles)	18.5
Persons per Square Mile	2,204
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Staff Positions	
Treatment Plant	0.0
Line Crews	14.0
Meter Readers	2.5
Billing/Collection	2.0
Other	2.0
Total	20.5
Number of Treatment Plants	NA
Total Treatment Capacity	NA
Average Daily Demand	2.8 MG
Miles of Main Line Pipe	187
Average Age of Main Line Pipe	35 years
Number of Breaks/Leaks	18
Number of Water Meters	13,751
Percent of Meters Read Automatically	77.8%
Total Revenues Collected	$7,080,024

Full Cost Profile

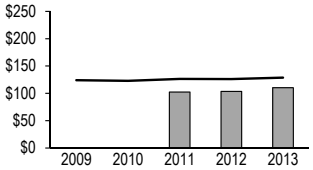
Cost Breakdown by Percentage	
Personal Services	28.6%
Operating Costs	41.9%
Capital Costs	29.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,284,950
Operating Costs	$1,883,679
Capital Costs	$1,322,258
TOTAL	$4,490,887

Apex Water Services

Key: Apex ■ Benchmarking Average — Fiscal Years 2009 through 2013

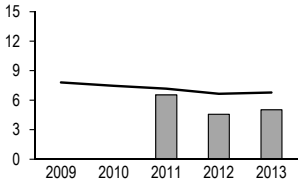
Resource Measures

Water Services Cost per Capita



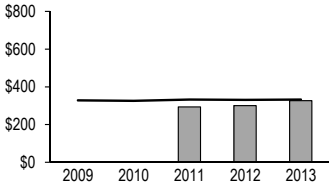
	2009	2010	2011	2012	2013
Apex			$102	$103	$110
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Apex			6.5	4.6	5.0
Average	7.8	7.5	7.2	6.7	6.8

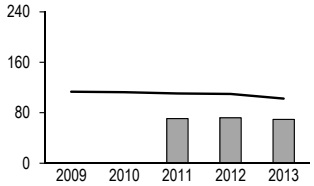
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Apex			$294	$300	$327
Average	$328	$325	$333	$331	$332

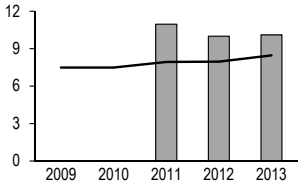
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Apex			70.7	71.9	69.4
Average	113.4	112.6	110.6	109.9	102.5

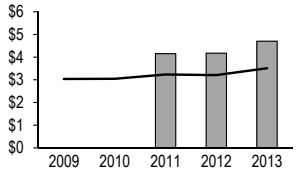
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Apex			11.0	10.0	10.1
Average	7.5	7.5	7.9	8.0	8.5

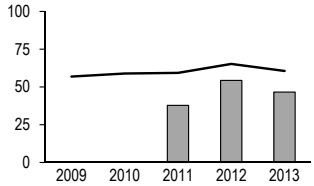
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



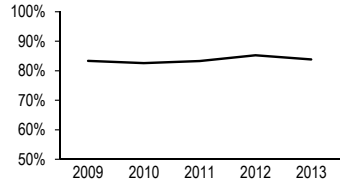
	2009	2010	2011	2012	2013
Apex			$4.15	$4.17	$4.70
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Apex			37.8	54.3	46.6
Average	56.9	58.9	59.3	65.3	60.6

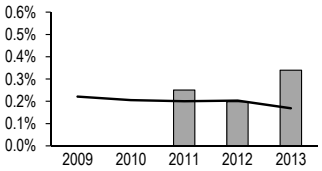
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Apex					
Average	83%	83%	83%	85%	84%

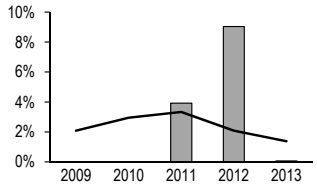
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



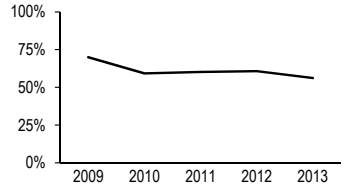
	2009	2010	2011	2012	2013
Apex			0.25%	0.20%	0.34%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



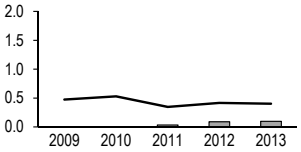
	2009	2010	2011	2012	2013
Apex			3.92%	9.04%	0.06%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



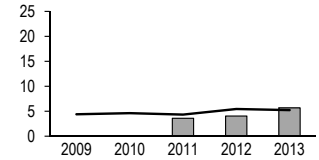
	2009	2010	2011	2012	2013
Apex					
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Apex			0.03	0.09	0.10
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Apex			3.59	4.05	5.67
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Asheville Water Resources Department is a publicly owned water utility that produces and supplies water for residential, business, industrial, and wholesale bulk customers. The utility serves the city of Asheville, approximately 27 percent of Buncombe County, and approximately 2 percent of Henderson County. Approximately 124,000 people are served over a 183-square-mile area.

Asheville has three water treatment plants drawing from a city reservoir, the Mills River, and may also take water from the French Broad River as needed. The estimated safe yield for water is 35 million gallons per day.

Asheville has an asset management program in place to assist with identifying replacement and refurbishment needs. The goal is for water main lines to be replaced every eighty years.

Currently about 94.6 percent of water meters are read by various automatic systems, including radio-read and touch-read meters. The goal is to replace all meters in the next few years years with radio-read meters.

Conditions Affecting Service, Performance, and Costs
The costs of water services as captured here do not include debt service but do capture depreciation.

The topography and climate in Asheville creates a number of problems for water systems operation. The mountainous terrain makes it difficult to install water lines. The utility has thirty-eight pressure zones, ranging from 20 to 643 psi, with an average from 180 to 200 psi. Colder temperatures can also make maintenance harder to complete and lead to breaks due to freezing. Due to the Sullivan Acts, Asheville is not allowed to refuse water line installation in any areas of Buncombe County or to charge differential rates.

The number of breaks and leaks in the system has been declining. The Water Resources Department has worked actively to better identify situations with repeated leaks in time and, when identified, to replace pipe for a more permanent solution.

In February 2011, there was a major break on a large transmission line which affected water quality for a period. Additionally, there was a water quality problem near downtown. Complaints about water quality were much higher due to these two problems.

Municipal Profile

Estimated Service Population	124,300
Service Land Area (Square Miles)	183.0
Persons per Square Mile	679
Topography	Flat; gently rolling
Climate	Moderate; ice and snow
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Staff Positions	
Treatment Plant	41.0
Line Crews	49.0
Meter Readers	9.0
Billing/Collection	23.0
Other	26.0
Total	148.0
Number of Treatment Plants	3
Total Treatment Capacity	43.5 MG
Average Daily Demand	20.1 MG
Miles of Main Line Pipe	1,671
Average Age of Main Line Pipe	53 years
Number of Breaks/Leaks	582
Number of Water Meters	56,900
Percent of Meters Read Automatically	94.6%
Total Revenues Collected	$33,704,544

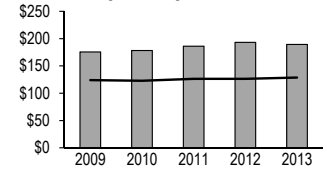
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	34.5%
Operating Costs	35.3%
Capital Costs	30.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,114,645
Operating Costs	$8,308,554
Capital Costs	$7,092,922
TOTAL	$23,516,121

Key: Asheville ■ Benchmarking Average — Fiscal Years 2009 through 2013

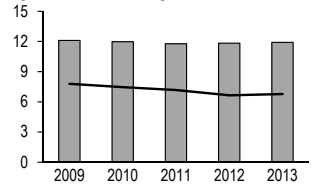
Resource Measures

Water Services Cost per Capita



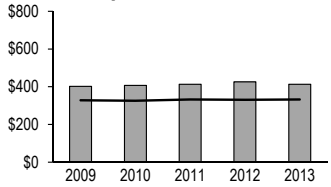
	2009	2010	2011	2012	2013
Asheville	$176	$178	$186	$193	$189
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Asheville	12.1	12.0	11.8	11.8	11.9
Average	7.8	7.5	7.2	6.7	6.8

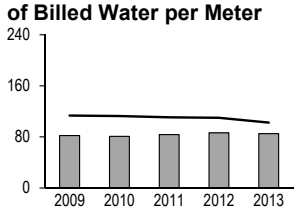
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Asheville	$402	$407	$413	$426	$413
Average	$328	$325	$333	$331	$332

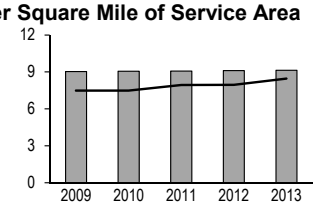
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Asheville	82.0	80.9	83.7	86.5	85.0
Average	113.4	112.6	110.6	109.9	102.5

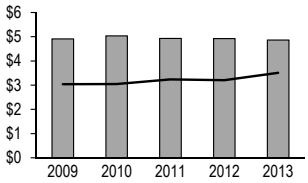
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Asheville	9.0	9.1	9.1	9.1	9.1
Average	7.5	7.5	7.9	8.0	8.5

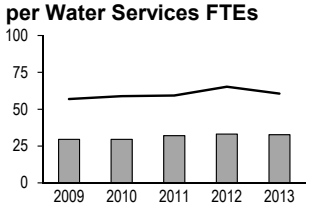
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



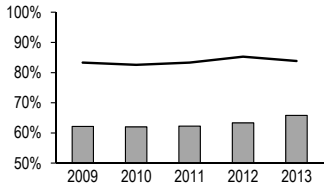
	2009	2010	2011	2012	2013
Asheville	$4.91	$5.03	$4.93	$4.92	$4.86
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Asheville	29.6	29.6	32.1	33.2	32.7
Average	56.9	58.9	59.3	65.3	60.6

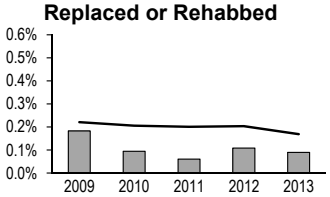
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Asheville	62%	62%	62%	63%	66%
Average	83%	83%	83%	85%	84%

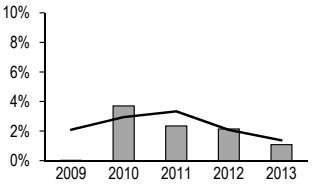
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



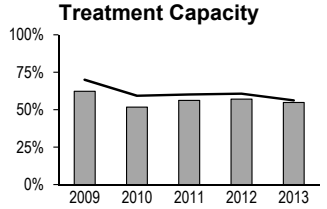
	2009	2010	2011	2012	2013
Asheville	0.18%	0.09%	0.06%	0.11%	0.09%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



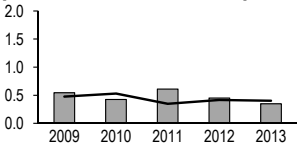
	2009	2010	2011	2012	2013
Asheville	0.02%	3.70%	2.34%	2.14%	1.08%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



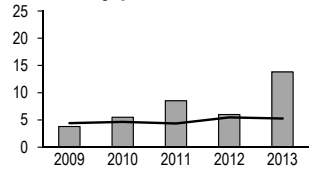
	2009	2010	2011	2012	2013
Asheville	62%	52%	56%	57%	55%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Asheville	0.54	0.42	0.61	0.45	0.35
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Asheville	3.79	5.49	8.53	5.99	13.81
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Water services are housed in the Water Resources Department within the City of Burlington. Meter reading, revenue collection, IT, and engineering are housed in other departments receiving fund transfers from the Water and Sewer Enterprise Fund. Approximately 53,000 people are served by the system over a 44-square-mile area.

Burlington gets its water from two city-owned reservoirs in the upper Cape Fear River basin. The city also owns a third water storage reservoir. The estimated safe yield of the system is 48 million gallons per day.

The city has two treatment plants with a total treatment capacity of 34 million gallons per day. The plants use conventional treatment with alum coagulation, dual media filtration, and chlorine disinfection.

The city sells water to several other systems, including Greensboro, Gibsonville, Elon, the Village of Alamance, and Haw River. Three of Burlington's top five water users are now other cities. The city has emergency connections with Greensboro and Graham.

The city reads meters on a monthly basis, with about 10 percent of meters being read by automatic means. Meters are replaced approximately every twelve to fifteen years.

Conditions Affecting Service, Performance, and Costs

The costs of water services as captured here do not include debt service but do capture depreciation.

Burlington's water system planning in the 1970s was developed to support a growing industrial base, particularly textiles. As the textile industry declined, Burlington has been left with a large supply infrastructure. Burlington has extended water lines to Greensboro to offset the industrial base decline and to assist Greensboro. Greensboro is now Burlington's largest water customer.

Municipal Profile

Estimated Service Population	53,410
Service Land Area (Square Miles)	43.9
Persons per Square Mile	1,217
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Staff Positions	
Treatment Plant	17.0
Line Crews	10.0
Meter Readers	4.0
Billing/Collection	10.0
Other	8.0
Total	49.0
Number of Treatment Plants	2
Total Treatment Capacity	34.0 MG
Average Daily Demand	11.3 MG
Miles of Main Line Pipe	424
Average Age of Main Line Pipe	47 years
Number of Breaks/Leaks	50
Number of Water Meters	23,222
Percent of Meters Read Automatically	10.2%
Total Revenues Collected	$9,748,671

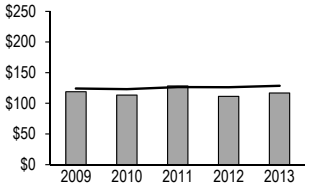
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	21.4%
Operating Costs	40.3%
Capital Costs	38.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,335,735
Operating Costs	$2,511,661
Capital Costs	$2,388,480
TOTAL	$6,235,876

Key: Burlington ■ Benchmarking Average — Fiscal Years 2009 through 2013

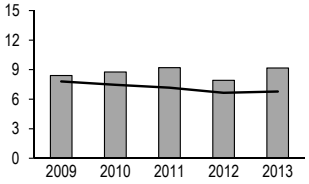
Resource Measures

Water Services Cost per Capita



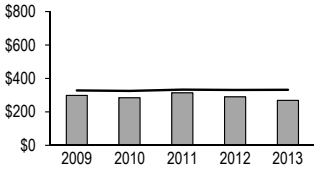
	2009	2010	2011	2012	2013
Burlington	$119	$114	$128	$111	$117
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Burlington	8.4	8.8	9.2	7.9	9.2
Average	7.8	7.5	7.2	6.7	6.8

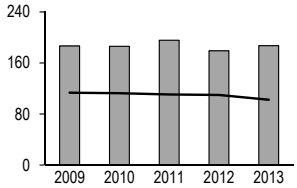
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Burlington	$298	$284	$314	$290	$269
Average	$328	$325	$333	$331	$332

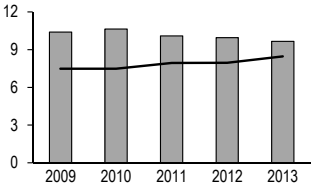
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Burlington	186.7	186.0	195.7	179.0	187.2
Average	113.4	112.6	110.6	109.9	102.5

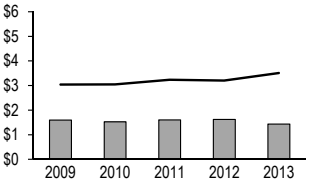
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Burlington	10.4	10.6	10.1	10.0	9.7
Average	7.5	7.5	7.9	8.0	8.5

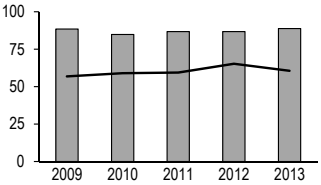
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



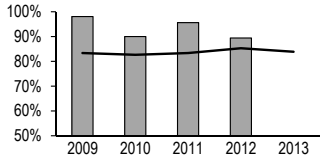
	2009	2010	2011	2012	2013
Burlington	$1.60	$1.53	$1.60	$1.62	$1.43
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Burlington	88.4	84.8	86.7	86.7	88.7
Average	56.9	58.9	59.3	65.3	60.6

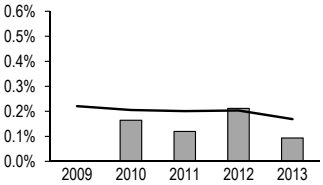
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Burlington	98%	90%	96%	89%	
Average	83%	83%	83%	85%	84%

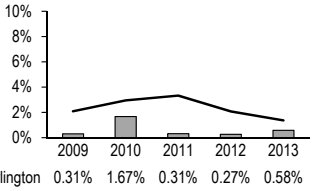
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



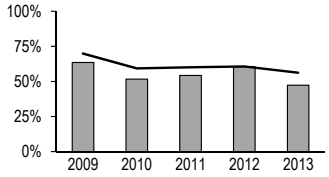
	2009	2010	2011	2012	2013
Burlington	0.00%	0.16%	0.12%	0.21%	0.09%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



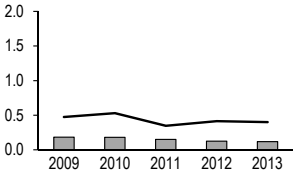
	2009	2010	2011	2012	2013
Burlington	0.31%	1.67%	0.31%	0.27%	0.58%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



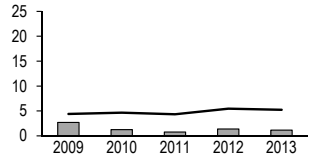
	2009	2010	2011	2012	2013
Burlington	64%	52%	54%	61%	47%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Burlington	0.18	0.18	0.15	0.12	0.12
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Burlington	2.69	1.24	0.78	1.39	1.16
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Water services in Cary are provided by the Utilities Division of the Department of Public Works and Utilities. The Utilities Division includes pre-treatment, water treatment, wastewater treatment, and various distribution system operations. Only those operations connected to supplying water are captured in the data. Approximately 167,000 people are served by the system, covering an area of seventy-five square miles.

Cary gets its water from Jordan Lake in the Haw River subbasin. The estimated fifty-year safe yield is 30.5 million gallons per day.

Cary's single water treatment plant is jointly owned with the Town of Apex. Apex pays 23 percent of the operating and capital costs and Cary staffs the plant. Cary also provides water to residents of the Town of Morrisville (as customers of the Cary water system but with a different operating and capital fee schedule). Cary further provides water to the Raleigh-Durham Airport Authority.

The city reads meters on a monthly basis, with approximately 97 percent of meters being read automatically with a Sensus Flexnet system. Meters are replaced approximately every seventeen years.

Conditions Affecting Service, Performance, and Costs
Cary began participating in water services benchmarking with the FY 2010–2011 report.

The costs of water services as captured here do not include debt service but do capture depreciation.

Cary's combined water and sewer utility operations make it difficult to separate out some revenues between the two service areas. The Town of Morrisville water and sewer system was merged with the Town of Cary system in 2006. As part of the merger agreement, merger-related costs were recovered through rate differentials that were in effect through the end of FY 2012. In FY 2013, Morrisville residents will begin to pay the same rates as Cary customers. Finally, the data show a small decrease in water staff that primarily reflects a shift in the counting of meter readers and accounting staff from water to sewer, which is a more accurate assessment from the earlier year.

Municipal Profile

Estimated Service Population	167,340
Service Land Area (Square Miles)	75.0
Persons per Square Mile	2,231
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Staff Positions	
Treatment Plant	24.0
Line Crews	23.8
Meter Readers	4.5
Billing/Collection	9.3
Other	1.0
Total	62.6
Number of Treatment Plants	1
Total Treatment Capacity	40.0 MG
Average Daily Demand	14.1 MG
Miles of Main Line Pipe	975
Average Age of Main Line Pipe	NA
Number of Breaks/Leaks	144
Number of Water Meters	63,419
Percent of Meters Read Automatically	96.6%
Total Revenues Collected	$24,930,235

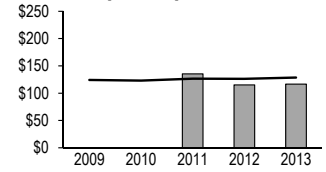
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	28.0%
Operating Costs	41.1%
Capital Costs	30.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,474,880
Operating Costs	$8,031,469
Capital Costs	$6,020,792
TOTAL	$19,527,141

Key: Cary ■ Benchmarking Average — Fiscal Years 2009 through 2013

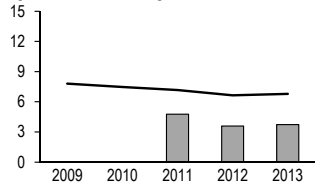
Resource Measures

Water Services Cost per Capita



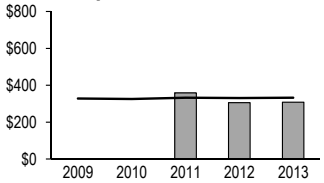
	2009	2010	2011	2012	2013
Cary			$135	$115	$117
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Cary			4.8	3.6	3.7
Average	7.8	7.5	7.2	6.7	6.8

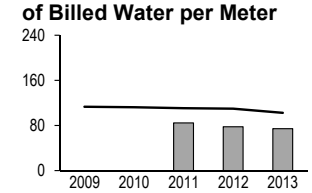
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Cary			$358	$306	$308
Average	$328	$325	$333	$331	$332

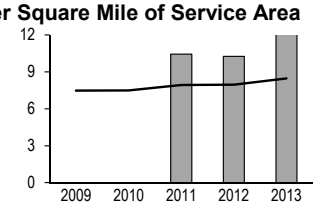
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Cary			84.6	77.8	74.5
Average	113.4	112.6	110.6	109.9	102.5

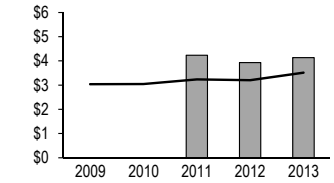
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Cary			10.5	10.3	12.9
Average	7.5	7.5	7.9	8.0	8.5

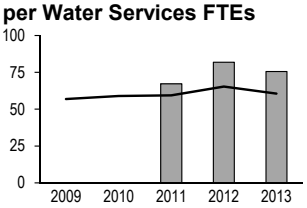
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



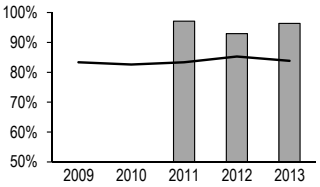
	2009	2010	2011	2012	2013
Cary			$4.23	$3.93	$4.13
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Cary			67.1	81.8	75.5
Average	56.9	58.9	59.3	65.3	60.6

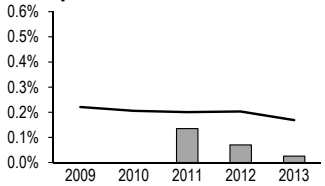
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Cary			97%	93%	96%
Average	83%	83%	83%	85%	84%

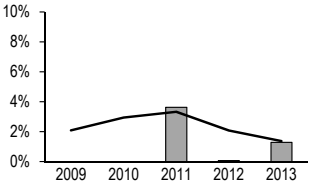
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



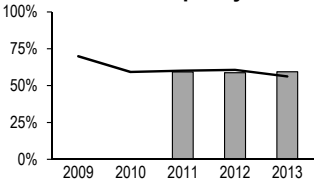
	2009	2010	2011	2012	2013
Cary			0.14%	0.07%	0.03%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



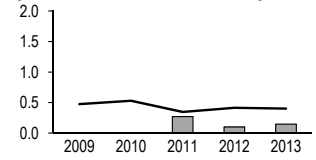
	2009	2010	2011	2012	2013
Cary			3.63%	0.06%	1.28%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



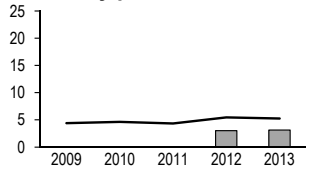
	2009	2010	2011	2012	2013
Cary			59%	59%	59%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Cary			0.27	0.10	0.15
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Cary				3.00	3.12
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Charlotte-Mecklenburg Utilities (CMU) is a combined water and sewer operation. The utility is a consolidated business unit of Mecklenburg County and the City of Charlotte. The utility is an official City of Charlotte Key Business Unit, Charlotte's term for city department.

The area served is generally considered to be Mecklenburg County but also includes a small number of metered drinking water interconnections with the City of Concord and the counties of Union in North Carolina and Lancaster and York in South Carolina. The service area covers approximately 546 square miles and serves over 969,000 people.

Source water for the system is drawn from two impounded lakes on the Catawba River, Lake Norman and Mountain Island Lake, which are operated by Duke Energy. The combined estimated safe yield is between 376 and 503 million gallons per day. The system operates three treatment plants with a combined treatment capacity of 242 million gallons per day. The treatment plants are conventional facilities using pre-treatment PAC, coagulation, flocculation, sedimentation, dual-media filtration, chlorination, fluoridation, and pH adjustment.

The estimated average age of main line pipes in the system is twenty-three years. CMU's replacement policy for pipe is based on flow and quality standards.

All meters are now read automatically. CMU uses a system that allows vans traveling the city to read meters as they drive by. The replacement standard is every fifteen years for water meters.

Conditions Affecting Service, Performance, and Costs

The costs of water services as captured here do not include debt service but do capture depreciation.

The reduction in reported leaks and breaks is in large part due to improvements in tracking and data reporting. CMU staff worked on improving how the work order system is used to determine the number of leaks or breaks in the water system.

Municipal Profile

Estimated Service Population	969,031
Service Land Area (Square Miles)	546.0
Persons per Square Mile	1,775
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Staff Positions	
Treatment Plant	79.0
Line Crews	138.0
Meter Readers	4.0
Billing/Collection	5.0
Other	133.0
Total	359.0
Number of Treatment Plants	3
Total Treatment Capacity	242.0 MG
Average Daily Demand	99.2 MG
Miles of Main Line Pipe	4,198
Average Age of Main Line Pipe	23 years
Number of Breaks/Leaks	3,861
Number of Water Meters	272,766
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$121,074,422

Full Cost Profile

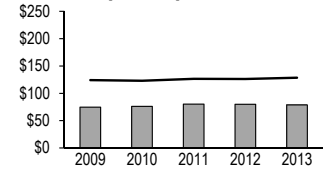
Cost Breakdown by Percentage	
Personal Services	20.5%
Operating Costs	31.8%
Capital Costs	47.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$15,667,400
Operating Costs	$24,320,480
Capital Costs	$36,458,810
TOTAL	$76,446,690

Charlotte Water Services

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2009 through 2013

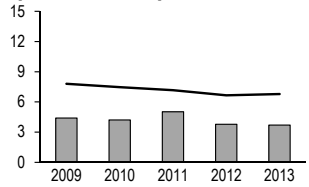
Resource Measures

Water Services Cost per Capita



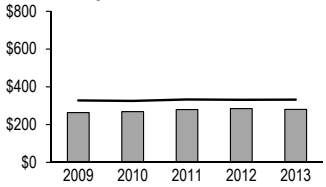
	2009	2010	2011	2012	2013
Charlotte	$75	$76	$80	$80	$79
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Charlotte	4.4	4.2	5.0	3.8	3.7
Average	7.8	7.5	7.2	6.7	6.8

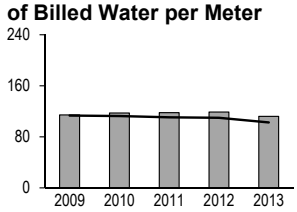
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Charlotte	$263	$269	$280	$285	$280
Average	$328	$325	$333	$331	$332

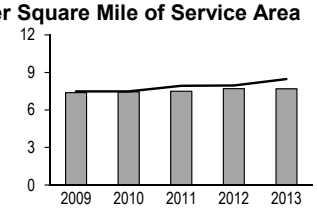
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Charlotte	114.3	117.3	117.9	118.9	112.1
Average	113.4	112.6	110.6	109.9	102.5

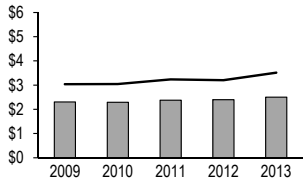
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Charlotte	7.4	7.4	7.5	7.7	7.7
Average	7.5	7.5	7.9	8.0	8.5

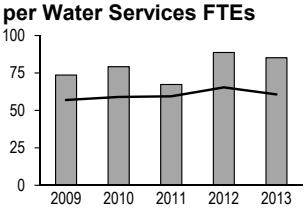
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



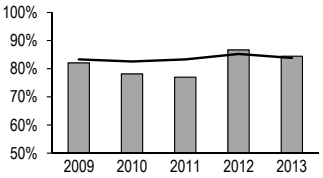
	2009	2010	2011	2012	2013
Charlotte	$2.30	$2.29	$2.37	$2.39	$2.50
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Charlotte	73.5	79.1	67.3	88.6	85.2
Average	56.9	58.9	59.3	65.3	60.6

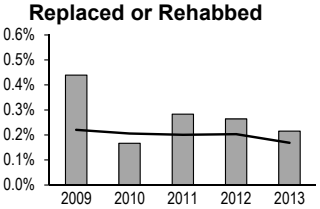
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Charlotte	82%	78%	77%	87%	84%
Average	83%	83%	83%	85%	84%

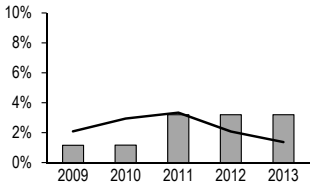
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



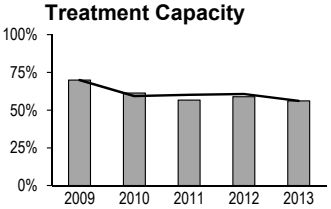
	2009	2010	2011	2012	2013
Charlotte	0.44%	0.17%	0.28%	0.26%	0.22%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



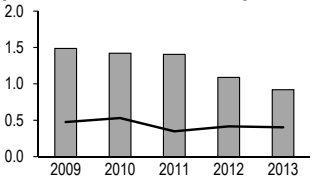
	2009	2010	2011	2012	2013
Charlotte	1.16%	1.17%	3.20%	3.20%	3.20%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



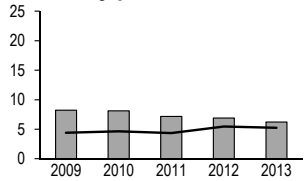
	2009	2010	2011	2012	2013
Charlotte	70%	61%	57%	59%	56%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Charlotte	1.49	1.42	1.40	1.09	0.92
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Charlotte	8.22	8.12	7.17	6.89	6.21
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Concord Water Resources Department is a water-only utility. The department has three divisions, one for operations and maintenance, and one for each of two treatment plants. Meter reading, billing, and collections are handled by the city Finance Department.

Concord's system serves approximately 84,600 people and covers the City of Concord, the Town of Midland, and approximately one-fourth of Cabarrus County. Water sources for the system are Lake Fisher, owned by the city, and Lakes Howell and Concord, reservoirs owned by the Water and Sewer Authority of Cabarrus County. The combined estimated safe yield is 24 million gallons per day.

The city operates two treatment plants with a combined treatment capacity of 24 million gallons per day. Concord has emergency connections with the City of Charlotte and the City of Kannapolis and sells small amounts of water to the Town of Harrisburg and the Town of Midland.

The estimated average age of main line pipes in the system is thirty-one years. Water meters are read monthly, and nearly all meters are read using automatic means. The replacement standard for water meters is fifteen years.

Conditions Affecting Service, Performance, and Costs
The costs of water services as captured here do not include debt service but do capture depreciation.

The difficult weather, including drought conditions in FY 2009–10, produced more breaks in main lines. An improvement in the weather helped to lower the "breaks and leaks per mile of main line pipe" measure.

Municipal Profile

Estimated Service Population	84,483
Service Land Area (Square Miles)	169.0
Persons per Square Mile	500
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Staff Positions	
Treatment Plant	26.0
Line Crews	25.0
Meter Readers	4.0
Billing/Collection	10.0
Other	11.0
Total	76.0
Number of Treatment Plants	2
Total Treatment Capacity	24.0 MG
Average Daily Demand	9.2 MG
Miles of Main Line Pipe	682
Average Age of Main Line Pipe	31 years
Number of Breaks/Leaks	771
Number of Water Meters	37,040
Percent of Meters Read Automatically	98.2%
Total Revenues Collected	$18,603,781

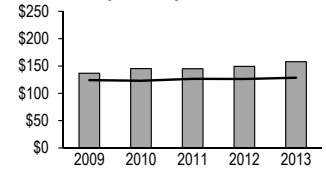
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	30.8%
Operating Costs	45.3%
Capital Costs	24.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,100,129
Operating Costs	$6,030,976
Capital Costs	$3,192,443
TOTAL	$13,323,548

Key: Concord ■ Benchmarking Average — Fiscal Years 2009 through 2013

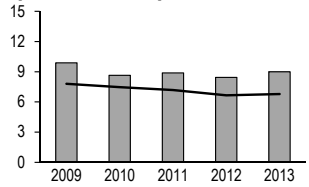
Resource Measures

Water Services Cost per Capita



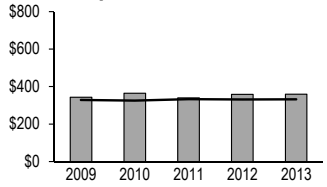
	2009	2010	2011	2012	2013
Concord	$137	$145	$145	$149	$158
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Concord	9.9	8.7	8.9	8.4	9.0
Average	7.8	7.5	7.2	6.7	6.8

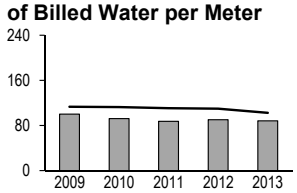
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Concord	$343	$365	$340	$358	$360
Average	$328	$325	$333	$331	$332

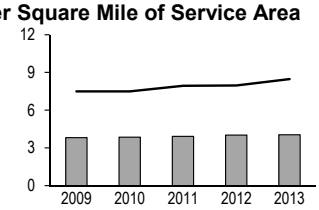
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Concord	100.3	92.3	87.6	90.2	88.4
Average	113.4	112.6	110.6	109.9	102.5

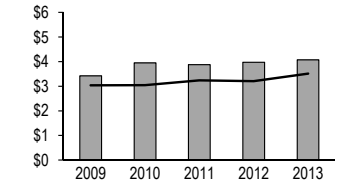
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Concord	3.8	3.8	3.9	4.0	4.0
Average	7.5	7.5	7.9	8.0	8.5

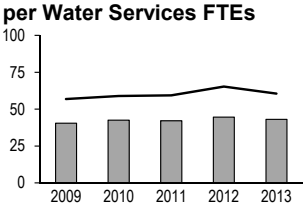
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



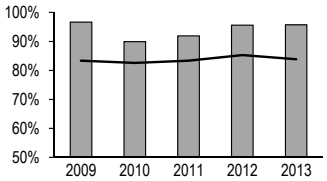
	2009	2010	2011	2012	2013
Concord	$3.42	$3.95	$3.88	$3.97	$4.07
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Concord	40.5	42.5	42.1	44.6	43.1
Average	56.9	58.9	59.3	65.3	60.6

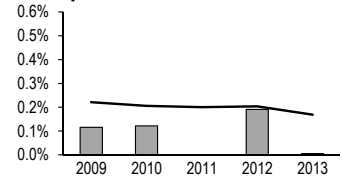
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Concord	97%	90%	92%	96%	96%
Average	83%	83%	83%	85%	84%

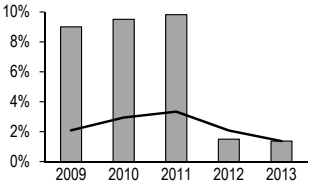
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



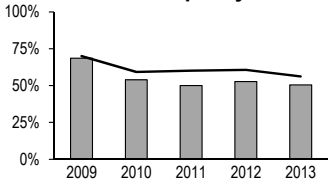
	2009	2010	2011	2012	2013
Concord	0.12%	0.12%	0.00%	0.19%	0.01%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



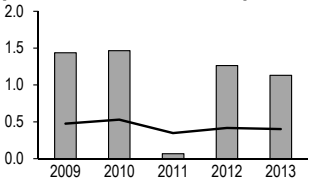
	2009	2010	2011	2012	2013
Concord	9.00%	9.51%	9.81%	1.50%	1.37%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



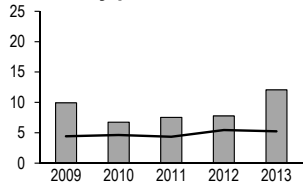
	2009	2010	2011	2012	2013
Concord	69%	54%	50%	53%	50%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Concord	1.44	1.47	0.07	1.26	1.13
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Concord	9.93	6.75	7.52	7.76	12.07
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Durham Department of Water Management is a combined utility providing drinking water along with wastewater treatment. The broader utility fund also makes use of services from the Finance Department and the Public Works Department's Engineering Divison.

Durham's system provides water to all water customers in the City of Durham and to additional customers in Durham County. Approximately 259,000 people are served by the system.

The water source for the system is two city-owned reservoirs, the Little River reservoir and Lake Michie in the Neuse River basin. Durham also has emergency connections with Cary, OWASA, Hillsborough, Chatham County, Orange-Alamance, and Morrisville.

Durham has two treatment facilities with combined capacity of fifty-two million gallons per day. The Little River reservoir flows by gravity to the treatment plant, but Lake Michie uses purchased electricity to pump water to the two treatment plants. Durham has many water main lines that are over 100 years old but generally plans on replacement at 100 years, depending on materials. The water system has two pressure zones, regular and high.

Larger meters are read monthly and smaller meters are read every two months. Currently, about 71.8 percent of Durham's meters are read by automatic means, but the city is planning over the next few years to replace all residential touch-read meters with drive-by automated meters. Meters are generally replaced every fifteen to twenty years.

Conditions Affecting Service, Performance, and Costs

The costs of water service as captured here do not include debt service but do capture depreciation.

Durham did not participate in the benchmarking project during FY 2010–11 and FY 2011–12, accounting for the gap in the graphs shown on the adjacent page.

Municipal Profile

Estimated Service Population	258,636
Service Land Area (Square Miles)	144.0
Persons per Square Mile	1,796
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Staff Positions	
Treatment Plant	38.0
Line Crews	38.0
Meter Readers	15.0
Billing/Collection	16.0
Other	32.0
Total	139.0
Number of Treatment Plants	2
Total Treatment Capacity	52.0 MG
Average Daily Demand	26.6 MG
Miles of Main Line Pipe	1,201
Average Age of Main Line Pipe	70 years
Number of Breaks/Leaks	595
Number of Water Meters	88,389
Percent of Meters Read Automatically	71.8%
Total Revenues Collected	$64,749,140

Full Cost Profile

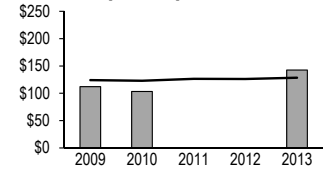
Cost Breakdown by Percentage	
Personal Services	27.3%
Operating Costs	27.4%
Capital Costs	45.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,074,164
Operating Costs	$10,103,771
Capital Costs	$16,681,568
TOTAL	$36,859,503

Durham Water Services

Key: Durham ■ Benchmarking Average — Fiscal Years 2009 through 2013

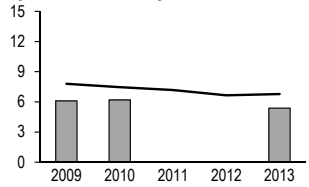
Resource Measures

Water Services Cost per Capita



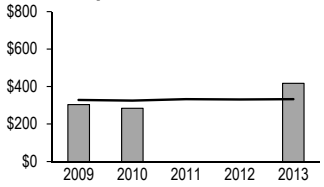
	2009	2010	2011	2012	2013
Durham	$112	$103			$143
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Durham	6.1	6.2			5.4
Average	7.8	7.5	7.2	6.7	6.8

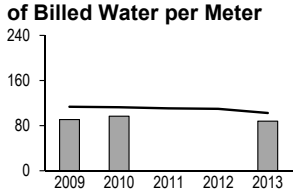
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Durham	$304	$284			$417
Average	$328	$325	$333	$331	$332

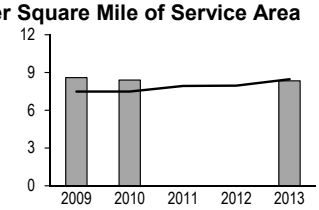
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Durham	90.8	96.7			88.1
Average	113.4	112.6	110.6	109.9	102.5

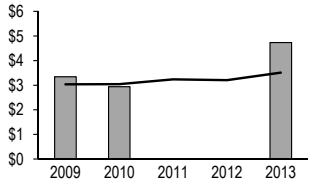
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Durham	8.6	8.4			8.3
Average	7.5	7.5	7.9	8.0	8.5

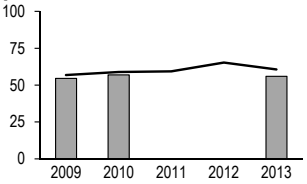
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



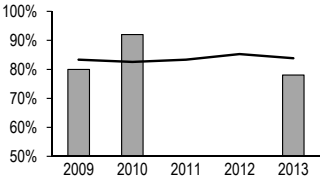
	2009	2010	2011	2012	2013
Durham	$3.34	$2.94			$4.73
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Durham	54.6	57.0			56.0
Average	56.9	58.9	59.3	65.3	60.6

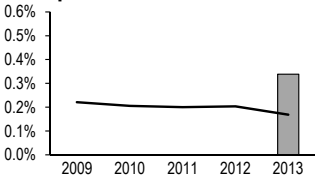
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Durham	80%	92%			78%
Average	83%	83%	83%	85%	84%

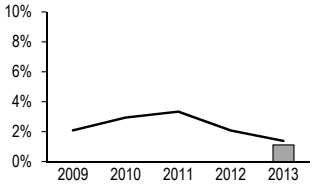
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



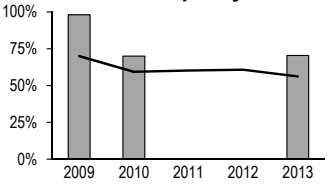
	2009	2010	2011	2012	2013
Durham					0.34%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



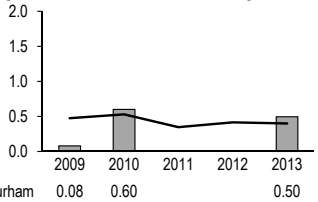
	2009	2010	2011	2012	2013
Durham					1.11%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



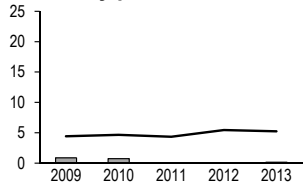
	2009	2010	2011	2012	2013
Durham	98%	70%			70%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Durham	0.08	0.60			0.50
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Durham	0.87	0.74			0.15
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Greensboro's drinking water is provided by the Water Supply Division, which is part of the Water Resources Department, which also includes wastewater and stormwater services. The water system serves approximately 216,000 people in an area covering about 148 square miles. In addition to City of Greensboro residents, the system serves many addresses in Guilford County in areas adjacent to the city limits.

Water sources for the system are three city-owned reservoirs in the Haw River basin, which is part of the Upper Cape Fear River basin. The estimated safe yield of the system is 42 million gallons per day, based on a fifty-year esimate as certified by engineers. The system has emergency connections with High Point, Burlington, Reidsville, and Winston-Salem.

The city runs two treatment plants with a combined capacity of 54 million gallons. Both plants use conventional surface water treatment.

The estimated average age of main line pipes in the system is thirty-seven years. Greensboro has begun a spending program on water line rehabilitation and plans to increase funding for this activity for the next several years.

Water meters are read and billed monthly. All meters are read automatically using a radio system. Greensboro started the conversion to radio-read meters in 2006 and completed this conversion in the spring of 2009.

Conditions Affecting Service, Performance, and Costs

Greensboro has a very high collection rate for water bills. The city has a lien law, so only a small portion of billed amounts goes unpaid. The lien law was changed during FY 2010–11 so that it now only includes owners and not tenants.

Greensboro has a $240,555-per-year public education program to encourage water conservation.

The costs of water services as captured here do not include debt service but do capture depreciation.

Water complaints in Greensboro rose in part due to a change in the method of disinfection being used, which led some customers to call the city. The change in the disinfection method also led to additional flushing of water lines and, consequently, some water could not be billed.

Municipal Profile

Estimated Service Population	215,700
Service Land Area (Square Miles)	148.0
Persons per Square Mile	1,457
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Staff Positions	
Treatment Plant	54.6
Line Crews	69.4
Meter Readers	15.0
Billing/Collection	9.0
Other	11.5
Total	159.5
Number of Treatment Plants	2
Total Treatment Capacity	54.0 MG
Average Daily Demand	34.1 MG
Miles of Main Line Pipe	1,481
Average Age of Main Line Pipe	37 years
Number of Breaks/Leaks	132
Number of Water Meters	103,507
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$43,314,261

Full Cost Profile

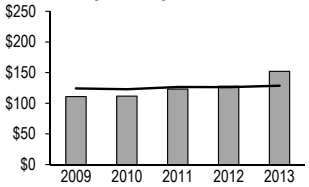
Cost Breakdown by Percentage	
Personal Services	16.0%
Operating Costs	67.6%
Capital Costs	16.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,261,561
Operating Costs	$22,176,361
Capital Costs	$5,353,907
TOTAL	$32,791,829

Greensboro Water Services

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2009 through 2013

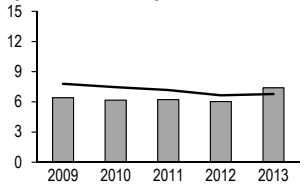
Resource Measures

Water Services Cost per Capita



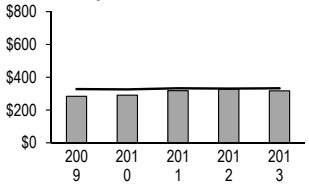
	2009	2010	2011	2012	2013
Greensboro	$111	$112	$123	$128	$152
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Greensboro	6.4	6.2	6.2	6.0	7.4
Average	7.8	7.5	7.2	6.7	6.8

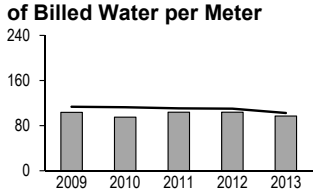
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Greensboro	$284	$291	$318	$328	$317
Average	$328	$325	$333	$331	$332

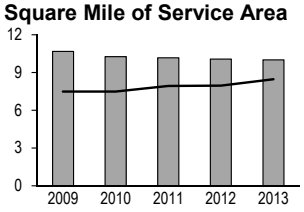
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Greensboro	103.6	94.9	103.8	103.8	97.1
Average	113.4	112.6	110.6	109.9	102.5

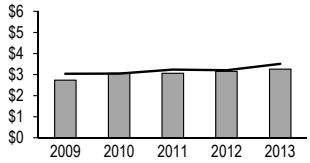
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Greensboro	10.7	10.3	10.2	10.1	10.0
Average	7.5	7.5	7.9	8.0	8.5

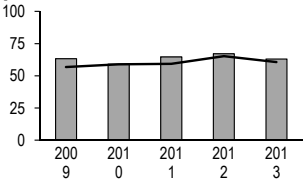
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



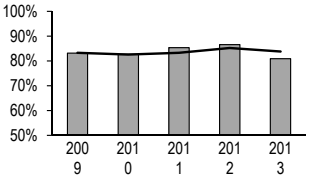
	2009	2010	2011	2012	2013
Greensboro	$2.74	$3.06	$3.06	$3.16	$3.26
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Greensboro	63.2	59.0	64.7	67.1	63.0
Average	56.9	58.9	59.3	65.3	60.6

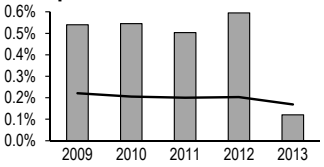
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Greensboro	83%	83%	85%	87%	81%
Average	83%	83%	83%	85%	84%

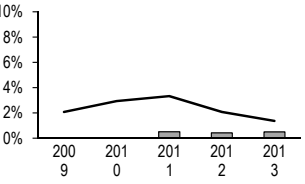
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



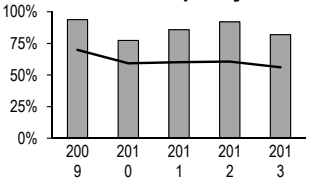
	2009	2010	2011	2012	2013
Greensboro	0.54%	0.55%	0.50%	0.59%	0.12%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



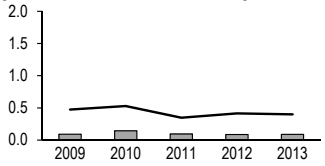
	2009	2010	2011	2012	2013
Greensboro	0.03%	0.03%	0.51%	0.43%	0.50%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



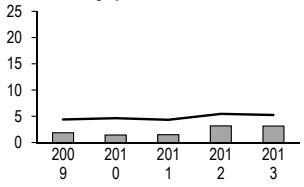
	2009	2010	2011	2012	2013
Greensboro	94%	77%	86%	92%	82%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Greensboro	0.09	0.14	0.09	0.09	0.09
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Greensboro	1.86	1.43	1.50	3.19	3.15
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Water services in Hickory are provided by a combined water distribution division under the Public Services Department. The water system services an area covering roughly 326 square miles and approximately 92,000 people. Water is provided for the city of Hickory and also for the towns of Hildenbran, Brookford, and Catawba; the Sherrill's Ford, Mountain View, and Cooksville communities of Catawba County; and the Bethlehem, Sugarloaf, and Highway 16 communities of Alexander County.

Source water is from the Catawba River basin, with an estimated safe yield of 54 million gallons per day. Hickory sells water to the systems in Conover, Claremont, and Icard Township. The system has one treatment plant with a capacity of 32 million gallons per day.

Water meters are read monthly. Hickory's replacement standard for water meters is twenty years. About 6.8 percent of water meters in the system are read by automatic means.

Conditions Affecting Service, Performance, and Costs

The costs of water services as captured here do not include debt service but do capture depreciation.

The increase in water quality complaints in FY 2011 –2012 was due to an abnormal increase in iron and manganese in the water source during the first quarter of the year. Approximately 600 "dirty water" calls were received during this period, but this was not a safety issue for the water.

Municipal Profile

Estimated Service Population	92,000
Service Land Area (Square Miles)	326.0
Persons per Square Mile	282
Topography	Flat; gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Staff Positions	
Treatment Plant	12.0
Line Crews	35.0
Meter Readers	6.0
Billing/Collection	2.5
Other	2.0
Total	57.5
Number of Treatment Plants	1
Total Treatment Capacity	32.0 MG
Average Daily Demand	10.4 MG
Miles of Main Line Pipe	917
Average Age of Main Line Pipe	60 years
Number of Breaks/Leaks	171
Number of Water Meters	28,365
Percent of Meters Read Automatically	6.8%
Total Revenues Collected	$8,157,141

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	34.8%
Operating Costs	54.0%
Capital Costs	11.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,672,901
Operating Costs	$4,152,717
Capital Costs	$864,848
TOTAL	$7,690,466

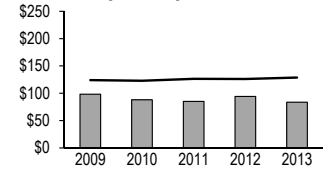
Hickory

Water Services

Key: Hickory ■ Benchmarking Average — Fiscal Years 2009 through 2013

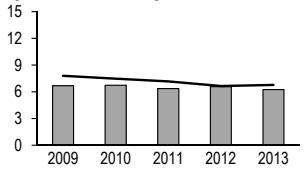
Resource Measures

Water Services Cost per Capita



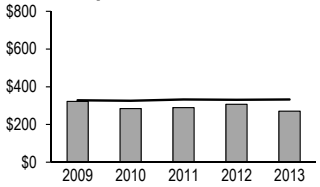
	2009	2010	2011	2012	2013
Hickory	$98	$88	$85	$94	$84
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Hickory	6.7	6.7	6.4	6.6	6.3
Average	7.8	7.5	7.2	6.7	6.8

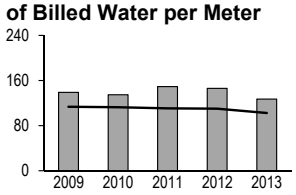
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Hickory	$322	$285	$289	$307	$271
Average	$328	$325	$333	$331	$332

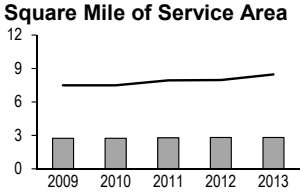
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Hickory	138.9	134.8	149.2	146.0	127.0
Average	113.4	112.6	110.6	109.9	102.5

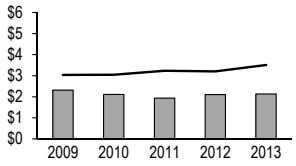
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Hickory	2.7	2.7	2.8	2.8	2.8
Average	7.5	7.5	7.9	8.0	8.5

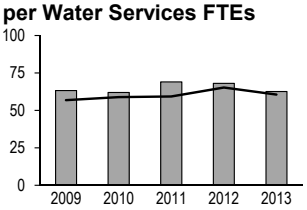
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



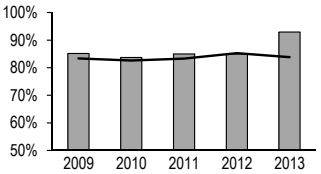
	2009	2010	2011	2012	2013
Hickory	$2.32	$2.11	$1.94	$2.10	$2.14
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Hickory	63.3	62.0	69.0	68.0	62.6
Average	56.9	58.9	59.3	65.3	60.6

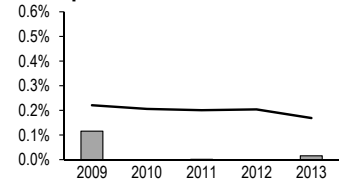
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Hickory	85%	84%	85%	85%	93%
Average	83%	83%	83%	85%	84%

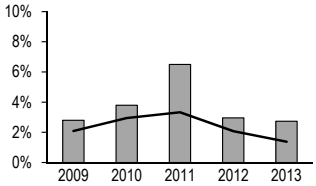
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



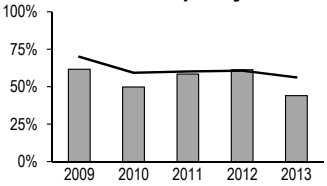
	2009	2010	2011	2012	2013
Hickory	0.12%	0.00%	0.00%	0.00%	0.02%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



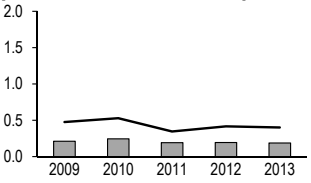
	2009	2010	2011	2012	2013
Hickory	2.80%	3.80%	6.50%	2.96%	2.73%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



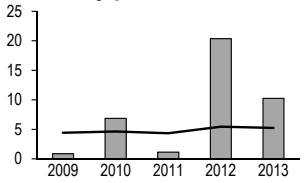
	2009	2010	2011	2012	2013
Hickory	62%	50%	58%	61%	44%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Hickory	0.21	0.24	0.19	0.19	0.19
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Hickory	0.87	6.87	1.14	20.35	10.26
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of High Point's drinking water services are part of a combined Water/Sewer Division under the Public Services Department. The system covers sixty-four square miles and serves approximately 108,000 people.

Water sources for the system are two city-owned reservoirs located in the Deep River basin and the Piedmont Triad Regional Water Authority. The estimated safe yield of the system is 22 million gallons per day. The system has one treatment plant and uses an upflow clarification process and a super "U" pulsator with a treatment capacity of 24 million gallons per day.

Water meters are read monthly. Approximately 15 percent of meters are read by automatic means. The city has a standard to replace water meters every ten years on average.

Conditions Affecting Service, Performance, and Costs

High Point has a very high collection rate for water bills. The city participates in the State of North Carolina's debt set-off program. The program is in place to garnish a person's state tax return if he or she does not pay his or her bill. In addition, High Point performs a credit check with Equifax based on the customer's payment history.

The costs of water services as captured here do not include debt service but do capture depreciation.

High Point is a partner in the Piedmont Triad Regional Water Authority. It received 2.68 millions gallons per day through the partnership. This has changed the High Point system from a single-pressure zone system to a double-pressure zone system.

Municipal Profile

Estimated Service Population	108,000
Service Land Area (Square Miles)	64.0
Persons per Square Mile	1,688
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Staff Positions	
Treatment Plant	12.0
Line Crews	19.0
Meter Readers	5.0
Billing/Collection	6.0
Other	14.5
Total	56.5
Number of Treatment Plants	1
Total Treatment Capacity	24.0 MG
Average Daily Demand	12.2 MG
Miles of Main Line Pipe	615
Average Age of Main Line Pipe	38 years
Number of Breaks/Leaks	230
Number of Water Meters	40,647
Percent of Meters Read Automatically	14.8%
Total Revenues Collected	$17,065,706

Full Cost Profile

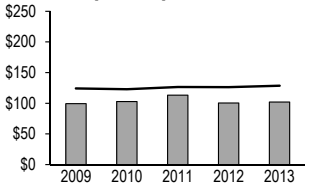
Cost Breakdown by Percentage	
Personal Services	27.9%
Operating Costs	38.6%
Capital Costs	33.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,078,852
Operating Costs	$4,256,133
Capital Costs	$3,686,652
TOTAL	$11,021,637

High Point — Water Services

Key: High Point ■ Benchmarking Average — Fiscal Years 2009 through 2013

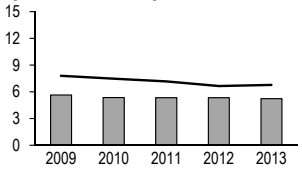
Resource Measures

Water Services Cost per Capita



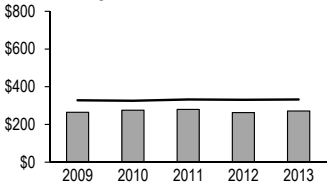
	2009	2010	2011	2012	2013
High Point	$99	$103	$113	$100	$102
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
High Point	5.6	5.4	5.3	5.3	5.2
Average	7.8	7.5	7.2	6.7	6.8

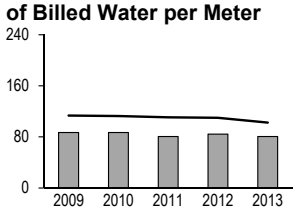
Water Services Cost per Meter



	2009	2010	2011	2012	2013
High Point	$265	$276	$280	$263	$271
Average	$328	$325	$333	$331	$332

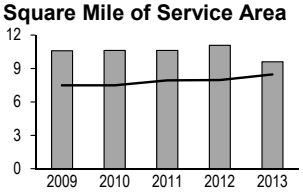
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
High Point	86.9	87.0	80.6	84.3	80.5
Average	113.4	112.6	110.6	109.9	102.5

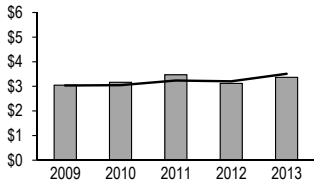
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
High Point	10.6	10.6	10.6	11.1	9.6
Average	7.5	7.5	7.9	8.0	8.5

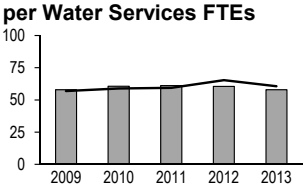
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



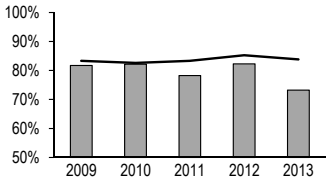
	2009	2010	2011	2012	2013
High Point	$3.04	$3.17	$3.47	$3.12	$3.37
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
High Point	57.9	60.7	61.2	60.5	57.9
Average	56.9	58.9	59.3	65.3	60.6

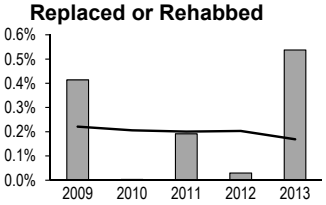
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
High Point	82%	82%	78%	82%	73%
Average	83%	83%	83%	85%	84%

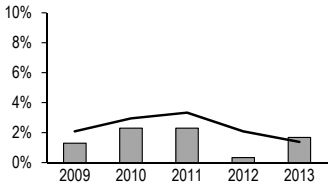
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



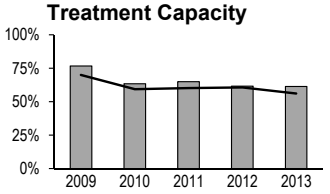
	2009	2010	2011	2012	2013
High Point	0.41%	0.00%	0.19%	0.03%	0.54%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



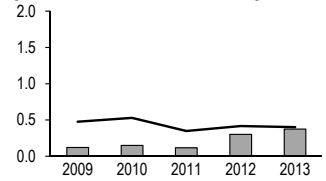
	2009	2010	2011	2012	2013
High Point	1.29%	2.30%	2.30%	0.33%	1.67%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



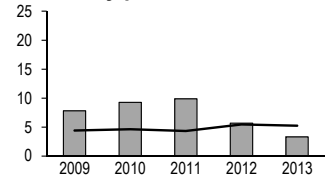
	2009	2010	2011	2012	2013
High Point	77%	63%	65%	62%	61%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
High Point	0.12	0.15	0.12	0.30	0.37
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
High Point	7.81	9.27	9.87	5.68	3.30
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Salisbury provides water service through an enterprise fund department. This department is known as Salisbury-Rowan Utilities. The system covers 47.2 square miles and covers much of Rowan County. Approximately 53,000 people are served. In the late 1990s and early 2000s, Salisbury assumed ownership of the water and sewer systems of the towns of Spencer, Granite Quarry, and Rockwell, followed by China Grove in 2011. Rowan County turned over its water assets to Salisbury in 2004. Salisbury also sells bulk water to the towns of East Spencer, China Grove, Landis, and to the City of Kannapolis.

The water source for the system is the Yadkin River. The estimated safe yield for the system is 108 million gallons per day. The system has one treatment plant with a capacity of 25 million gallons per day. The plant uses an Actiflo pre-treatment process followed by a conventional sedimentation and filtration treatment process.

Water meters are read once per month. Currently, approximately 4 percent of meters are read by automatic means. The standard for meter replacement is fifteen years.

Conditions Affecting Service, Performance, and Costs

The costs of water services as captured here do not include debt service but do capture depreciation.

Municipal Profile

Estimated Service Population	52,600
Service Land Area (Square Miles)	47.2
Persons per Square Mile	1,114
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Staff Positions	
Treatment Plant	8.0
Line Crews	12.5
Meter Readers	11.0
Billing/Collection	5.0
Other	7.5
Total	44.0
Number of Treatment Plants	1
Total Treatment Capacity	25.0 MG
Average Daily Demand	8.7 MG
Miles of Main Line Pipe	418
Average Age of Main Line Pipe	46 years
Number of Breaks/Leaks	327
Number of Water Meters	18,905
Percent of Meters Read Automatically	3.9%
Total Revenues Collected	$11,930,580

Full Cost Profile

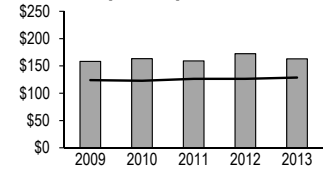
Cost Breakdown by Percentage	
Personal Services	28.9%
Operating Costs	41.5%
Capital Costs	29.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,475,809
Operating Costs	$3,552,135
Capital Costs	$2,539,719
TOTAL	$8,567,663

Salisbury — Water Services

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2009 through 2013

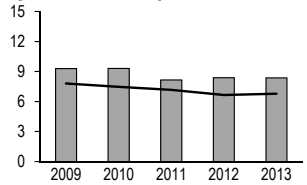
Resource Measures

Water Services Cost per Capita



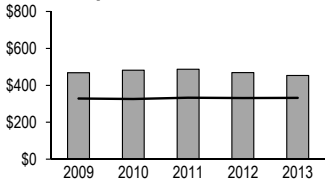
	2009	2010	2011	2012	2013
Salisbury	$158	$163	$159	$172	$163
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Salisbury	9.3	9.3	8.2	8.4	8.4
Average	7.8	7.5	7.2	6.7	6.8

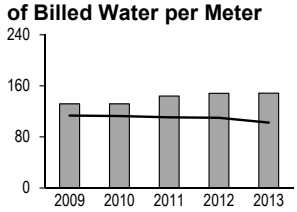
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Salisbury	$468	$482	$488	$469	$453
Average	$328	$325	$333	$331	$332

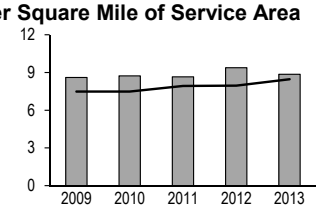
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Salisbury	131.6	131.7	144.0	148.1	148.6
Average	113.4	112.6	110.6	109.9	102.5

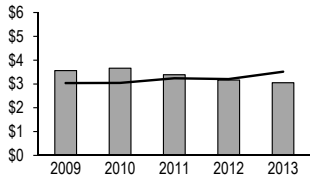
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Salisbury	8.6	8.7	8.6	9.4	8.9
Average	7.5	7.5	7.9	8.0	8.5

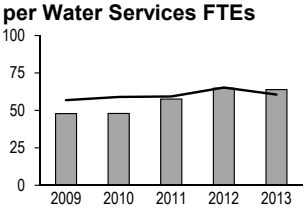
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



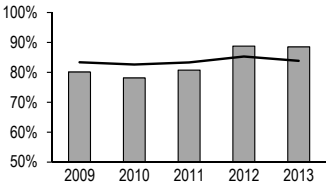
	2009	2010	2011	2012	2013
Salisbury	$3.56	$3.66	$3.39	$3.17	$3.05
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Salisbury	47.9	47.9	57.6	64.9	63.9
Average	56.9	58.9	59.3	65.3	60.6

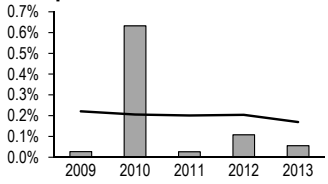
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Salisbury	80%	78%	81%	89%	89%
Average	83%	83%	83%	85%	84%

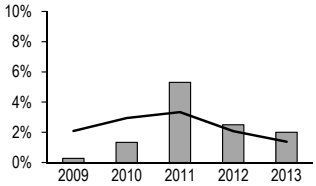
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



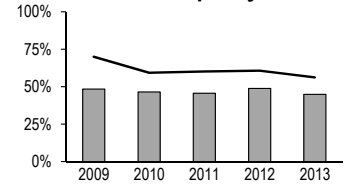
	2009	2010	2011	2012	2013
Salisbury	0.03%	0.63%	0.03%	0.11%	0.06%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



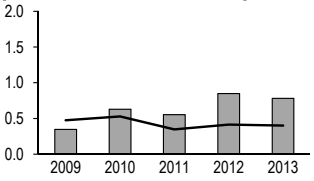
	2009	2010	2011	2012	2013
Salisbury	0.28%	1.33%	5.31%	2.50%	2.00%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



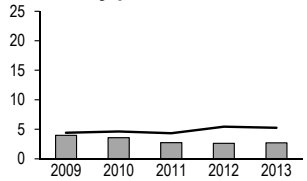
	2009	2010	2011	2012	2013
Salisbury	48%	46%	46%	49%	45%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Salisbury	0.35	0.63	0.55	0.85	0.78
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Salisbury	3.98	3.57	2.73	2.62	2.70
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Water services in Wilson are handled by a combined water/sewer division under the Department of Public Works. Billing services are handled by the Wilson Finance Department. The water system serves approximately 51,000 people over thirty-nine square miles.

Source water for the system comes from four city-owned reservoirs. Water is also pumped from two different reservoirs in the Neuse River basin. The estimated safe yield for the system is 29 million gallons per day.

The system has two treatment plants with a combined treatment capacity of 22 million gallons per day. The plants use conventional surface water treatment with flocculation, sedimentation, and filtration.

Water meters are read once per month in Wilson. Approximately 15 percent of the water meters in the system are read by automatic remote means using a radio system by Itron.

Conditions Affecting Service, Performance, and Costs
The costs of water services as captured here do not include debt service but do capture depreciation. Large capital improvements are being made to the Buckhorn Lake Dam and Wastewater Projects, which have been required to meet advanced nutrient removal.

Due to better mapping accuracy, the reported service area decreased from 99 to 39 square miles. The improved mapping more precisely defined which areas were in the service area and excluded broader areas that were previously included in the area calculations. This apparent jump in the miles of pipe per square mile is a result of this improved accuracy of the area served and not due to the laying of more pipe.

Municipal Profile

Estimated Service Population	51,110
Service Land Area (Square Miles)	39.0
Persons per Square Mile	1,311
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Staff Positions	
Treatment Plant	18.0
Line Crews	18.0
Meter Readers	2.0
Billing/Collection	2.0
Other	1.0
Total	41.0
Number of Treatment Plants	2
Total Treatment Capacity	22.0 MG
Average Daily Demand	8.5 MG
Miles of Main Line Pipe	419
Average Age of Main Line Pipe	43 years
Number of Breaks/Leaks	133
Number of Water Meters	22,185
Percent of Meters Read Automatically	14.9%
Total Revenues Collected	$10,301,487

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	32.1%
Operating Costs	44.0%
Capital Costs	24.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,852,373
Operating Costs	$3,911,790
Capital Costs	$2,135,220
TOTAL	$8,899,383

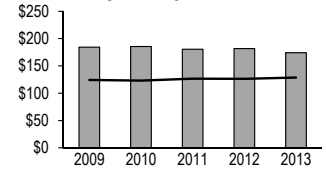
Wilson

Water Services

Key: Wilson ■ Benchmarking Average — Fiscal Years 2009 through 2013

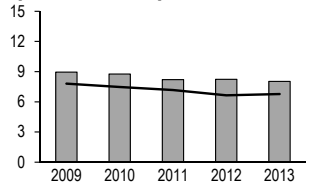
Resource Measures

Water Services Cost per Capita



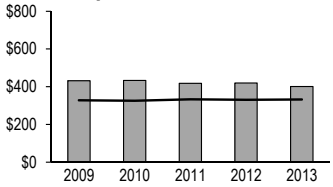
	2009	2010	2011	2012	2013
Wilson	$184	$185	$180	$182	$174
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Wilson	9.0	8.8	8.2	8.2	8.0
Average	7.8	7.5	7.2	6.7	6.8

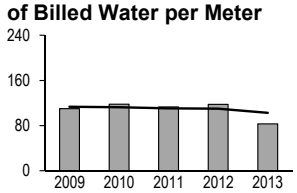
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Wilson	$432	$434	$418	$420	$401
Average	$328	$325	$333	$331	$332

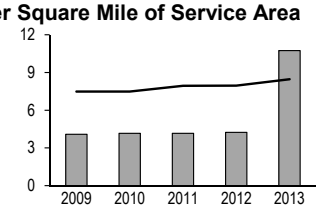
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Wilson	109.8	117.9	112.9	117.5	83.1
Average	113.4	112.6	110.6	109.9	102.5

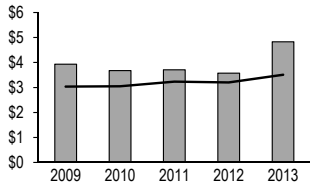
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Wilson	4.1	4.2	4.2	4.2	10.7
Average	7.5	7.5	7.9	8.0	8.5

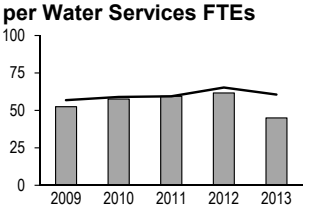
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



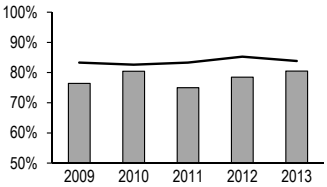
	2009	2010	2011	2012	2013
Wilson	$3.93	$3.68	$3.70	$3.57	$4.83
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Wilson	52.4	57.6	59.4	61.7	45.0
Average	56.9	58.9	59.3	65.3	60.6

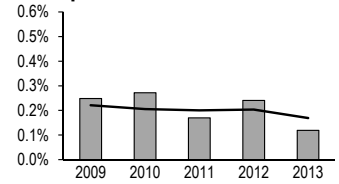
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Wilson	76%	80%	75%	78%	80%
Average	83%	83%	83%	85%	84%

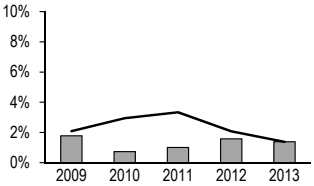
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



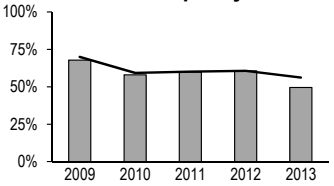
	2009	2010	2011	2012	2013
Wilson	0.25%	0.27%	0.17%	0.24%	0.12%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



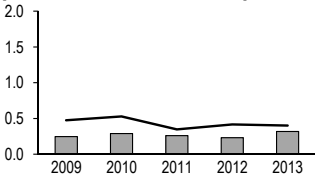
	2009	2010	2011	2012	2013
Wilson	1.77%	0.73%	1.00%	1.57%	1.39%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



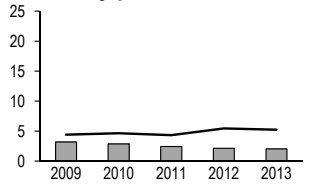
	2009	2010	2011	2012	2013
Wilson	68%	58%	60%	61%	50%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Wilson	0.25	0.29	0.26	0.23	0.32
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Wilson	3.19	2.87	2.45	2.13	2.03
Average	4.41	4.64	4.34	5.45	5.24

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Winston-Salem and Forsyth County Utilities Division operates a combined water and sewer system that covers the city and most of the remaining population of Forsyth County. Approximately 336,000 people are served in an area covering roughly 366 square miles.

The system has an eleven-member utility commission that was created by an interlocal agreement between the City of Winston-Salem and Forsyth County. The commission sets policy for publicly owned water, wastewater, and solid waste disposal facilities. The commission is also charged with the responsibility for long-range planning, authorizing funding for projects, operation and maintenance of facilities, and setting policies and rate structures. The commission is not authorized to issue bonds to finance capital improvements.

Water sources for the system are drawn from two separate points on the Yadkin River. The city also uses Salem Lake as a water source. The estimated safe yield for the system is 100 million gallons per day.

The city uses three treatment plants. During FY 2010–11, the R.A. Thomas Water Treatment Plant construction was completed, beginning operations in the spring of 2011 and replacing a plant built in the 1930s. With the three plants, daily treatment capacity is 91 million gallons. The plants all use conventional treatment employing coagulation, flocculation, and sedimentation followed by rapid sand filtration and then chlorine treatment for disinfection.

The system has 2,245 miles of pipeline with an estimated average age of fifty years. The replacement goal for pipes is seventy-five years.

Water meters are read both monthly and bi-monthly depending on the account type. Currently the system has a small number of meters read by automatic means, totaling approximately 6 percent. The replacement standard for water meters is approximately every ten years. The goal is to have completely switched to automatically read meters within ten years.

Conditions Affecting Service, Performance, and Costs

The costs of water services as captured here do not include debt service but do capture depreciation.

Municipal Profile

Estimated Service Population	336,243
Service Land Area (Square Miles)	366.0
Persons per Square Mile	919
Topography	Gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Staff Positions	
Treatment Plant	53.0
Line Crews	71.0
Meter Readers	13.0
Billing/Collection	8.0
Other	21.0
Total	166.0
Number of Treatment Plants	3
Total Treatment Capacity	91.0 MG
Average Daily Demand	35.9 MG
Miles of Main Line Pipe	2,245
Average Age of Main Line Pipe	50 years
Number of Breaks/Leaks	467
Number of Water Meters	123,647
Percent of Meters Read Automatically	6.3%
Total Revenues Collected	$48,255,588

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	24.6%
Operating Costs	38.9%
Capital Costs	36.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,114,854
Operating Costs	$11,238,662
Capital Costs	$10,512,928
TOTAL	$28,866,444

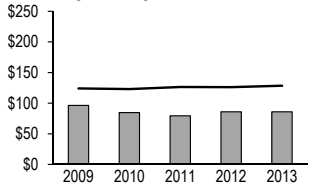
Winston-Salem

Water Services

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2009 through 2013

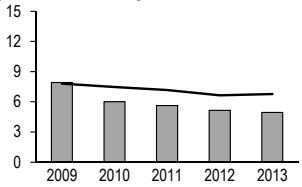
Resource Measures

Water Services Cost per Capita



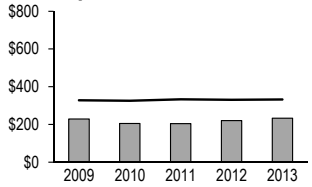
	2009	2010	2011	2012	2013
Winston-Salem	$96	$85	$80	$86	$86
Average	$124	$123	$126	$126	$129

Water Services FTEs per 10,000 Population



	2009	2010	2011	2012	2013
Winston-Salem	7.9	6.0	5.6	5.1	4.9
Average	7.8	7.5	7.2	6.7	6.8

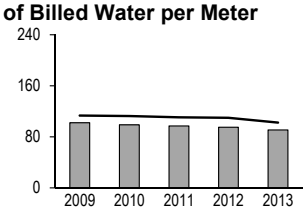
Water Services Cost per Meter



	2009	2010	2011	2012	2013
Winston-Salem	$229	$205	$204	$220	$233
Average	$328	$325	$333	$331	$332

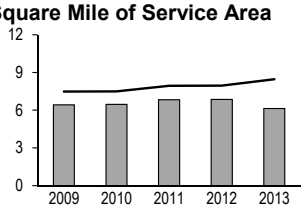
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2009	2010	2011	2012	2013
Winston-Salem	102.0	98.7	97.0	95.2	90.8
Average	113.4	112.6	110.6	109.9	102.5

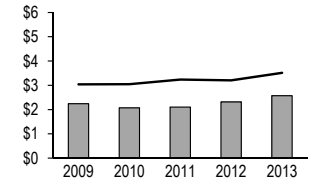
Miles of Main Line Pipe per Square Mile of Service Area



	2009	2010	2011	2012	2013
Winston-Salem	6.4	6.5	6.8	6.9	6.1
Average	7.5	7.5	7.9	8.0	8.5

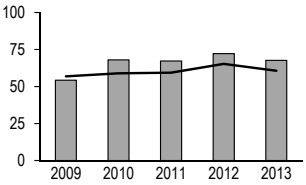
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



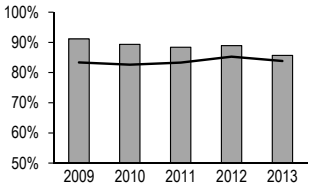
	2009	2010	2011	2012	2013
Winston-Salem	$2.24	$2.07	$2.10	$2.32	$2.57
Average	$3.04	$3.04	$3.24	$3.20	$3.51

Million Gallons of Billed Water per Water Services FTEs



	2009	2010	2011	2012	2013
Winston-Salem	54.2	67.9	67.2	72.2	67.6
Average	56.9	58.9	59.3	65.3	60.6

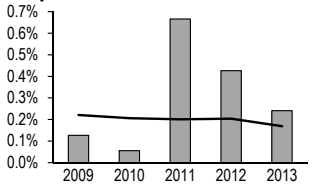
Billed Water as a Percentage of Finished Water



	2009	2010	2011	2012	2013
Winston-Salem	91%	89%	88%	89%	86%
Average	83%	83%	83%	85%	84%

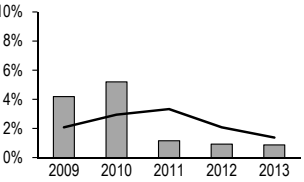
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



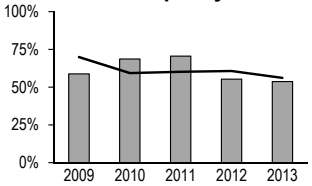
	2009	2010	2011	2012	2013
Winston-Salem	0.13%	0.06%	0.67%	0.43%	0.24%
Average	0.22%	0.21%	0.20%	0.20%	0.17%

Percentage of Water Bills Not Collected



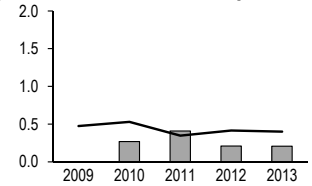
	2009	2010	2011	2012	2013
Winston-Salem	4.19%	5.20%	1.16%	0.93%	0.87%
Average	2.08%	2.94%	3.33%	2.08%	1.37%

Peak Daily Demand as a Percentage of Treatment Capacity



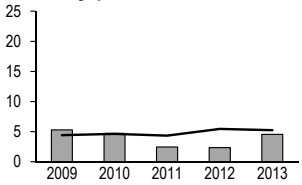
	2009	2010	2011	2012	2013
Winston-Salem	59%	69%	71%	55%	54%
Average	70%	59%	60%	61%	56%

Breaks and Leaks per Mile of Main Line Pipe



	2009	2010	2011	2012	2013
Winston-Salem		0.27	0.41	0.21	0.21
Average	0.47	0.53	0.35	0.42	0.40

Customer Complaints about Water Quality per 1,000 Meters



	2009	2010	2011	2012	2013
Winston-Salem	5.29	4.71	2.45	2.34	4.55
Average	4.41	4.64	4.34	5.45	5.24

UNC
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Performance and Cost Data

WASTEWATER SERVICES

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PERFORMANCE MEASURES FOR WASTEWATER SERVICES

SERVICE DEFINITION

Wastewater Services includes the collection, treatment, wastewater discharge, solids disposal, and billing related to sewer services. This service area includes the collection system after leaving the customer's outlet, lift stations, pretreatment, and treatment plants. Activities and costs include the operation, maintenance, and installation of infrastructure. Also included are costs and activities associated with billing and collection for sewer services and administrative activities such as planning, engineering, and testing. This includes wastewater treated for reuse at the plant site and for other purposes. Excluded are potable water systems and stormwater systems.

NOTES ON PERFORMANCE MEASURES

1. Volume of Sewage per Account

This workload measure captures the amount of wastewater generated and received at the treatment plant relative to the number of customers.

2. Miles of Sewer Main Line Pipe per Square Mile of Service Area

The amount of sewer main line pipe per square mile shows the density of the pipe infrastructure to be maintained relative to the geographic size of the area served.

3. Number of Lift Stations per 1,000 Accounts

This workload measure provides some idea of the amount of reliance on pumping in a system to supplement gravity-fed delivery. Lift stations also generate additional maintenance workload.

4. Cost per 1,000 Gallons of Collected and Treated Wastewater

This efficiency measure shows total system costs relative to the volume of wastewater reaching treatment plants. Some wastewater does not make it to treatment plants.

5. Wastewater Volume in Millions of Gallons per FTE

This efficiency measure captures the number of workers the system is using relative to the volume of wastewater treated.

6. Customer Accounts per FTE

The number of customer accounts relative to the number of workers is another efficiency measure showing how many customers are being served per worker.

7. Percentage of Bills Collected
Collection of wastewater bills sent to customers is necessary to ensure revenues for system operation. Bills not collected reflect potential lost revenue to the system, but some loss is unavoidable.

8. Average Daily Treatment as a Percent of Permitted Capacity
A wastewater system needs sufficient capacity to not only meet average demands, but also peak demands. This measure looks at average daily demand relative to the wastewater system treatment capacity in a day. Some excess capacity is needed to allow for daily service variations and also to plan for future expansion needs.

9. Percent of Existing Main Line Pipe Rehabilitated or Replaced
As the wastewater systems ages, pipe needs to be replaced to ensure that service will not be interrupted. This effectiveness measure captures the amount of current stock being replaced or rehabilitated during a given year.

10. Overflows Per 100 Miles of Mainline Pipe
Sanitary system overflows may be due to blockages or breaks in pipe. Keeping these breaks to a low level is an important measure of the effectiveness of preventive maintenance and system upkeep. Overflows, if large enough, may also represent a public health concern.

11. Sewer Backups per 100 Miles of Main Line Pipe
Backups in sewer pipes are another measure of potential maintenance concerns, not to mention being a public health concern. Backups may also be a sign of insufficient maintenance.

12. Billed Sewer Effluents as a Percent of Treated Effluent
The volume of wastewater that is billed for relative to the volume received at the treatment plant is an effectiveness measure that points to potential losses in the collection system. Some loss is inevitable in sewer systems, and not all drinking water billed for is used in such a way that it should make it back to the wastewater treatment plant. But comparisons may reveal excessive infiltration or leakage.

Wastewater Services

Summary of Key Dimensions of Service

City or Town	Estimated Residential Population in Service Area	Service Area (in Square Miles)	Operating Treatment Plants	Average Daily Flow of Wastewater at Plants (in MGD)	Total Treatment Capacity for Wastewater (in MGD)	Miles of Gravity and Forced Main Lines	Number of Wastewater Customers	Sewer System FTE Positions
Apex	40,769	16.4	1	2.7	3.6	317.8	13,240	29.0
Cary	167,340	75.5	2	12.0	24.8	901.0	54,613	90.4
Charlotte	969,031	546.0	5	78.9	123.0	4,170.0	238,854	387.0
Concord	82,139	109.6	0	NA	NA	543.0	31,867	39.0
Durham	243,118	144.0	2	17.6	40.0	1,293.4	77,096	163.0
Greensboro	215,700	148.0	2	26.3	56.0	1,478.3	99,657	160.9
Hickory	37,478	51.2	3	5.5	15.2	500.0	14,871	46.0
High Point	108,000	64.0	2	17.1	32.2	669.9	38,657	98.5
Salisbury	51,900	45.3	2	7.1	12.5	424.1	16,203	55.0
Wilson	53,100	34.0	1	8.3	14.0	354.0	20,219	65.0
Winston-Salem	336,243	366.0	2	31.1	51.0	1,724.0	94,406	184.0

NOTES

MGD stands for millions of gallons per day.

EXPLANATORY FACTORS

These are factors that the project found affected wastewater services performance and cost in one or more of the municipalities:

Topography
Size of service area
Population density
Age of infrastructure
Growth of population and businesses

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater services for the Town of Apex are managed by the Water Reclamation and Wastewater Collections Division under the Department of Public Works. The system covers the area within the municipal limits.

Apex has one treatment plant, which uses bar screens, grit removal, BNR, oxidation ditches, secondary clarifiers, sand filters, ultraviolet disinfection, aerobic sludge digestion, and rotary drum sludge dewatering as part of its treatment process. The Apex wastewater system has nutrient limits in place which restrict what can be discharged from the plant to protect water quality. Apex uses land application for biosolids resulting from treatment and also dries some biosolids as fertilizer pellets.

The town's system had no regulatory violations for the fiscal year.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	40,769
Service Land Area (Square Miles)	16.4
Persons per Square Mile	2,486
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Staff Positions	
Treatment Plant	9.0
Line Crews	14.0
Billing/Collection	2.0
Other	4.0
Number of Treatment Plants	1
Total Treatment Capacity	3.6 MGD
Average Daily Flow	2.7 MGD
River Basin into Which System Discharges	Neuse
Miles of Gravity Main Line Pipe	159
Miles of Forced Main Line Pipe	159
Average Age of Main Line Pipe	18 years
Blocks in Sewer Mains	21
Number of System Breaks	6
Sanitary System Overflows	3
Number of Customer Accounts	13,240
Total Revenues Collected	$8,698,087

Full Cost Profile

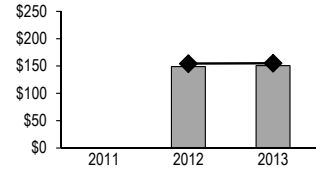
Cost Breakdown by Percentage	
Personal Services	35.1%
Operating Costs	40.1%
Capital Costs	24.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,155,596
Operating Costs	$2,464,212
Capital Costs	$1,527,744
TOTAL	$6,147,552

Apex — Wastewater Services

Key: Apex ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

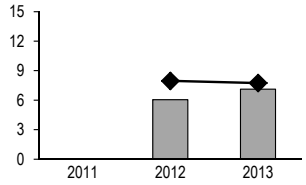
Resource Measures

Wastewater Services Cost per Capita



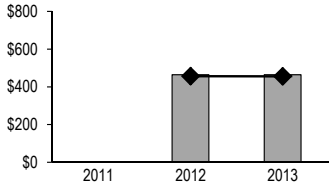
	2011	2012	2013
Apex		$149	$151
Average		$154	$155

Waterwater Services FTEs per 10,000 Population



	2011	2012	2013
Apex		6.1	7.1
Average		8.0	7.7

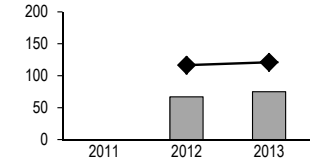
Waterwaste Services Cost per Customer Account



	2011	2012	2013
Apex		$464	$464
Average		$457	$456

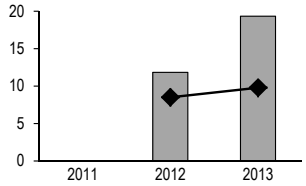
Workload Measures

Thousands of Gallons of Wastewater per Account



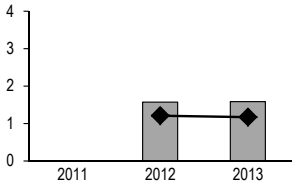
	2011	2012	2013
Apex		66.9	75.0
Average		116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2011	2012	2013
Apex		11.8	19.3
Average		8.5	9.8

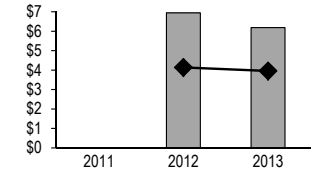
Number of Lift Stations per 1,000 Accounts



	2011	2012	2013
Apex		1.57	1.59
Average		1.21	1.17

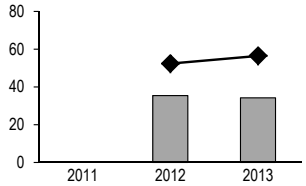
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



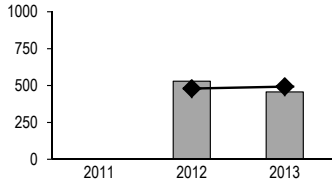
	2011	2012	2013
Apex		$6.94	$6.19
Average		$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2011	2012	2013
Apex		35.4	34.3
Average		52.4	56.5

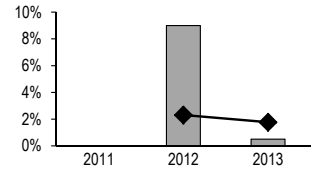
Customer Accounts per Wastewater Services FTE



	2011	2012	2013
Apex		530	457
Average		479	493

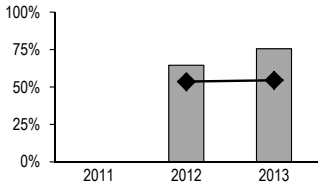
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



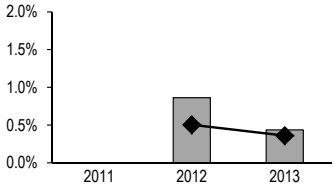
	2011	2012	2013
Apex		9.00%	0.50%
Average		2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



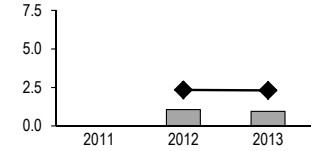
	2011	2012	2013
Apex		64.5%	75.6%
Average		53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



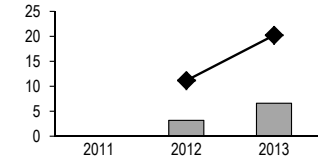
	2011	2012	2013
Apex		0.86%	0.44%
Average		0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



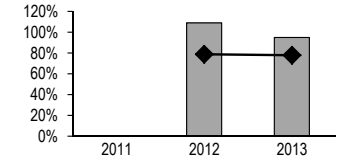
	2011	2012	2013
Apex		1.06	0.94
Average		2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2011	2012	2013
Apex		3.17	6.61
Average		11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2011	2012	2013
Apex		109%	95%
Average		79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater services for the Town of Cary are provided by the Public Works and Utilities Department. Divisions within the department are divided by functions, including pretreatment, collection system maintenance, and wastewater treatment. Billing and customer service are the responsibility of the Customer Accounting Division located in the Finance Department. The Engineering Department also provides support for the installation and upgrading of utility infrastructure.

The system in Cary covers not only the Town of Cary but also the Town of Morrisville, RDU Airport, and the Wake County portion of the Research Triangle Park. A small portion of this area only receives sewer (but not water) services from the Town of Cary.

Cary has two treatment plants with a total daily treatment capacity of 24.8 million gallons. The treatment plants rely on biological nutrient removal. The wastewater system in Cary has nutrient limits in place which regulate the nutrient loads that can be discharged from the treatment plants to protect water quality. In addition to wastewater discharged after treatment, the system produces dried class A biosolids of a high quality which are used as fertilizer and sold to a third-party company.

During the fiscal year, the system in Cary had no regulatory violations related to treatment but did have fourteen violations associated with the collection system. These collection violations were due to sanitary system overflows ranging from an estimated six gallons up to 53,548 gallons.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	167,340
Service Land Area (Square Miles)	75
Persons per Square Mile	2,231
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Staff Positions	
Treatment Plant	36.3
Line Crews	43.9
Billing/Collection	9.3
Other	1.0
Number of Treatment Plants	2
Total Treatment Capacity	24.8 MGD
Average Daily Flow	12.0 MGD
River Basin into Which System Discharges	Neuse and Cape Fear
Miles of Gravity Main Line Pipe	824
Miles of Forced Main Line Pipe	77
Average Age of Main Line Pipe	NA
Blocks in Sewer Mains	518
Number of System Breaks	66
Sanitary System Overflows	14
Number of Customer Accounts	54,613
Total Revenues Collected	$36,482,463

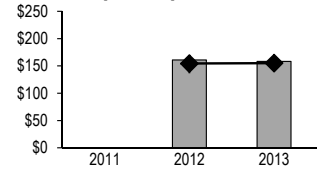
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	26.9%
Operating Costs	44.6%
Capital Costs	28.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,119,064
Operating Costs	$11,809,111
Capital Costs	$7,575,400
TOTAL	$26,503,575

Key: Cary ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

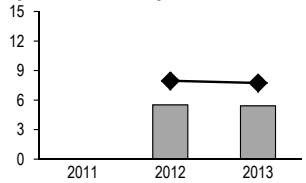
Resource Measures

Wastewater Services Cost per Capita



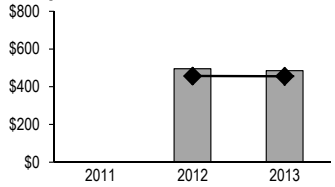
	2011	2012	2013
Cary		$161	$158
Average		$154	$155

Waterwater Services FTEs per 10,000 Population



	2011	2012	2013
Cary		5.5	5.4
Average		8.0	7.7

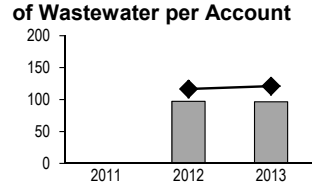
Waterwaste Services Cost per Customer Account



	2011	2012	2013
Cary		$496	$485
Average		$457	$456

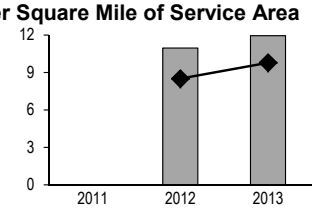
Workload Measures

Thousands of Gallons of Wastewater per Account



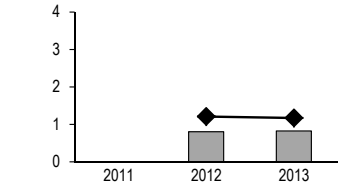
	2011	2012	2013
Cary		97.2	96.4
Average		116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2011	2012	2013
Cary		11.0	11.9
Average		8.5	9.8

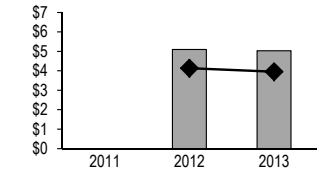
Number of Lift Stations per 1,000 Accounts



	2011	2012	2013
Cary		0.80	0.82
Average		1.21	1.17

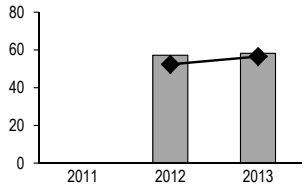
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



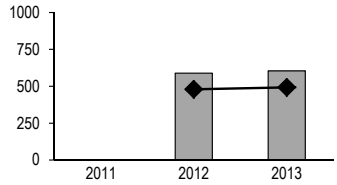
	2011	2012	2013
Cary		$5.10	$5.04
Average		$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2011	2012	2013
Cary		57.2	58.2
Average		52.4	56.5

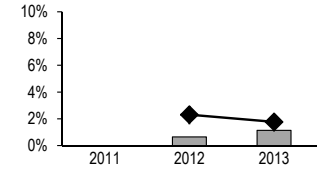
Customer Accounts per Wastewater Services FTE



	2011	2012	2013
Cary		589	604
Average		479	493

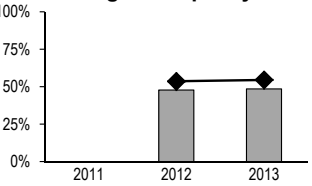
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



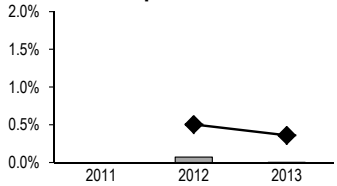
	2011	2012	2013
Cary		0.65%	1.14%
Average		2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



	2011	2012	2013
Cary		47.7%	48.5%
Average		53.6%	54.5%

Percent of Main Line Rehabbed or Replaced

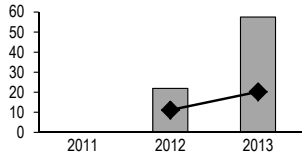


	2011	2012	2013
Cary		0.07%	0.00%
Average		0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe

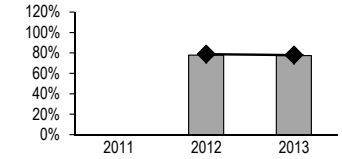
	2011	2012	2013
Cary		1.34	1.55
Average		2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2011	2012	2013
Cary		21.90	57.49
Average		11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2011	2012	2013
Cary		78%	77%
Average		79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater collection and treatment is handled by the Charlotte-Mecklenburg Utilities Department (CMUD). This is a combined water and sewer utility which is a consolidated business unit for Mecklenburg County and the City of Charlotte. The department is run as an official City of Charlotte department. The service area corresponds roughly to the boundaries of Mecklenburg County.

The wastewater portion of the utility has five separate treatment plants. Three of the plants are activated sludge facilities. The largest plant is a biological phosphorous removal facility. The fifth plant is a five-stage Bardenflo biological nutrient facility. All five plants include tertiary filtration. The system does have regulatory limits in place on nutrient loads, which can be discharged in order to protect water quality. In addition to the treatment of wastewater, the system handles biosolids, most of which are applied to land (unless non-conforming) and then are taken to the landfill.

The system had a total of three regulatory violations connected to treatment issues and ninety-four regulatory violations connected to the collection portion of the system during the year.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	969,031
Service Land Area (Square Miles)	546
Persons per Square Mile	1,775
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Staff Positions	
Treatment Plant	108.50
Line Crews	140.25
Billing/Collection	5.00
Other	133.25
Number of Treatment Plants	5
Total Treatment Capacity	123.0 MGD
Average Daily Flow	78.9 MGD
River Basin into Which System Discharges	Cabarrus and Yadkin
Miles of Gravity Main Line Pipe	4,036
Miles of Forced Main Line Pipe	134
Average Age of Main Line Pipe	26 years
Blocks in Sewer Mains	188
Number of System Breaks	336
Sanitary System Overflows	260
Number of Customer Accounts	238,854
Total Revenues Collected	$183,423,616

Full Cost Profile

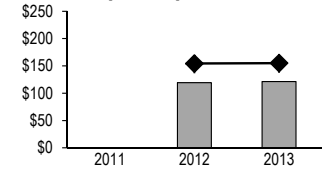
Cost Breakdown by Percentage	
Personal Services	15.0%
Operating Costs	36.0%
Capital Costs	49.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,633,300
Operating Costs	$42,293,394
Capital Costs	$57,639,533
TOTAL	$117,566,227

Charlotte Wastewater Services

Key: Charlotte ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

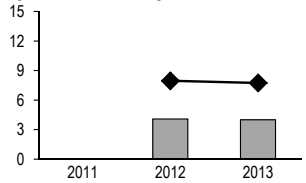
Resource Measures

Wastewater Services Cost per Capita



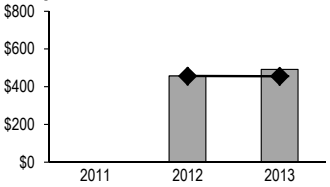
	2012	2013
Charlotte	$119	$121
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
Charlotte	4.1	4.0
Average	8.0	7.7

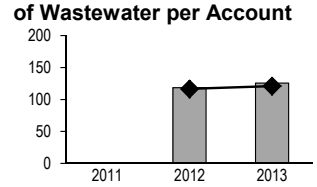
Waterwaste Services Cost per Customer Account



	2012	2013
Charlotte	$457	$492
Average	$457	$456

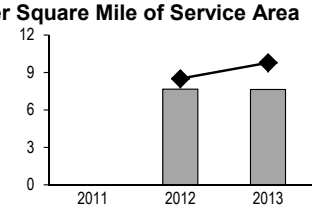
Workload Measures

Thousands of Gallons of Wastewater per Account



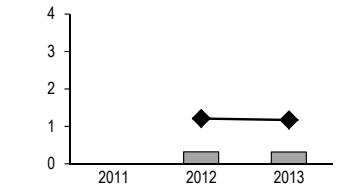
	2012	2013
Charlotte	118.5	125.7
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013
Charlotte	7.7	7.6
Average	8.5	9.8

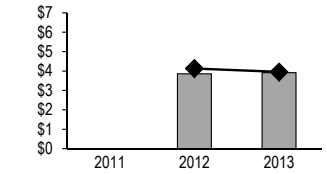
Number of Lift Stations per 1,000 Accounts



	2012	2013
Charlotte	0.32	0.31
Average	1.21	1.17

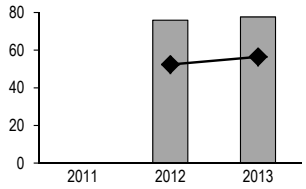
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



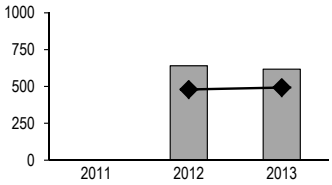
	2012	2013
Charlotte	$3.86	$3.91
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
Charlotte	75.9	77.6
Average	52.4	56.5

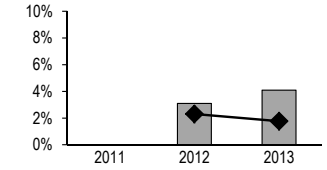
Customer Accounts per Wastewater Services FTE



	2012	2013
Charlotte	640	617
Average	479	493

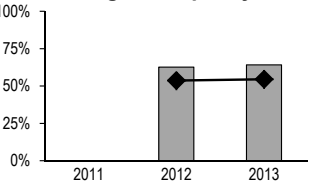
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



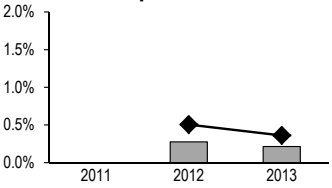
	2012	2013
Charlotte	3.09%	4.09%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



	2012	2013
Charlotte	62.7%	64.1%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced

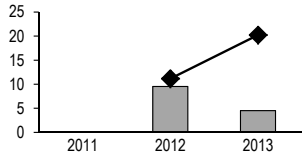


	2012	2013
Charlotte	0.28%	0.21%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe

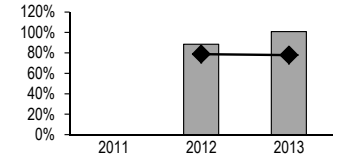
	2012	2013
Charlotte	6.72	6.24
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
Charlotte	9.52	4.51
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
Charlotte	89%	101%
Average	79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Concord has a Wastewater Department that focuses on the inspection, maintenance, and repair of the wastewater collection system. Concord does not have its own treatment plant. Instead, treatment is handled by the Water and Sewer Authority of Cabarrus County, a regional sytem. All treatment and disposal of wastewater and biosolids is handled by the regional authority using two treatment plants.

The Concord wastewater collection system had no regulatory violations during the fiscal year.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	82,139
Service Land Area (Square Miles)	110
Persons per Square Mile	747
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Staff Positions	
Treatment Plant	0.0
Line Crews	26.0
Billing/Collection	8.0
Other	5.0
Number of Treatment Plants	0
Total Treatment Capacity	NA
Average Daily Flow	8.0 MGD
River Basin into Which System Discharges	Yadkin-Pee Dee
Miles of Gravity Main Line Pipe	530
Miles of Forced Main Line Pipe	13
Average Age of Main Line Pipe	36 years
Blocks in Sewer Mains	9
Number of System Breaks	210
Sanitary System Overflows	7
Number of Customer Accounts	31,867
Total Revenues Collected	$15,620,229

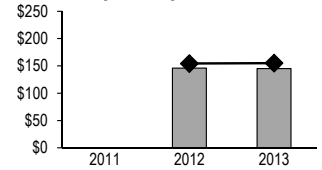
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	17.3%
Operating Costs	60.6%
Capital Costs	22.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,062,482
Operating Costs	$7,227,377
Capital Costs	$2,628,322
TOTAL	$11,918,181

Key: Concord ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

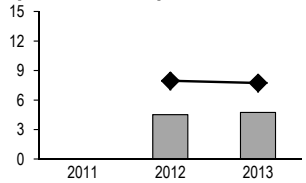
Resource Measures

Wastewater Services Cost per Capita



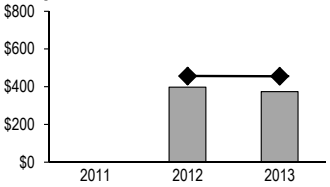
	2011	2012	2013
Concord		$146	$145
Average		$154	$155

Waterwater Services FTEs per 10,000 Population



	2011	2012	2013
Concord		4.5	4.7
Average		8.0	7.7

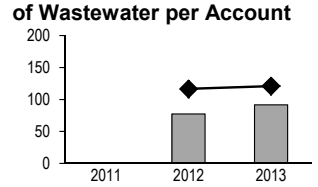
Waterwaste Services Cost per Customer Account



	2011	2012	2013
Concord		$397	$374
Average		$457	$456

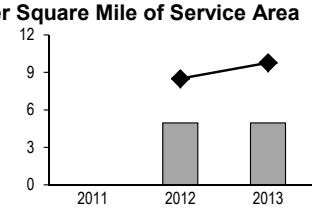
Workload Measures

Thousands of Gallons of Wastewater per Account



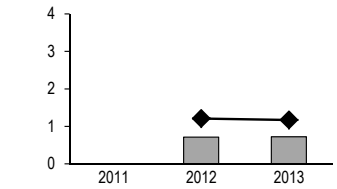
	2011	2012	2013
Concord		77.4	91.8
Average		116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2011	2012	2013
Concord		5.0	5.0
Average		8.5	9.8

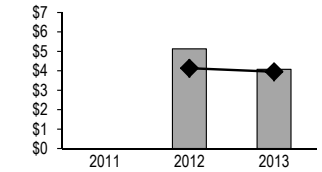
Number of Lift Stations per 1,000 Accounts



	2011	2012	2013
Concord		0.71	0.72
Average		1.21	1.17

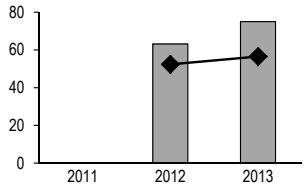
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



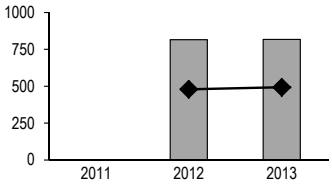
	2011	2012	2013
Concord		$5.13	$4.08
Average		$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2011	2012	2013
Concord		63.2	75.0
Average		52.4	56.5

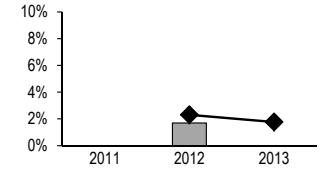
Customer Accounts per Wastewater Services FTE



	2011	2012	2013
Concord		816	817
Average		479	493

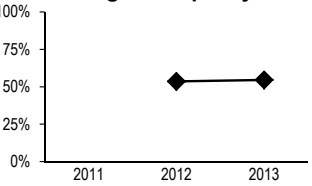
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



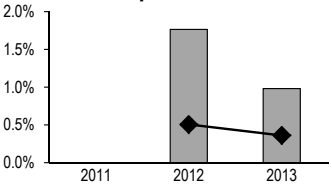
	2011	2012	2013
Concord		1.69%	
Average		2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



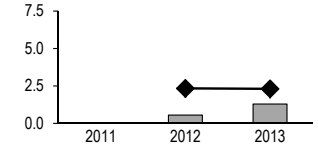
	2011	2012	2013
Concord			
Average		53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



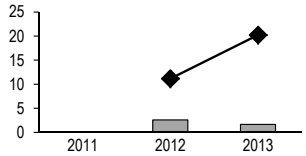
	2011	2012	2013
Concord		1.76%	0.98%
Average		0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



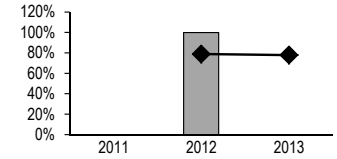
	2011	2012	2013
Concord		0.55	1.29
Average		2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2011	2012	2013
Concord		2.58	1.66
Average		11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2011	2012	2013
Concord		100%	
Average		79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater treatment in Durham is handled by the Department of Water Management, which also handles drinking water as a combined public utility. Services are provided within the city and for some areas outside the city boundaries. Durham sits on a ridgeline which divides the wastewater collection into two drainage areas discharging into two separate river basins, the Cape Fear and the Neuse river basins.

Wastewater treatment in Durham is done by activated sludge treatment and nutrient removal process. The system has nutrient regulatory limits in place that restrict what can be discharged in order to protect water quality. All biosolids produced by the two Durham treatment plants are disposed of with an approved land application program.

During the fiscal year, the system had no reported regulatory violations for the treatment or collection portions of the system.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Durham did not participate in the benchmarking project during FY 2011–12, accounting for the missing data in the first year in the graphs shown on the adjacent page.

Municipal Profile

Estimated Service Population	243,118
Service Land Area (Square Miles)	144
Persons per Square Mile	1,688
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$58,976

Service Profile

FTE Staff Positions	
Treatment Plant	29.0
Line Crews	82.0
Billing/Collection	12.0
Other	40.0
Number of Treatment Plants	2
Total Treatment Capacity	40.0 MGD
Average Daily Flow	17.6 MGD
River Basin into Which System Discharges	Cape Fear and Neuse
Miles of Gravity Main Line Pipe	122
Miles of Forced Main Line Pipe	73
Average Age of Main Line Pipe	NA
Blocks in Sewer Mains	129
Number of System Breaks	304
Sanitary System Overflows	28
Number of Customer Accounts	77,096
Total Revenues Collected	$35,326,788

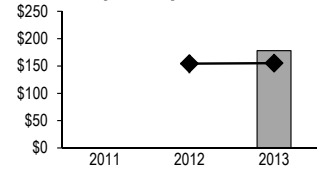
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	28.8%
Operating Costs	29.0%
Capital Costs	42.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$12,450,294
Operating Costs	$12,553,693
Capital Costs	$18,265,860
TOTAL	$43,269,847

Key: Durham ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

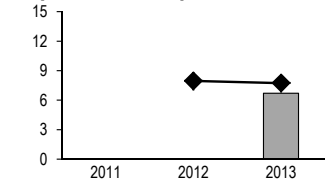
Resource Measures

Wastewater Services Cost per Capita



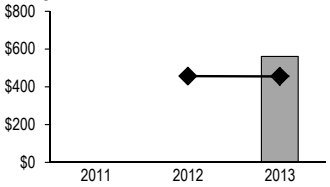
	2011	2012	2013
Durham			$178
Average		$154	$155

Waterwater Services FTEs per 10,000 Population



	2011	2012	2013
Durham			6.7
Average		8.0	7.7

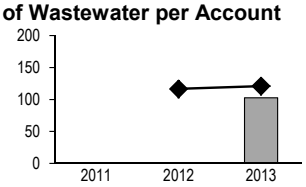
Waterwaste Services Cost per Customer Account



	2011	2012	2013
Durham			$561
Average		$457	$456

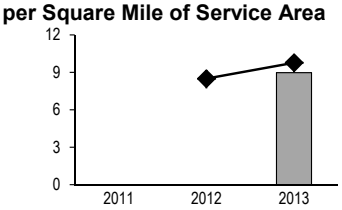
Workload Measures

Thousands of Gallons of Wastewater per Account



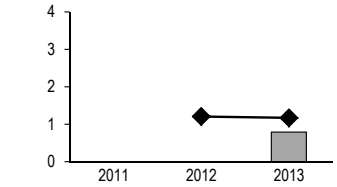
	2011	2012	2013
Durham			102.7
Average		116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2011	2012	2013
Durham			9.0
Average		8.5	9.8

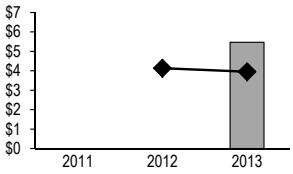
Number of Lift Stations per 1,000 Accounts



	2011	2012	2013
Durham			0.79
Average		1.21	1.17

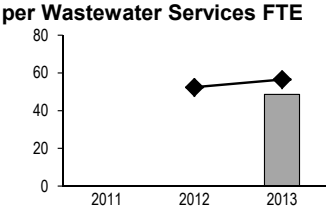
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



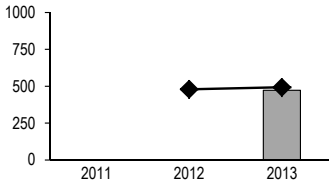
	2011	2012	2013
Durham			$5.46
Average		$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2011	2012	2013
Durham			48.6
Average		52.4	56.5

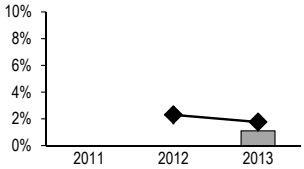
Customer Accounts per Wastewater Services FTE



	2011	2012	2013
Durham			473
Average		479	493

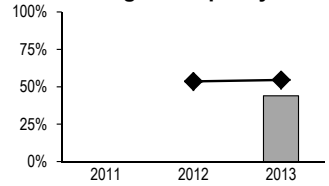
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



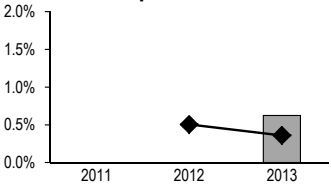
	2011	2012	2013
Durham			1.11%
Average		2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



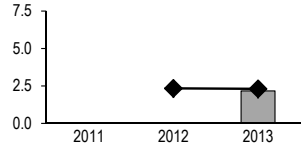
	2011	2012	2013
Durham			44.0%
Average		53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



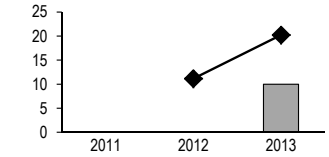
	2011	2012	2013
Durham			0.62%
Average		0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



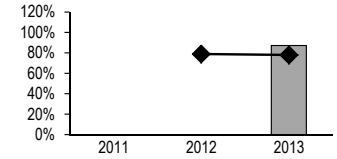
	2011	2012	2013
Durham			2.16
Average		2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2011	2012	2013
Durham			9.97
Average		11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2011	2012	2013
Durham			87%
Average		79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater treatment in Greensboro is handled by the Water Reclamation Division. This is part of the Water Resources Department, which also includes stormwater and drinking water services. The Director of Water Resources reports to the city manager. Services are provided to most of the City of Greensboro and to some addresses outside city limits within Guilford County.

Wastewater treatment in Greensboro is handled by two treatment plants. These plants used advanced tertiary treatment. The system has nutrient regulatory limits in place that restrict what can be discharged in order to protect water quality. All biosolids produced by the Greensboro treatment plants are incinerated.

During the fiscal year, the system had three regulatory violation connected to the treatment portion of the system and four violations connected to the collection portion of the system.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	215,700
Service Land Area (Square Miles)	148
Persons per Square Mile	1,457
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Staff Positions	
Treatment Plant	55.0
Line Crews	84.4
Billing/Collection	9.0
Other	12.5
Number of Treatment Plants	2
Total Treatment Capacity	56.0 MGD
Average Daily Flow	26.3 MGD
River Basin into Which System Discharges	Cape Fear
Miles of Gravity Main Line Pipe	1,408
Miles of Forced Main Line Pipe	70
Average Age of Main Line Pipe	44 years
Blocks in Sewer Mains	758
Number of System Breaks	2
Sanitary System Overflows	4
Number of Customer Accounts	99,657
Total Revenues Collected	$47,333,610

Full Cost Profile

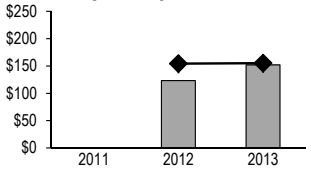
Cost Breakdown by Percentage	
Personal Services	19.7%
Operating Costs	54.0%
Capital Costs	26.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,466,240
Operating Costs	$17,700,841
Capital Costs	$8,622,675
TOTAL	$32,789,756

Greensboro Wastewater Services

Key: Greensboro ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

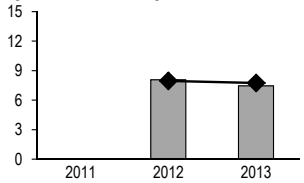
Resource Measures

Wastewater Services Cost per Capita



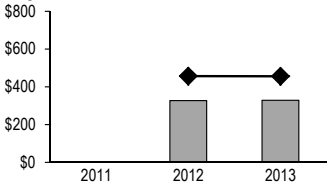
	2012	2013
Greensboro	$123	$152
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
Greensboro	8.1	7.5
Average	8.0	7.7

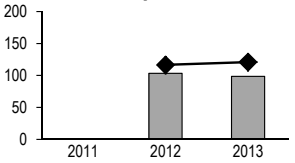
Waterwaste Services Cost per Customer Account



	2012	2013
Greensboro	$327	$329
Average	$457	$456

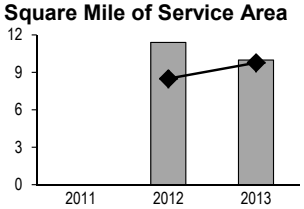
Workload Measures

Thousands of Gallons of Wastewater per Account



	2012	2013
Greensboro	103.5	98.6
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



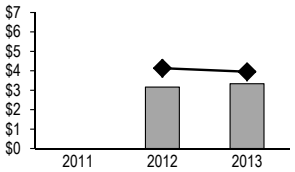
	2012	2013
Greensboro	11.4	10.0
Average	8.5	9.8

Number of Lift Stations per 1,000 Accounts

	2012	2013
Greensboro	0.47	0.48
Average	1.21	1.17

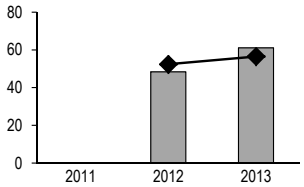
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



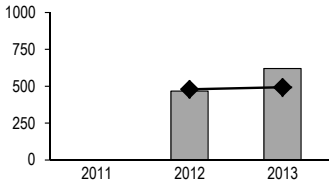
	2012	2013
Greensboro	$3.16	$3.34
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
Greensboro	48.3	61.1
Average	52.4	56.5

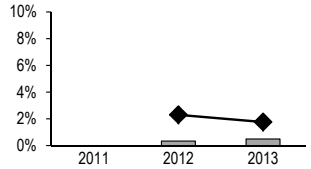
Customer Accounts per Wastewater Services FTE



	2012	2013
Greensboro	467	619
Average	479	493

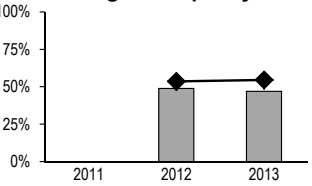
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



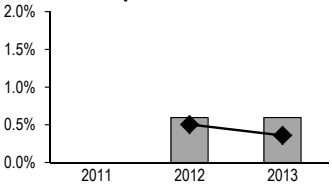
	2012	2013
Greensboro	0.34%	0.50%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



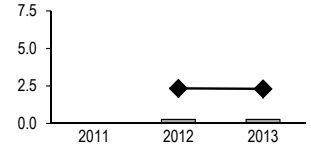
	2012	2013
Greensboro	48.9%	47.0%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



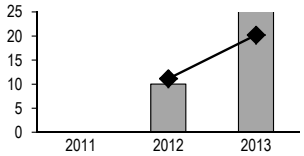
	2012	2013
Greensboro	0.60%	0.60%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



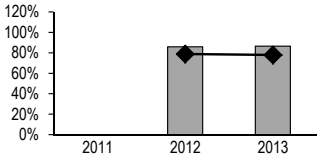
	2012	2013
Greensboro	0.27	0.27
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
Greensboro	10.02	51.28
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
Greensboro	86%	86%
Average	79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
Wastewater is handled by the City of Hickory's Collection Division, which is part of Public Utilities under the Public Services Department. The service area covers the City of Hickory and several adjoining areas in Catawba County.

The system relies on three treatment plants to handle wastewater. One plant uses activated sludge biological nutrient removal (BNR), the second uses oxidation ditch activated sludge BNR, and the third uses conventional activated sludge. The entire system does not have nutrient limits in place at this time. Biosolids generated are handled as Class A compost.

The system in Hickory had a total of five regulatory violations connected to the treatment portion of the system and five violations connected to the collection portion of the system during the fiscal year.

Conditions Affecting Service, Performance, and Costs
Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	37,478
Service Land Area (Square Miles)	51.2
Persons per Square Mile	732
Topography	Gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$54,093

Service Profile

FTE Staff Positions	
Treatment Plant	29.0
Line Crews	12.0
Billing/Collection	2.5
Other	2.5
Number of Treatment Plants	3
Total Treatment Capacity	15.2 MGD
Average Daily Flow	5.5 MGD
River Basin into Which System Discharges	Catawba
Miles of Gravity Main Line Pipe	480
Miles of Forced Main Line Pipe	20
Average Age of Main Line Pipe	41 years
Blocks in Sewer Mains	122
Number of System Breaks	12
Sanitary System Overflows	5
Number of Customer Accounts	14,871
Total Revenues Collected	$8,787,941

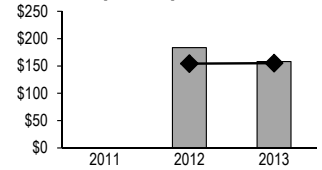
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	35.7%
Operating Costs	39.7%
Capital Costs	24.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,115,172
Operating Costs	$2,352,336
Capital Costs	$1,459,101
TOTAL	$5,926,609

Key: Hickory ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

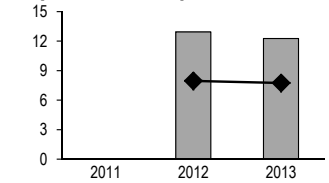
Resource Measures

Wastewater Services Cost per Capita



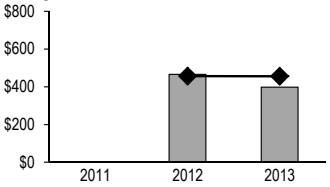
	2012	2013
Hickory	$184	$158
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
Hickory	12.9	12.3
Average	8.0	7.7

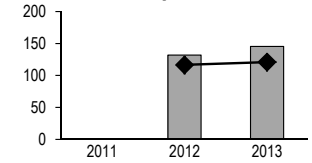
Waterwaste Services Cost per Customer Account



	2012	2013
Hickory	$466	$399
Average	$457	$456

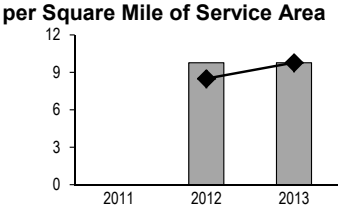
Workload Measures

Thousands of Gallons of Wastewater per Account



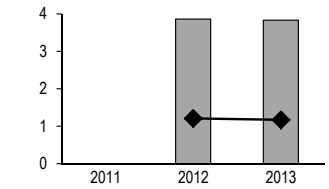
	2012	2013
Hickory	131.9	145.3
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013
Hickory	9.8	9.8
Average	8.5	9.8

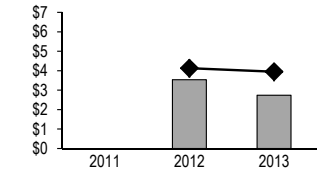
Number of Lift Stations per 1,000 Accounts



	2012	2013
Hickory	3.86	3.83
Average	1.21	1.17

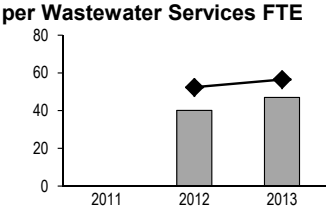
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



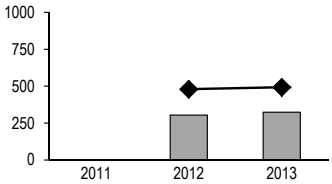
	2012	2013
Hickory	$3.54	$2.74
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
Hickory	40.1	47.0
Average	52.4	56.5

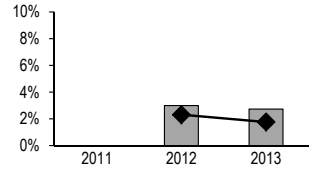
Customer Accounts per Wastewater Services FTE



	2012	2013
Hickory	304	323
Average	479	493

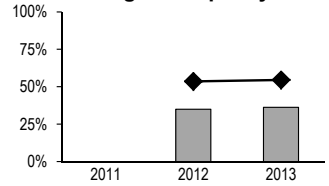
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



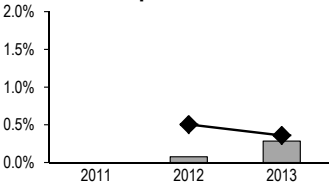
	2012	2013
Hickory	3.00%	2.73%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



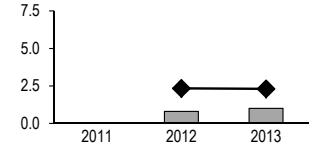
	2012	2013
Hickory	35.0%	36.2%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



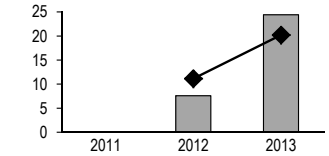
	2012	2013
Hickory	0.08%	0.28%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



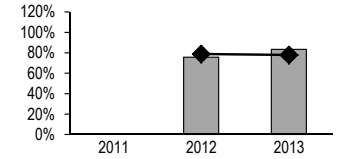
	2012	2013
Hickory	0.80	1.00
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
Hickory	7.60	24.40
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
Hickory	76%	83%
Average	79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of High Point wastewater system is part of a combined Water/Sewer Division under the Public Services Department. The system covers the City of High Point and several adjoining areas in Guilford and Davidson counties.

Wastewater is treated at two treatment plants. One plant uses biological nutrient removal, while the second plant uses extended aeration with chemical phosphorous removal. The system has regulatory nutrient limits in place that are designed to protect water quality in local waters. Biosolids left over after treatment are primarily handled by incineration, with landfill disposal as a backup.

During the fiscal year, the sytem had eight regulatory violations connected to the treatment portion of the system and sixteen violations connected to the collection portion of the system.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer service as captured here do not include debt services but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	108,000
Service Land Area (Square Miles)	64
Persons per Square Mile	1,688
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Staff Positions	
Treatment Plant	32.0
Line Crews	28.0
Billing/Collection	6.0
Other	32.5
Number of Treatment Plants	2
Total Treatment Capacity	32.2 MGD
Average Daily Flow	17.1 MGD
River Basin into Which System Discharges	Yadkin-Pee Dee and Cape Fear
Miles of Gravity Main Line Pipe	654
Miles of Forced Main Line Pipe	16
Average Age of Main Line Pipe	35 years
Blocks in Sewer Mains	126
Number of System Breaks	35
Sanitary System Overflows	16
Number of Customer Accounts	38,657
Total Revenues Collected	$28,466,689

Full Cost Profile

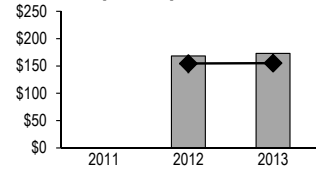
Cost Breakdown by Percentage	
Personal Services	30.0%
Operating Costs	36.1%
Capital Costs	33.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,612,151
Operating Costs	$6,749,136
Capital Costs	$6,338,844
TOTAL	$18,700,131

High Point — Wastewater Services

Key: High Point ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

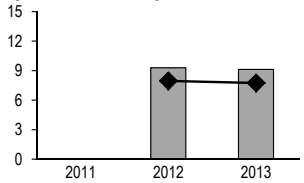
Resource Measures

Wastewater Services Cost per Capita



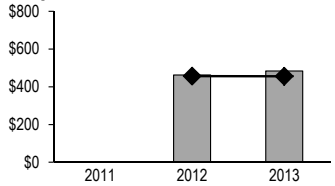
	2012	2013
High Point	$168	$173
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
High Point	9.3	9.1
Average	8.0	7.7

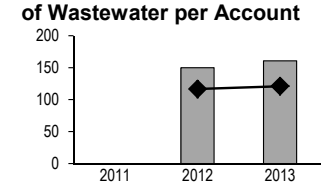
Waterwaste Services Cost per Customer Account



	2012	2013
High Point	$462	$484
Average	$457	$456

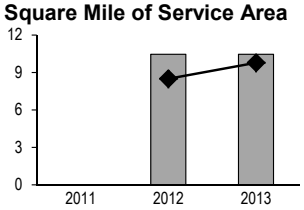
Workload Measures

Thousands of Gallons of Wastewater per Account



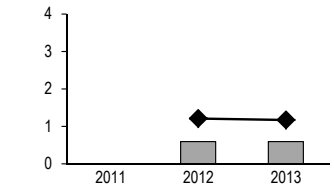
	2012	2013
High Point	150.0	160.8
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013
High Point	10.5	10.5
Average	8.5	9.8

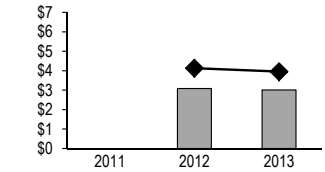
Number of Lift Stations per 1,000 Accounts



	2012	2013
High Point	0.60	0.59
Average	1.21	1.17

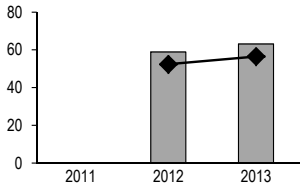
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



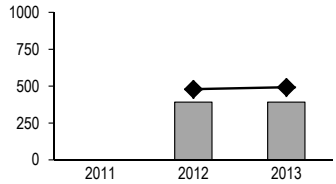
	2012	2013
High Point	$3.08	$3.01
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
High Point	58.8	63.1
Average	52.4	56.5

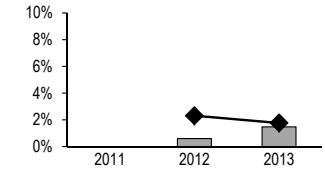
Customer Accounts per Wastewater Services FTE



	2012	2013
High Point	392	392
Average	479	493

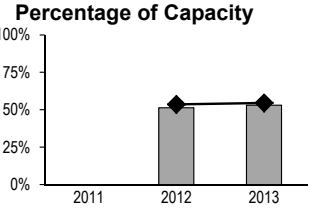
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



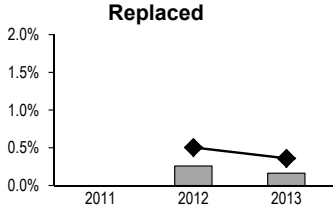
	2012	2013
High Point	0.60%	1.48%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



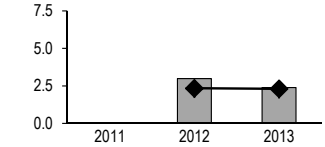
	2012	2013
High Point	51.3%	53.0%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



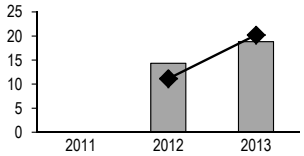
	2012	2013
High Point	0.26%	0.16%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



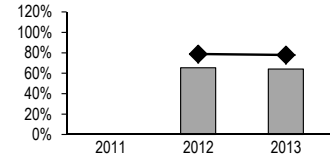
	2012	2013
High Point	2.99	2.39
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
High Point	14.35	18.81
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
High Point	65%	64%
Average	79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Salisbury provides water and sewer service through a combined enterprise fund department known as the Salisbury-Rowan Utilities. The system covers Salisbury and much of Rowan County as well.

Wastewater is treated at two plants. Both plants use biological activated sludge process for treatment. The treatment process includes mechanical bar screens, grit removal chambers, primary and secondary clarifiers, aeration basins, and liquid chlorine disinfection. The system does not currently have nutrient regulatory limits. Biosolids produced as a result of treatment are applied to farmland in Rowan County.

The system had three regulatory violations during the year for issues related to treatment and no violations connected to collections.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	51,900
Service Land Area (Square Miles)	45.3
Persons per Square Mile	1,146
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Staff Positions	
Treatment Plant	19.0
Line Crews	16.5
Billing/Collection	5.0
Other	14.5
Number of Treatment Plants	2
Total Treatment Capacity	12.5 MGD
Average Daily Flow	7.1 MGD
River Basin into Which System Discharges	Yadkin
Miles of Gravity Main Line Pipe	395
Miles of Forced Main Line Pipe	29
Average Age of Main Line Pipe	41 years
Blocks in Sewer Mains	31
Number of System Breaks	7
Sanitary System Overflows	6
Number of Customer Accounts	16,203
Total Revenues Collected	$11,565,499

Full Cost Profile

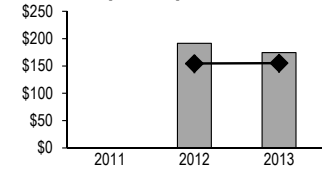
Cost Breakdown by Percentage	
Personal Services	30.5%
Operating Costs	41.4%
Capital Costs	28.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,767,064
Operating Costs	$3,752,078
Capital Costs	$2,539,719
TOTAL	$9,058,861

Salisbury — Wastewater Services

Key: Salisbury ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

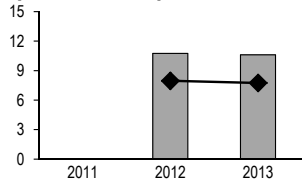
Resource Measures

Wastewater Services Cost per Capita



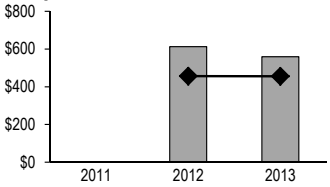
	2012	2013
Salisbury	$191	$175
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
Salisbury	10.8	10.6
Average	8.0	7.7

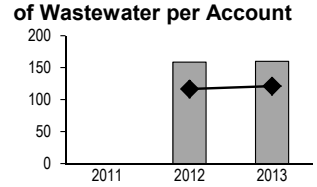
Waterwaste Services Cost per Customer Account



	2012	2013
Salisbury	$613	$559
Average	$457	$456

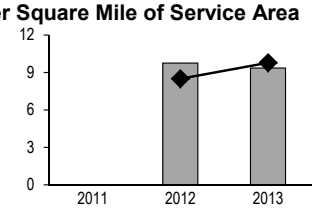
Workload Measures

Thousands of Gallons of Wastewater per Account



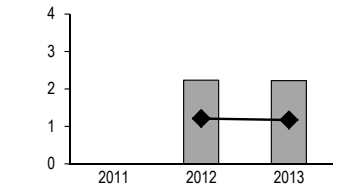
	2012	2013
Salisbury	158.5	160.0
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013
Salisbury	9.8	9.4
Average	8.5	9.8

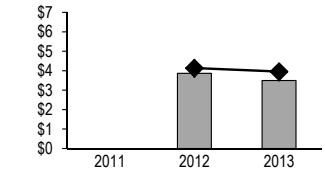
Number of Lift Stations per 1,000 Accounts



	2012	2013
Salisbury	2.23	2.22
Average	1.21	1.17

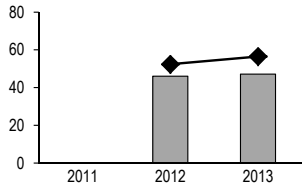
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



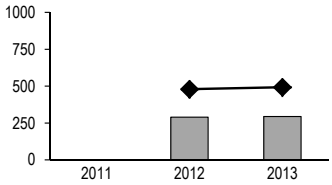
	2012	2013
Salisbury	$3.86	$3.49
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
Salisbury	46.0	47.1
Average	52.4	56.5

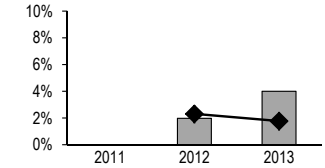
Customer Accounts per Wastewater Services FTE



	2012	2013
Salisbury	290	295
Average	479	493

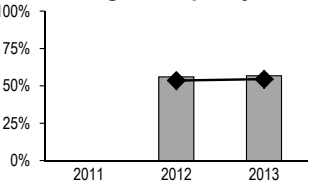
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



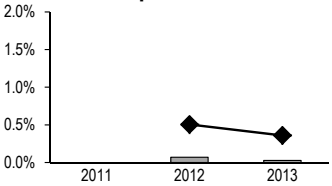
	2012	2013
Salisbury	1.97%	4.00%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



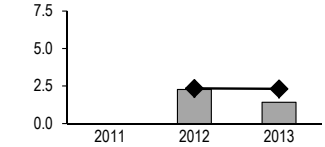
	2012	2013
Salisbury	56.0%	56.8%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



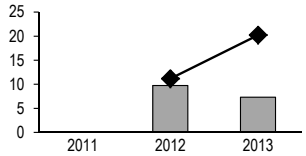
	2012	2013
Salisbury	0.07%	0.03%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



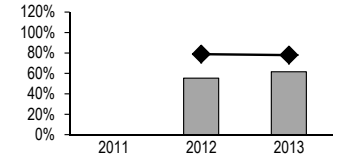
	2012	2013
Salisbury	2.27	1.41
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
Salisbury	9.75	7.31
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
Salisbury	55%	62%
Average	79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

Wastewater is handled by the Water Reclamation and Wastewater Collection Division, which is part of Water Resources in the Public Services Department. Billing for large customers is handled by the Water Resources, but residential customer billing is handled by the Customer Services Division in the Finance Department. The system covers the City of Wilson and several small adjoining areas outside the city in Wilson County.

Waterwater treatment is handled by one plant. The treatment plant uses advanced five-stage biological nutrient removal with deep-bed filters with methanol and biological and chemical phosphorous reduction. The system had very stringent nutrient limits in place to protect water quality on the Neuse River basin. The system produced Class A and B biosolids, with most of this solid waste being composted. A small portion is applied on city land or other permitted farmland.

The system had three reported regulatory violations for the treatment portion of the system and no violations for the collection portion of the system during the fiscal year.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services as captured here do not include debt service but do capture depreciation of capital.

Large capital improvements are being made to the Buckhorn Lake Dam and Wastewater Projects, which have been required to meet advanced nutrient removal standards.

Municipal Profile

Estimated Service Population	53,100
Service Land Area (Square Miles)	34
Persons per Square Mile	1,562
Topography	Flat
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Staff Positions	
Treatment Plant	31.0
Line Crews	31.0
Billing/Collection	2.0
Other	1.0
Number of Treatment Plants	1
Total Treatment Capacity	14.0 MGD
Average Daily Flow	8.3 MGD
River Basin into Which System Discharges	Neuse
Miles of Gravity Main Line Pipe	349
Miles of Forced Main Line Pipe	5
Average Age of Main Line Pipe	40 years
Blocks in Sewer Mains	812
Number of System Breaks	37
Sanitary System Overflows	6
Number of Customer Accounts	20,219
Total Revenues Collected	$10,689,578

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	34.8%
Operating Costs	40.9%
Capital Costs	24.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,693,710
Operating Costs	$4,335,102
Capital Costs	$2,574,613
TOTAL	$10,603,425

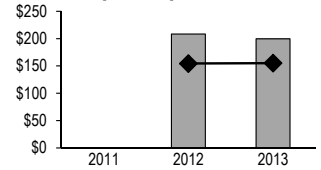
Wilson

Wastewater Services

Key: Wilson ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

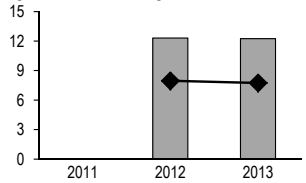
Resource Measures

Wastewater Services Cost per Capita



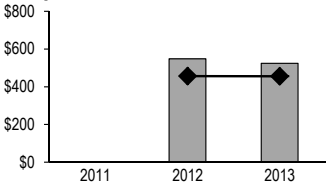
	2011	2012	2013
Wilson		$208	$200
Average		$154	$155

Waterwater Services FTEs per 10,000 Population



	2011	2012	2013
Wilson		12.3	12.2
Average		8.0	7.7

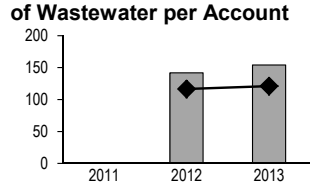
Waterwaste Services Cost per Customer Account



	2011	2012	2013
Wilson		$548	$524
Average		$457	$456

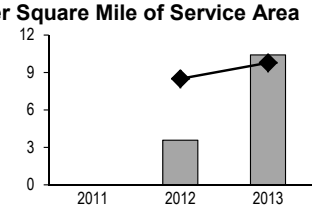
Workload Measures

Thousands of Gallons of Wastewater per Account



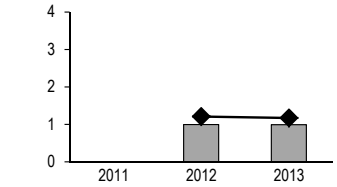
	2011	2012	2013
Wilson		141.8	154.2
Average		116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2011	2012	2013
Wilson		3.6	10.4
Average		8.5	9.8

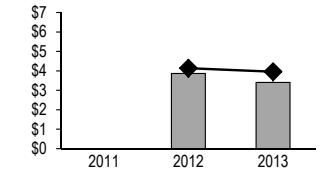
Number of Lift Stations per 1,000 Accounts



	2011	2012	2013
Wilson		1.00	0.99
Average		1.21	1.17

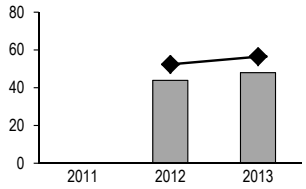
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



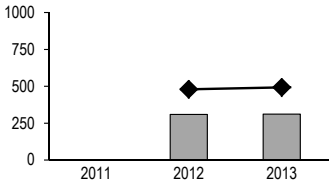
	2011	2012	2013
Wilson		$3.86	$3.40
Average		$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2011	2012	2013
Wilson		43.9	48.0
Average		52.4	56.5

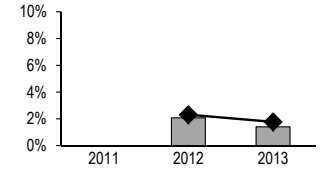
Customer Accounts per Wastewater Services FTE



	2011	2012	2013
Wilson		309	311
Average		479	493

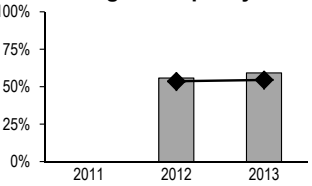
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



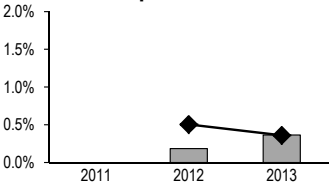
	2011	2012	2013
Wilson		2.07%	1.40%
Average		2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



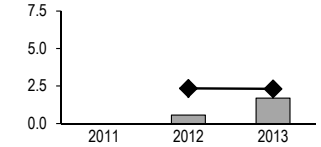
	2011	2012	2013
Wilson		55.8%	59.1%
Average		53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



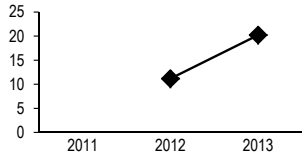
	2011	2012	2013
Wilson		0.18%	0.36%
Average		0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



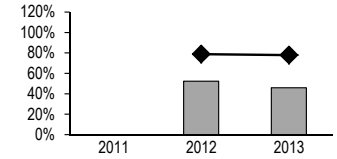
	2011	2012	2013
Wilson		0.56	1.69
Average		2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2011	2012	2013
Wilson			
Average		11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2011	2012	2013
Wilson		52%	46%
Average		79%	78%

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Winston-Salem and Forsyth County Utilities Division operates a combined water and sewer system that covers the city and most of the remaining population of Forsyth County. The system also serves several adjoining areas in Davie and Davidson counties. Beyond water and wastewater, the Utilities Division also handles solid waste disposal. Operations are divided among several divisions by function.

The system has two separate treatment plants. The plants use conventional activated sludge with anaerobic digestion for treatment. The system currently does not have regulatory nutrient limits in place. Biosolids produced are disposed of after first using thermal drying with subsequent reuse as a soil amendment.

During the fiscal year, the system had three regulatory violations connected to the treatment portion of the system and no reported violations for the collection portion of the system.

Conditions Affecting Service, Performance, and Costs

Wastewater Services was added as a new service area for the benchmarking project beginning with FY 2011–12. The costs of wastewater or sewer services, as captured here, do not include debt service but do capture depreciation of capital.

Municipal Profile

Estimated Service Population	336,243
Service Land Area (Square Miles)	366
Persons per Square Mile	919
Topography	Gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Staff Positions	
Treatment Plant	93.0
Line Crews	62.0
Billing/Collection	10.0
Other	19.0
Number of Treatment Plants	2
Total Treatment Capacity	51.0 MGD
Average Daily Flow	31.1 MGD
River Basin into Which System Discharges	Yadkin
Miles of Gravity Main Line Pipe	1,691
Miles of Forced Main Line Pipe	33
Average Age of Main Line Pipe	40 years
Blocks in Sewer Mains	348
Number of System Breaks	121
Sanitary System Overflows	111
Number of Customer Accounts	93,684
	94406%
Total Revenues Collected	$41,386,190

Full Cost Profile

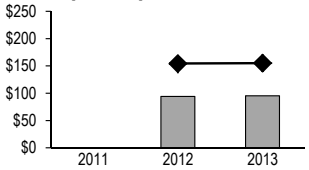
Cost Breakdown by Percentage	
Personal Services	27.3%
Operating Costs	34.8%
Capital Costs	38.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,726,126
Operating Costs	$11,131,425
Capital Costs	$12,145,885
TOTAL	$32,003,436

Winston Salem — Wastewater Services

Key: Winston Salem ■ Benchmarking Average ◆ Fiscal Years 2011 through 2013

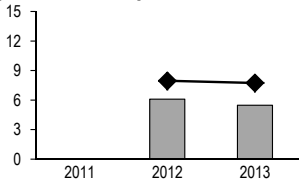
Resource Measures

Wastewater Services Cost per Capita



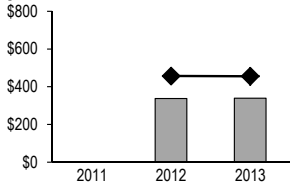
	2012	2013
Winston-Salem	$94	$95
Average	$154	$155

Waterwater Services FTEs per 10,000 Population



	2012	2013
Winston-Salem	6.1	5.5
Average	8.0	7.7

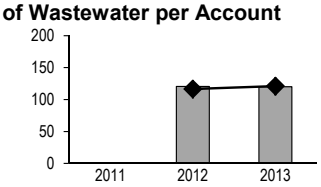
Waterwaste Services Cost per Customer Account



	2012	2013
Winston-Salem	$338	$339
Average	$457	$456

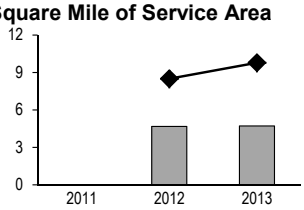
Workload Measures

Thousands of Gallons of Wastewater per Account



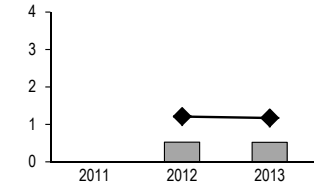
	2012	2013
Winston-Salem	120.5	120.0
Average	116.6	121.0

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013
Winston-Salem	4.7	4.7
Average	8.5	9.8

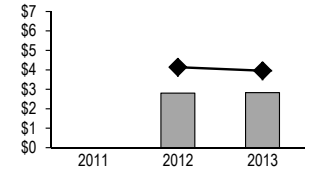
Number of Lift Stations per 1,000 Accounts



	2012	2013
Winston-Salem	0.52	0.52
Average	1.21	1.17

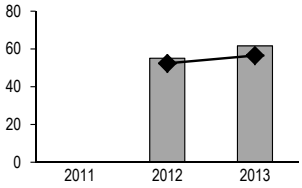
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



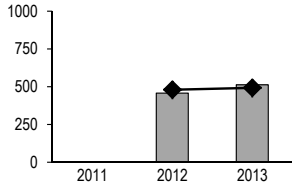
	2012	2013
Winston-Salem	$2.80	$2.82
Average	$4.13	$3.95

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013
Winston-Salem	55.1	61.6
Average	52.4	56.5

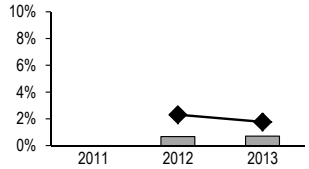
Customer Accounts per Wastewater Services FTE



	2012	2013
Winston-Salem	457	513
Average	479	493

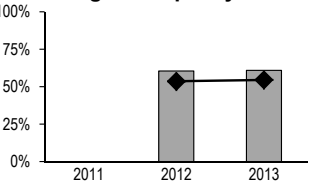
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



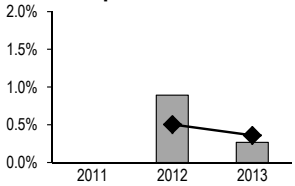
	2012	2013
Winston-Salem	0.67%	0.71%
Average	2.31%	1.77%

Average Daily Treatment as a Percentage of Capacity



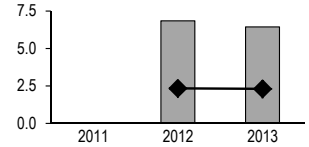
	2012	2013
Winston-Salem	60.5%	60.9%
Average	53.6%	54.5%

Percent of Main Line Rehabbed or Replaced



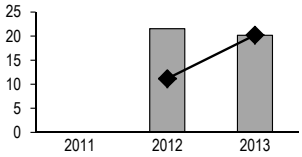
	2012	2013
Winston-Salem	0.89%	0.27%
Average	0.51%	0.36%

Overflows per 100 Miles of Main Line Pipe



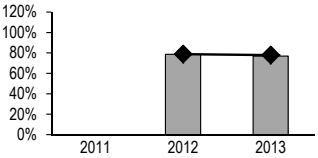
	2012	2013
Winston-Salem	6.84	6.44
Average	2.34	2.31

Backups per 100 Miles of Main Line Pipe



	2012	2013
Winston-Salem	21.53	20.19
Average	11.16	20.22

Billed Wastewater as a Percent of Treated Effluent



	2012	2013
Winston-Salem	79%	77%
Average	79%	78%

UNC
SCHOOL OF
GOVERNMENT

Performance and Cost Data

CORE PARKS AND RECREATION

UNC
SCHOOL OF
GOVERNMENT

PERFORMANCE MEASURES FOR CORE PARKS AND RECREATION SERVICES

SERVICE DEFINITION

Parks and Recreation includes both passive and active recreation opportunities maintained and operated by a local government. For the purposes of this benchmarking effort, this will include core operational functions such as parks, multi-purpose recreation facilities, athletic facilities, greenways, and trails. This also includes programs and events.

However, Parks and Recreation departments frequently may include a variety of other activities and facilities. To support reasonable comparisons, this service benchmarking excludes these secondary recreational activities, including performance venues, museums, historic sites, golf courses, marinas/boat ramps, and professional stadiums. Also excluded are other non-recreational activities sometimes performed by parks and recreation departments, such as care of cemeteries; maintenance of right-of-ways along city streets; maintenance of facilities owned by a municipality but not parks-related; and maintenance of city lots. The dollars and people associated with these secondary and non-park activities are excluded.

Parks and Recreation does offer an important difference from many of the other services provided by local governments. Much of the objective of this service area is to provide facilities for the use of citizens. Use of many of these facilities is not easily tracked. Many of the measures shown for this service area are accordingly measures of facility availability rather than the traditional workload type of measures seen in other service areas.

NOTES ON PERFORMANCE MEASURES

1. Land Acres of All Municipal Parks per 10,000 Population

This resource measure captures the amount of park land that is available relative to the population in the communities.

2. Recreation Centers per 10,000 Population

Recreation centers provide space for a variety of indoor recreational activities. This measure shows the number of centers relative to the population.

3. Swimming Pools per 10,000 Population

Indoor and outdoor pools are a desirable recreational facility. This resource measure captures the number of pools relative to the population.

4. Athletic Fields per 10,000 Population

Outdoor athletic fields are used for organized and informal recreation. This measure counts the number of formal athletic fields including rectangular fields such as for football and soccer, diamond fields as for baseball, and non-designated fields which can be used for multiple activities. The count includes both natural grass and artificial-surface fields, where available.

5. Playgrounds per 10,000 Population
Formal playgrounds include a variety of fixed equipment such as swings, jungle gyms, slides, and other apparatus. This measure captures these playgrounds relative to the population.

6. Miles of Trails per 10,000 Population
Outdoor trails of all types represent an important type of active recreation. This measure captures the total miles of trails in a community relative to the population. The miles total includes paved and unpaved trails and covers various types of trails, such as those for walking, bike riding, and equestrian riding.

7. Total Core Parks and Recreation Costs
This efficiency measure represents the level of spending relative to the park acreage in a community. Although funds may be spent on facilities and activities, this measure provides some comparison on the intensity of spending.

8. Acres of Park Maintained per Maintenance Full-Time Equivalent (FTE)
This efficiency measure compares the amount of acres in the park system relative to the number of FTEs used by a jurisdiction to provide maintenance.

9. Volunteer Hours in FTEs as a Percent of Paid Staff FTEs
Volunteers represent an important resource to help support Parks and Recreation activities. This efficiency measure compares the estimated amount of volunteer labor relative to the paid staff in order to provide a measure of the benefit these volunteers bring to a community.

10. Revenue Gained as a Percent of Total Core Parks and Recreation Costs
Parks and Recreation is a service that is primarily supported by general funding from a local government budget. But gaining additional revenues in the form of user fees, grants, donations, and sponsorships helps to leverage spending and provide services. This effectiveness measure shows how much revenue has been raised from these other sources relative to the total costs reported.

11. Acts of Vandalism per 10,000 Population
Vandalism damages parks and recreation facilities, making them unavailable or less useful to citizens. This effectiveness measure compares the number of acts of vandalism relative to the population to indicate the extent of this problem.

Core Parks and Recreation

Summary of Key Dimensions of Service

City or Town	Municipal Population as of June 2012	Core Parks and Recreation FTEs	Number of Parks	Park Land Acreage	Number of Recreation and Senior Centers	Number of Playgrounds	Number of Athletic Fields	Miles of Trails
Apex	39,768	30.0	11	443.0	1	11	26	9.4
Asheville	86,207	97.4	40	857.5	13	25	28	4.3
Burlington	51,195	64.5	22	631.5	7	21	42	14.3
Cary	142,412	318.1	29	2,518.1	6	18	60	80.1
Concord	81,461	17.5	8	363.0	3	13	22	7.1
Durham	236,566	199.0	68	1,855.0	10	57	57	40.0
Greensboro	275,048	188.0	616	6,369.0	12	104	109	85.0
Greenville	86,142	121.8	30	1,361.0	8	13	26	14.5
Hickory	40,039	53.0	25	504.0	8	39	24	10.6
High Point	106,406	134.3	50	1,919.0	7	24	51	20.5
Salisbury	33,442	37.3	28	508.0	3	18	12	16.9
Wilmington	109,689	90.8	34	459.0	3	35	22	23.6
Wilson	49,440	65.0	28	400.0	4	25	19	10.0
Winston-Salem	233,232	200.5	76	3,057.0	17	47	97	23.2

EXPLANATORY FACTORS

These are some factors that the project found affected core parks and recreation services performance and cost in one or more of the municipalities:

Youth Population
Total Acreage
Miles of Trails
Number of Facilities

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Apex provides recreation services through the separate Parks, Recreation, and Cultural Resources Department. The city has priority use agreements with the Wake County School System in exchange for maintenance of areas used by the the town.

The town has eleven separate parks and sites. These parks cover 443 land acres; nearly all of the area is currently developed. The city has nine miles of trails; about three-fourths of them are paved.

In addition to the core parks and recreational facilities, Apex has a performing arts center. The operation of this other facility is not included in the Core Parks and Recreation comparisons reported here. This facility is not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	39,768
Land Area (Square Miles)	15.63
Persons per Square Mile	2,545
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	6.0
Maintenance Staff FTEs	18.0
Program and Facility FTEs	6.0
Other Staff FTEs	0.0
TOTAL	30.0
Number of Parks and Sites	11
Total Land Acreage in Parks	443.0
Miles of Trails in Parks	9.4
Recreational Facilities	
Indoor and Outdoor Pools	0
Recreation Centers	1
Outdoor Basketball Courts	5 full, 1 half
Outdoor Tennis Courts	15
Playgrounds	11
Diamond Fields	13
Rectangular Fields	11
Other Athletic Fields	2
Picnic Shelters	13
Parks and Recreation Revenues	
User Fees	$522,962
Grants	$41,000
Sponsorships	$3,253
Donations	$0

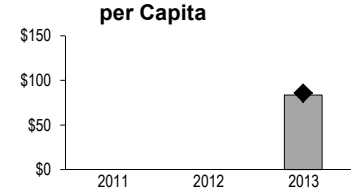
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	41.4%
Operating Costs	48.1%
Capital Costs	10.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,374,670
Operating Costs	$1,597,744
Capital Costs	$346,772
TOTAL	$3,319,186

Key: Apex ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

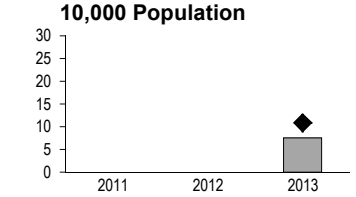
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Apex	$83
Average	$86

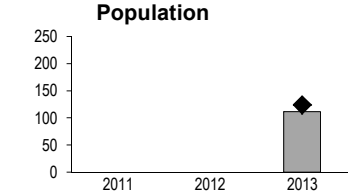
Core Parks and Recreation Staff per 10,000 Population



	2013
Apex	7.5
Average	10.9

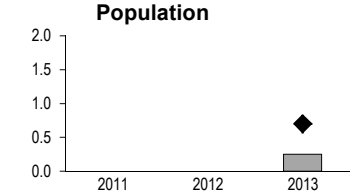
Facilities Measures

Land Acres of Parks per 10,000 Population



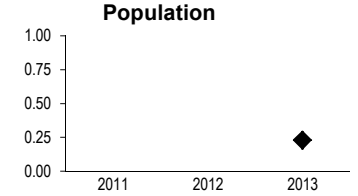
	2013
Apex	111.40
Average	123.97

Recreation Centers per 10,000 Population



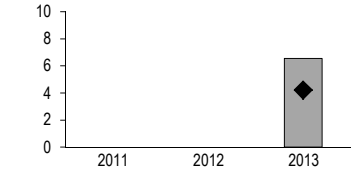
	2013
Apex	0.25
Average	0.70

Swimming Pools per 10,000 Population



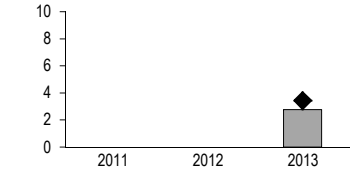
	2013
Apex	0.00
Average	0.23

Athletic Fields per 10,000 Population



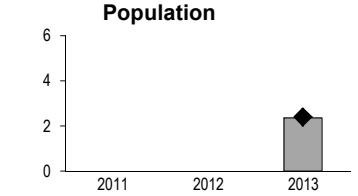
	2013
Apex	6.54
Average	4.19

Playgrounds per 10,000 Population



	2013
Apex	2.77
Average	3.43

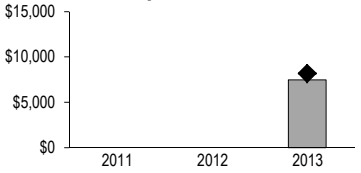
Miles of Land Trails per 10,000 Population



	2013
Apex	2.36
Average	2.39

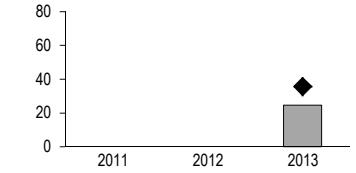
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



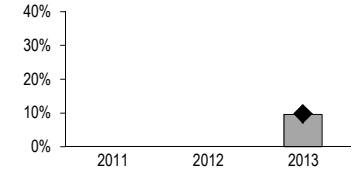
	2013
Apex	$7,493
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Apex	24.6
Average	35.7

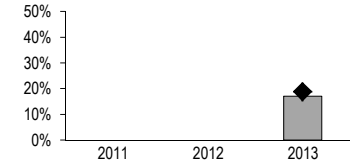
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Apex	9.6%
Average	9.8%

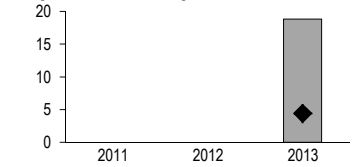
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Apex	17.1%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Apex	18.9
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Asheville provides recreation services through the separate Parks and Recreation Department. The city has formal agreements and partnerships with athletic associations, non-profits, universities, individuals, and for-profit organizations for the provision of recreational services.

The city has forty separate parks and sites. These parks cover 858 land acres; about three-fourths of them are currently developed. The city has four miles of paved trails.

In addition to the core parks and recreational facilities, Asheville has two large outdoor performance event sites and runs an eighteen-hole municipal golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	86,207
Land Area (Square Miles)	45.40
Persons per Square Mile	1,899
Topography	Hill, Mountains
Climate	Moderate; ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	10.6
Maintenance Staff FTEs	33.8
Program and Facility FTEs	48.0
Other Staff FTEs	5.0
TOTAL	97.4
Number of Parks and Sites	40
Total Land Acreage in Parks	857.5
Miles of Trails in Parks	4.3
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	11
Outdoor Basketball Courts	25
Outdoor Tennis Courts	26
Playgrounds	25
Diamond Fields	20
Rectangular Fields	5
Other Athletic Fields	3
Picnic Shelters	14
Parks and Recreation Revenues	
User Fees	$1,077,447
Grants	$664,822
Sponsorships	$122,397
Donations	$54,439

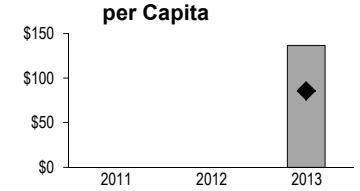
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	49.0%
Operating Costs	38.4%
Capital Costs	12.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,776,046
Operating Costs	$4,526,823
Capital Costs	$1,485,696
TOTAL	$11,788,565

Key: Asheville ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

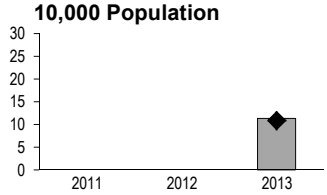
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Asheville	$137
Average	$86

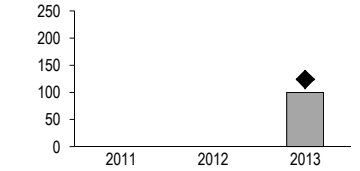
Core Parks and Recreation Staff per 10,000 Population



	2013
Asheville	11.3
Average	10.9

Facilities Measures

Land Acres of Parks per 10,000 Population



	2013
Asheville	99.47
Average	123.97

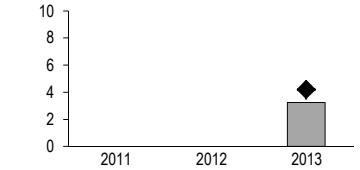
Recreation Centers per 10,000 Population

	2013
Asheville	1.28
Average	0.70

Swimming Pools per 10,000 Population

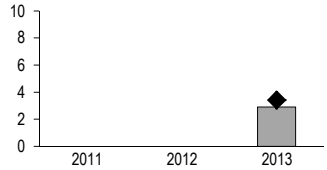
	2013
Asheville	0.35
Average	0.23

Athletic Fields per 10,000 Population



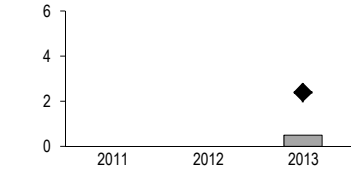
	2013
Asheville	3.25
Average	4.19

Playgrounds per 10,000 Population



	2013
Asheville	2.90
Average	3.43

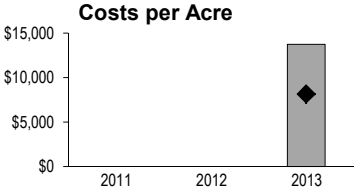
Miles of Land Trails per 10,000 Population



	2013
Asheville	0.50
Average	2.39

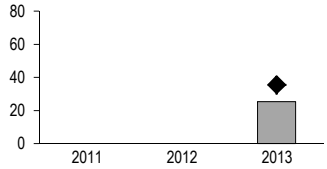
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



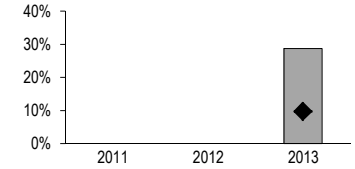
	2013
Asheville	$13,748
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Asheville	25.4
Average	35.7

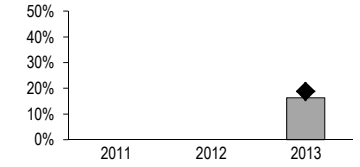
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Asheville	28.7%
Average	9.8%

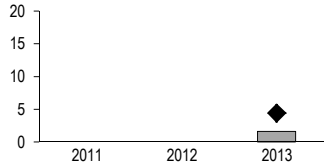
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Asheville	16.3%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Asheville	1.6
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Burlington provides recreation services through the separate Recreation and Parks Department. The city has formal agreements with Guilford County at the Guilford MacKintosh Park and Marina.

The city has twenty-two separate parks and sites. These parks cover 632 land acres; about two-thirds of them are currently developed. Additionally, a further 2,140 water acres are part of the park system. The city has fourteen miles of trails, most of them unpaved.

In addition to the core parks and recreational facilities, Burlington has two large outdoor performance event sites, two historic properties, one performing arts center, one professional sports site, one farmers' market, and four boat ramps or marinas. The city also runs an eighteen-hole municipal golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	51,195
Land Area (Square Miles)	25.21
Persons per Square Mile	2,031
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	7.5
Maintenance Staff FTEs	11.0
Program and Facility FTEs	46.0
Other Staff FTEs	0.0
TOTAL	64.5
Number of Parks and Sites	22
Total Land Acreage in Parks	631.5
Miles of Trails in Parks	14.3
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	6
Outdoor Basketball Courts	9
Outdoor Tennis Courts	17
Playgrounds	21
Diamond Fields	22
Rectangular Fields	18
Other Athletic Fields	2
Picnic Shelters	NA
Parks and Recreation Revenues	
User Fees	NA
Grants	$5,000
Sponsorships	$13,000
Donations	$4,500

Full Cost Profile

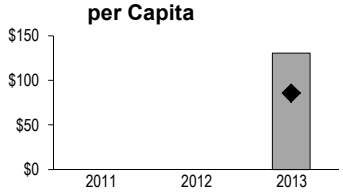
Cost Breakdown by Percentage	
Personal Services	56.6%
Operating Costs	37.1%
Capital Costs	6.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,776,114
Operating Costs	$2,474,362
Capital Costs	$425,266
TOTAL	$6,675,742

Burlington Core Parks and Recreation

Key: Burlington ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

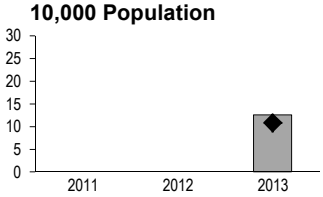
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Burlington	$130
Average	$86

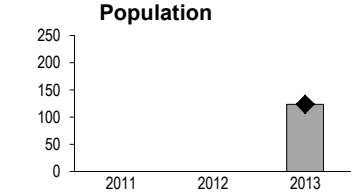
Core Parks and Recreation Staff per 10,000 Population



	2013
Burlington	12.6
Average	10.9

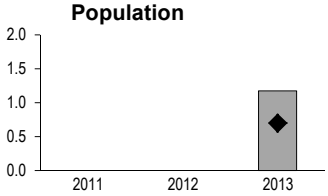
Facilities Measures

Land Acres of Parks per 10,000 Population



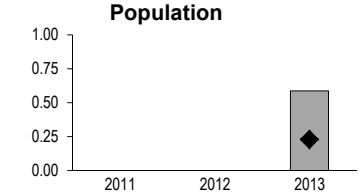
	2013
Burlington	123.35
Average	123.97

Recreation Centers per 10,000 Population



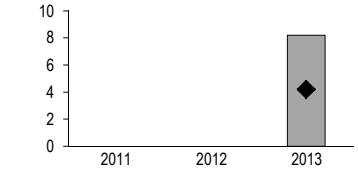
	2013
Burlington	1.17
Average	0.70

Swimming Pools per 10,000 Population



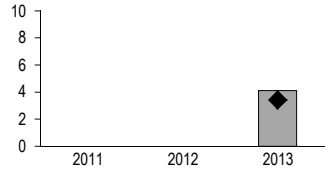
	2013
Burlington	0.59
Average	0.23

Athletic Fields per 10,000 Population



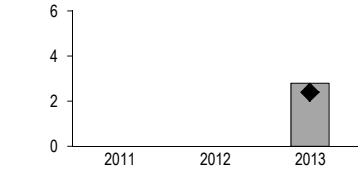
	2013
Burlington	8.20
Average	4.19

Playgrounds per 10,000 Population



	2013
Burlington	4.10
Average	3.43

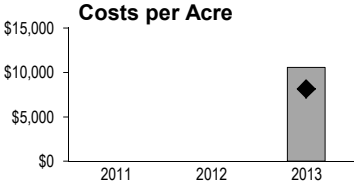
Miles of Land Trails per 10,000 Population



	2013
Burlington	2.79
Average	2.39

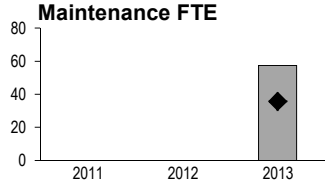
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



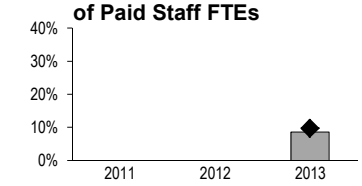
	2013
Burlington	$10,571
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Burlington	57.4
Average	35.7

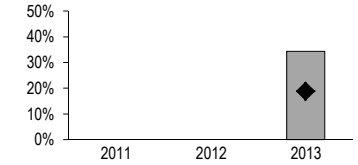
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Burlington	8.6%
Average	9.8%

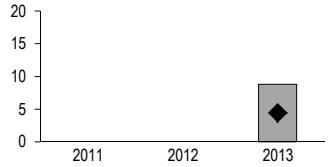
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Burlington	34.3%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Burlington	8.8
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The Town of Cary provides recreation services through the separate Parks, Recreation, and Cultural Resources Department. The town has agreements with the Wake County Public Schools for use of facilities. Additionally, as opportunities present themselves the town has some agreements with Wake County.

The city has twenty-nine separate parks and sites. These parks cover 2,518 land acres about one-fourth of it currently developed. The city has eighty miles of trails, most of it paved.

In addition to the core parks and recreational facilities, Cary has two large outdoor performance event sites, eleven historic properties, one performing arts center, two professional sports sites, one boat ramp, and one museum.
The department also has many cultural programs not reflected fully in the benchmarking data. Cary has a public arts program which includes artists in the design of town capital projects. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	142,412
Land Area (Square Miles)	54.56
Persons per Square Mile	2,610
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	69.0
Maintenance Staff FTEs	37.6
Program and Facility FTEs	190.5
Other Staff FTEs	21.0
TOTAL	318.1
Number of Parks and Sites	29
Total Land Acreage in Parks	2,518.1
Miles of Trails in Parks	80.1
Recreational Facilities	
Indoor and Outdoor Pools	0
Recreation Centers	6
Outdoor Basketball Courts	23
Outdoor Tennis Courts	59
Playgrounds	26
Diamond Fields	25
Rectangular Fields	9
Other Athletic Fields	9
Picnic Shelters	18
Parks and Recreation Revenues	
User Fees	$5,708,822
Grants	$699,436
Sponsorships	$172,500
Donations	$24,003

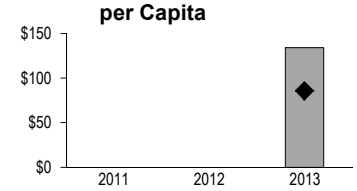
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	37.8%
Operating Costs	49.1%
Capital Costs	13.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,209,531
Operating Costs	$9,375,918
Capital Costs	$2,500,136
TOTAL	$19,085,585

Key: Cary ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

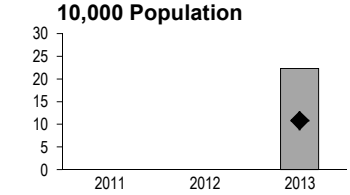
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Cary	$134
Average	$86

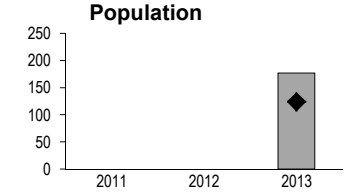
Core Parks and Recreation Staff per 10,000 Population



	2013
Cary	22.3
Average	10.9

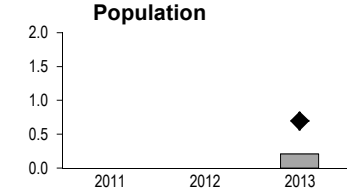
Facilities Measures

Land Acres of Parks per 10,000 Population



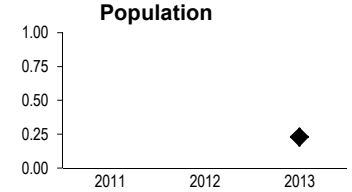
	2013
Cary	176.82
Average	123.97

Recreation Centers per 10,000 Population



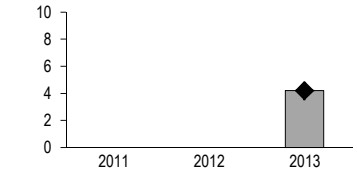
	2013
Cary	0.21
Average	0.70

Swimming Pools per 10,000 Population



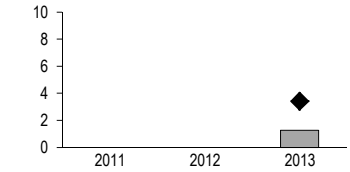
	2013
Cary	0.00
Average	0.23

Athletic Fields per 10,000 Population



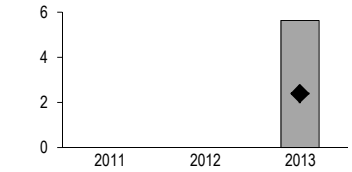
	2013
Cary	4.21
Average	4.19

Playgrounds per 10,000 Population



	2013
Cary	1.26
Average	3.43

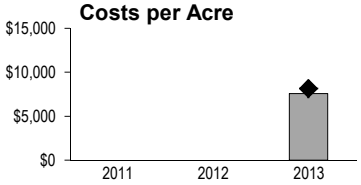
Miles of Land Trails per 10,000 Population



	2013
Cary	5.62
Average	2.39

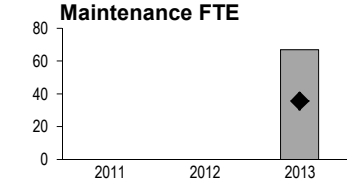
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



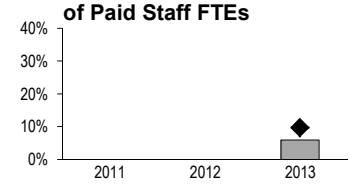
	2013
Cary	$7,579
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Cary	67.0
Average	35.7

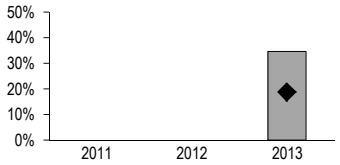
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Cary	5.9%
Average	9.8%

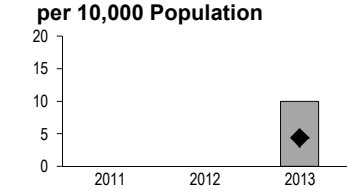
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Cary	34.6%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Cary	10.0
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery
The City of Concord provides recreation services through the separate Parks and Recreation Department. The city provides an array of facilities and activities for recreation.

The city has eight separate parks and sites. These parks cover 363 land acres; 145 of those acres are developed. The city has seven miles of recreational trails, most of them paved.

In addition to the core parks and recreational facilities, Concord has one large outdoor performance event site and one boat ramp. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs
Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	81,461
Land Area (Square Miles)	60.28
Persons per Square Mile	1,351
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	5.0
Maintenance Staff FTEs	0.0
Program and Facility FTEs	11.5
Other Staff FTEs	1.0
TOTAL	17.5
Number of Parks and Sites	8
Total Land Acreage in Parks	363.0
Miles of Trails in Parks	7.1
Recreational Facilities	
Indoor and Outdoor Pools	1
Recreation Centers	3
Outdoor Basketball Courts	5
Outdoor Tennis Courts	14
Playgrounds	13
Diamond Fields	13
Rectangular Fields	8
Other Athletic Fields	1
Picnic Shelters	14
Parks and Recreation Revenues	
User Fees	$290,560
Grants	$550,000
Sponsorships	$7,000
Donations	$0

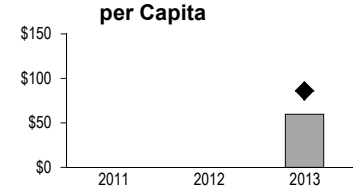
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	28.9%
Operating Costs	66.8%
Capital Costs	4.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,408,142
Operating Costs	$3,253,630
Capital Costs	$205,972
TOTAL	$4,867,744

Key: Concord ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

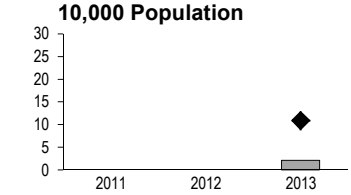
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Concord	$60
Average	$86

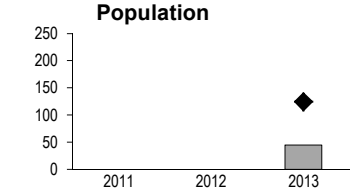
Core Parks and Recreation Staff per 10,000 Population



	2013
Concord	2.1
Average	10.9

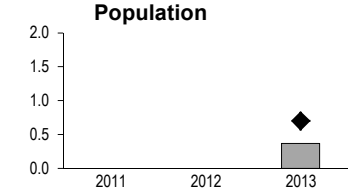
Facilities Measures

Land Acres of Parks per 10,000 Population



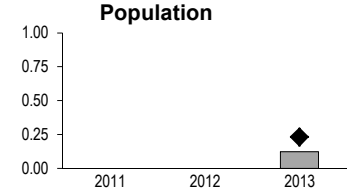
	2013
Concord	44.56
Average	123.97

Recreation Centers per 10,000 Population



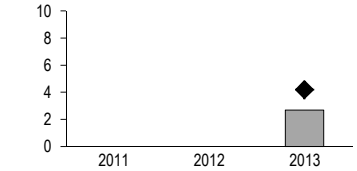
	2013
Concord	0.37
Average	0.70

Swimming Pools per 10,000 Population



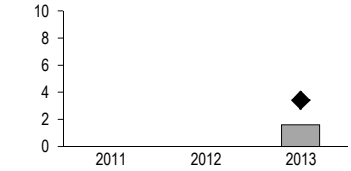
	2013
Concord	0.12
Average	0.23

Athletic Fields per 10,000 Population



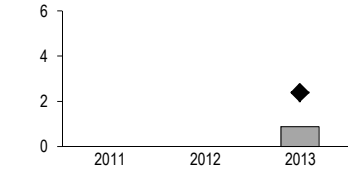
	2013
Concord	2.70
Average	4.19

Playgrounds per 10,000 Population



	2013
Concord	1.60
Average	3.43

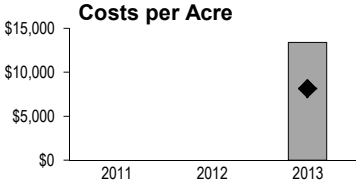
Miles of Land Trails per 10,000 Population



	2013
Concord	0.87
Average	2.39

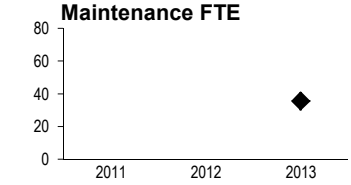
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



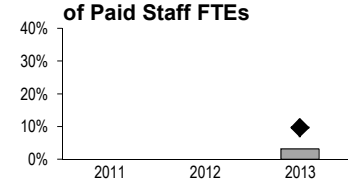
	2013
Concord	$13,410
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Concord	0.0
Average	35.7

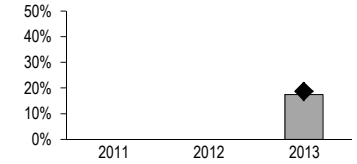
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Concord	3.2%
Average	9.8%

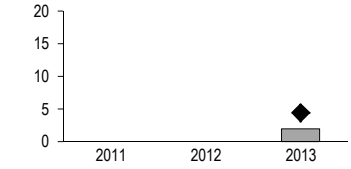
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Concord	17.4%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Concord	2.0
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Durham provides recreation services through the separate Parks and Recreation Department. The city has many agreements with the Durham County schools, Duke University, and various non-profits for the provision of services or use of facilities.

The city has sixty-eight separate parks and sites. These parks cover 1,855 land acres; more than three-fourths of them are developed. In addition, 1,049 acres in water space is part of the parks system. The city has forty miles of trails, three-fourths of them paved.

In addition to the core parks and recreational facilities, Durham has five historic properties, two boat ramps, one museum, and one municipal eighteen-hole golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	236,566
Land Area (Square Miles)	108.73
Persons per Square Mile	2,176
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	22.0
Maintenance Staff FTEs	33.0
Program and Facility FTEs	144.0
Other Staff FTEs	0.0
TOTAL	199.0
Number of Parks and Sites	68
Total Land Acreage in Parks	1,855.0
Miles of Trails in Parks	40.0
Recreational Facilities	
Indoor and Outdoor Pools	5
Recreation Centers	10
Outdoor Basketball Courts	37 full, 8 half
Outdoor Tennis Courts	78
Playgrounds	57
Diamond Fields	29
Rectangular Fields	12
Other Athletic Fields	16
Picnic Shelters	48
Parks and Recreation Revenues	
User Fees	$1,211,781
Grants	$51,556
Sponsorships	$11,075
Donations	$2,739

Full Cost Profile

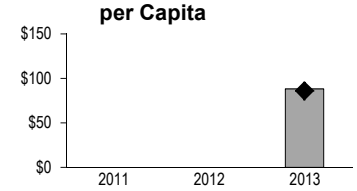
Cost Breakdown by Percentage	
Personal Services	38.6%
Operating Costs	25.2%
Capital Costs	36.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,052,205
Operating Costs	$5,252,984
Capital Costs	$7,529,789
TOTAL	$20,834,978

Durham Core Parks and Recreation

Key: Durham ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

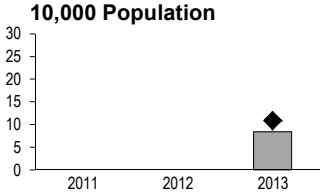
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Durham	$88
Average	$86

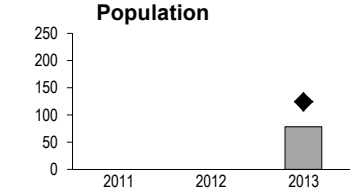
Core Parks and Recreation Staff per 10,000 Population



	2013
Durham	8.4
Average	10.9

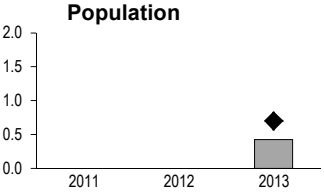
Facilities Measures

Land Acres of Parks per 10,000 Population



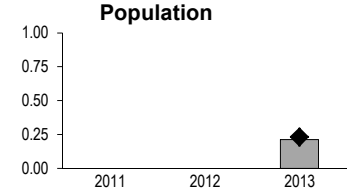
	2013
Durham	78.41
Average	123.97

Recreation Centers per 10,000 Population



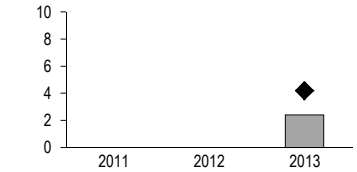
	2013
Durham	0.42
Average	0.70

Swimming Pools per 10,000 Population



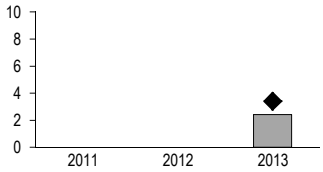
	2013
Durham	0.21
Average	0.23

Athletic Fields per 10,000 Population



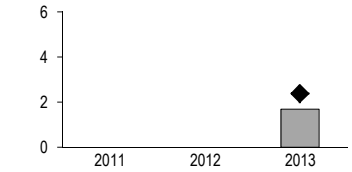
	2013
Durham	2.41
Average	4.19

Playgrounds per 10,000 Population



	2013
Durham	2.41
Average	3.43

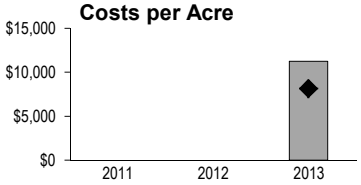
Miles of Land Trails per 10,000 Population



	2013
Durham	1.69
Average	2.39

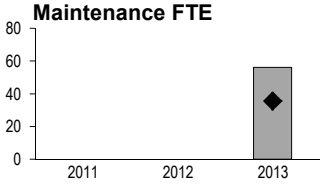
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



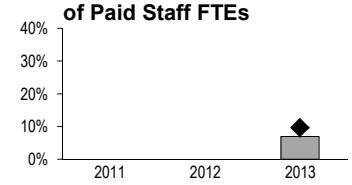
	2013
Durham	$11,232
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Durham	56.2
Average	35.7

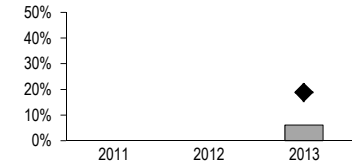
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Durham	6.9%
Average	9.8%

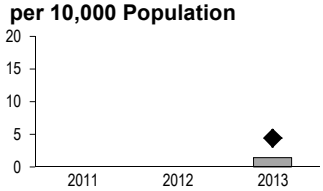
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Durham	6.1%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Durham	1.4
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Greensboro provides recreation services through the separate Parks and Recreation Department. The city has several cooperative agreements with the local schools and some non-profits for the provision of services or use of facilities. The city provides a full array of recreational facilities and activities.

The city has 616 separate parks and sites. These parks cover 6,369 land acres; most of them are developed. In addition, 2,584 acres in water space is part of the parks system. The city has eighty-five miles of trails; about one-third of them are paved.

In addition to the core parks and recreational facilities, Greensboro has a large outdoor performance event site, a historic property, a famers' market, a boat ramp and marina, and operates a nine-hole municipal golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	275,048
Land Area (Square Miles)	127.14
Persons per Square Mile	2,163
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	17.0
Maintenance Staff FTEs	91.0
Program and Facility FTEs	80.0
Other Staff FTEs	0.0
TOTAL	188.0
Number of Parks and Sites	616
Total Land Acreage in Parks	6,369.0
Miles of Trails in Parks	85.0
Recreational Facilities	
Indoor and Outdoor Pools	6
Recreation Centers	11
Outdoor Basketball Courts	2 full, 38 half
Outdoor Tennis Courts	98
Playgrounds	104
Diamond Fields	55
Rectangular Fields	54
Other Athletic Fields	0
Picnic Shelters	40
Parks and Recreation Revenues	
User Fees	$1,141,313
Grants	$28,547
Sponsorships	$2,834
Donations	$87,550

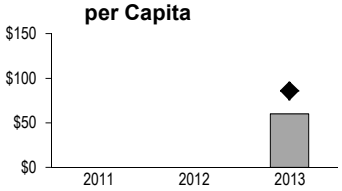
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	60.7%
Operating Costs	39.3%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,023,624
Operating Costs	$6,480,550
Capital Costs	$0
TOTAL	$16,504,174

Key: Greensboro ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

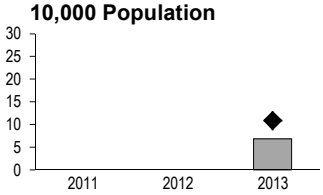
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Greensboro	$60
Average	$86

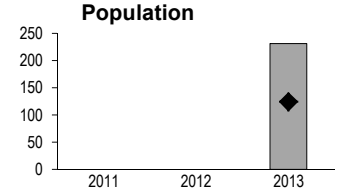
Core Parks and Recreation Staff per 10,000 Population



	2013
Greensboro	6.8
Average	10.9

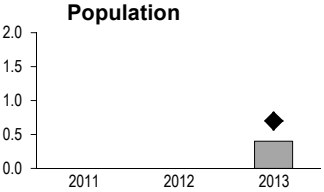
Facilities Measures

Land Acres of Parks per 10,000 Population



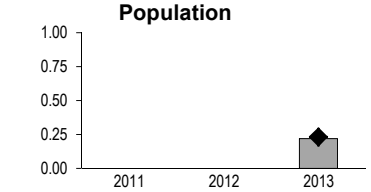
	2013
Greensboro	231.56
Average	123.97

Recreation Centers per 10,000 Population



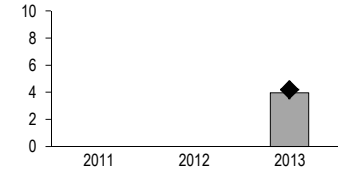
	2013
Greensboro	0.40
Average	0.70

Swimming Pools per 10,000 Population



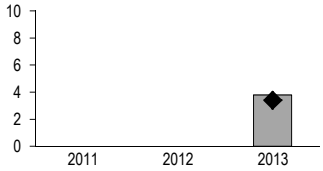
	2013
Greensboro	0.22
Average	0.23

Athletic Fields per 10,000 Population



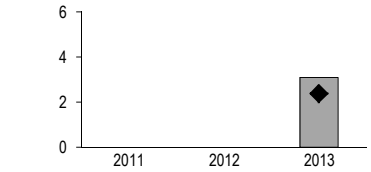
	2013
Greensboro	3.96
Average	4.19

Playgrounds per 10,000 Population



	2013
Greensboro	3.78
Average	3.43

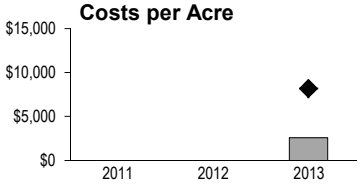
Miles of Land Trails per 10,000 Population



	2013
Greensboro	3.09
Average	2.39

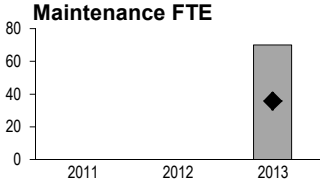
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



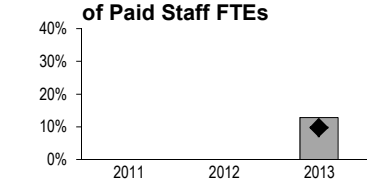
	2013
Greensboro	$2,591
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Greensboro	70.0
Average	35.7

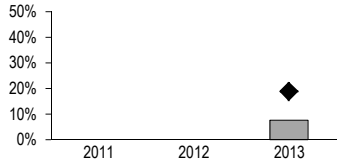
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Greensboro	12.8%
Average	9.8%

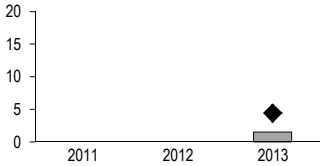
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Greensboro	7.6%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Greensboro	1.5
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Greenville provides recreation services through the separate Recreation and Parks Department. The city has a number of ad hoc or handshake agrements with other organizations but is moving to more formal agreements. Partner groups include Pitt County, local sports organizations, and concert entertainment groups.

The city has 30 separate parks and sites. These parks cover 1,361 acres; about two-thirds of them are developed. The city has nearly fourteen and a half miles of trails, of which 4.5 miles are paved.

In addition to the core parks and recreational facilities, Greenville has a large outdoor performance event site, a historic property, a boat ramp, a museum, and an eighteen-hold golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	86,142
Land Area (Square Miles)	34.70
Persons per Square Mile	2,482
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	3.0
Maintenance Staff FTEs	30.3
Program and Facility FTEs	83.5
Other Staff FTEs	5.0
TOTAL	121.8
Number of Parks and Sites	30
Total Land Acreage in Parks	1,361.0
Miles of Trails in Parks	14.5
Recreational Facilities	
Indoor and Outdoor Pools	2
Recreation Centers	8
Outdoor Basketball Courts	1 full, 2 half
Outdoor Tennis Courts	24
Playgrounds	13
Diamond Fields	18
Rectangular Fields	6
Other Athletic Fields	2
Picnic Shelters	26
Parks and Recreation Revenues	
User Fees	$2,200,000
Grants	$10,000
Sponsorships	$15,000
Donations	$19,000

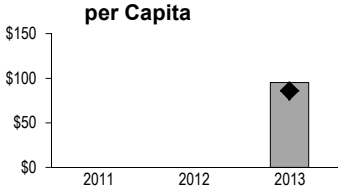
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	60.0%
Operating Costs	35.5%
Capital Costs	4.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,912,982
Operating Costs	$2,906,615
Capital Costs	$363,519
TOTAL	$8,183,116

Key: Greenville ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

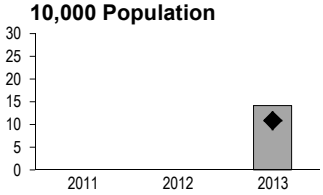
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Greenville	$95
Average	$86

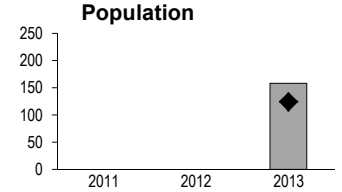
Core Parks and Recreation Staff per 10,000 Population



	2013
Greenville	14.1
Average	10.9

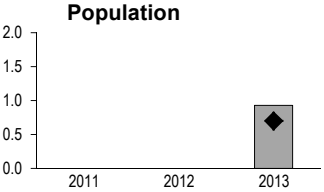
Facilities Measures

Land Acres of Parks per 10,000 Population



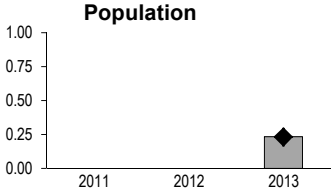
	2013
Greenville	157.99
Average	123.97

Recreation Centers per 10,000 Population



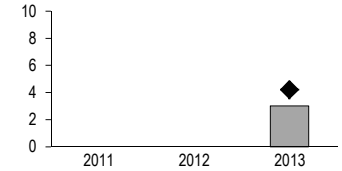
	2013
Greenville	0.93
Average	0.70

Swimming Pools per 10,000 Population



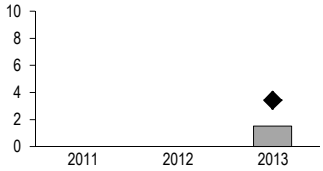
	2013
Greenville	0.23
Average	0.23

Athletic Fields per 10,000 Population



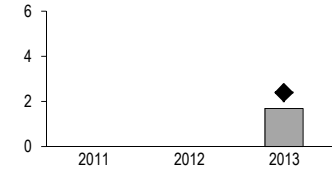
	2013
Greenville	3.02
Average	4.19

Playgrounds per 10,000 Population



	2013
Greenville	1.51
Average	3.43

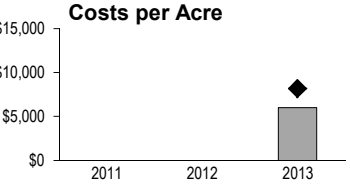
Miles of Land Trails per 10,000 Population



	2013
Greenville	1.68
Average	2.39

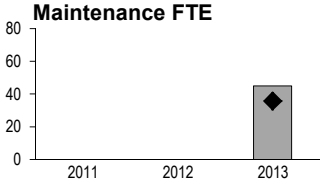
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



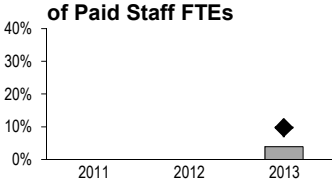
	2013
Greenville	$6,013
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Greenville	45.0
Average	35.7

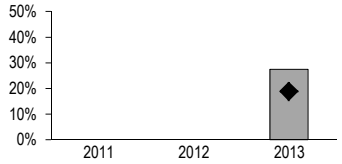
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Greenville	3.9%
Average	9.8%

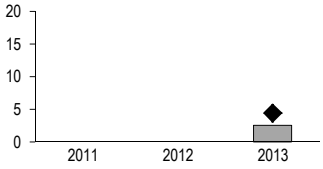
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Greenville	27.4%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Greenville	2.6
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Hickory Parks and Recreation Department is a separate department under the city organization. The city has partnerships with other organizations to provide recreational services including a priority use agreement with local schools for use of facilities over other non-school users and a priority use agreement with Catawba Valley Youth Soccer for use of city soccer fields.

The city has 25 separate parks and sites. This includes 504 acres of park acreage; 428 of these acres are developed. The city has 10.6 miles of trails; 4.6 of them are paved.

In addition to the core parks and recreational facilities, Hickory has one historic property, one professional sports facility, one boat ramp, one museum, two community gardens, and a tower ropes course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	40,039
Land Area (Square Miles)	29.72
Persons per Square Mile	1,347
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	4.0
Maintenance Staff FTEs	27.5
Program and Facility FTEs	21.5
Other Staff FTEs	0.0
TOTAL	53.0
Number of Parks and Sites	25
Total Land Acreage in Parks	504.0
Miles of Trails in Parks	10.6
Recreational Facilities	
Indoor and Outdoor Pools	0
Recreation Centers	6
Outdoor Basketball Courts	13 full, 1 half
Outdoor Tennis Courts	17
Playgrounds	39
Diamond Fields	13
Rectangular Fields	11
Other Athletic Fields	0
Picnic Shelters	17
Parks and Recreation Revenues	
User Fees	$202,562
Grants	$0
Sponsorships	$37,097
Donations	$1,000

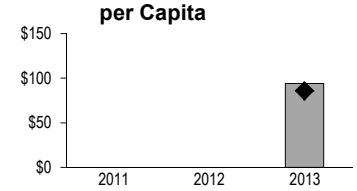
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	65.2%
Operating Costs	33.0%
Capital Costs	1.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,451,429
Operating Costs	$1,241,903
Capital Costs	$67,852
TOTAL	$3,761,184

Key: Hickory ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

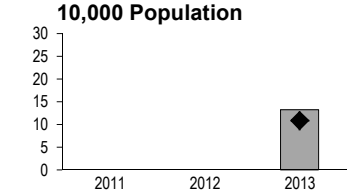
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Hickory	$94
Average	$86

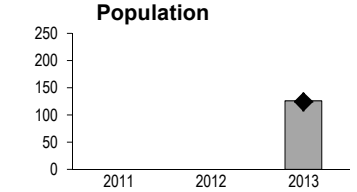
Core Parks and Recreation Staff per 10,000 Population



	2013
Hickory	13.2
Average	10.9

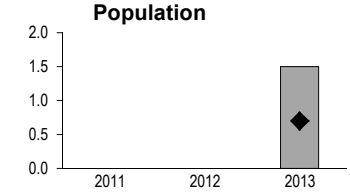
Facilities Measures

Land Acres of Parks per 10,000 Population



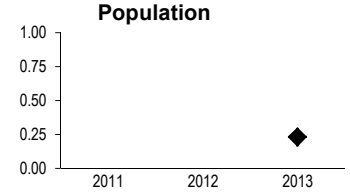
	2013
Hickory	125.88
Average	123.97

Recreation Centers per 10,000 Population



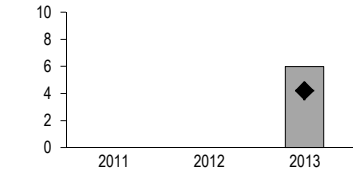
	2013
Hickory	1.50
Average	0.70

Swimming Pools per 10,000 Population



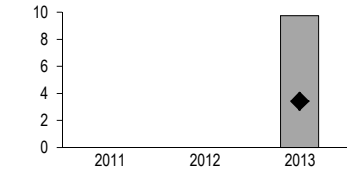
	2013
Hickory	0.00
Average	0.23

Athletic Fields per 10,000 Population



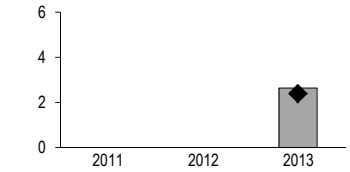
	2013
Hickory	5.99
Average	4.19

Playgrounds per 10,000 Population



	2013
Hickory	9.74
Average	3.43

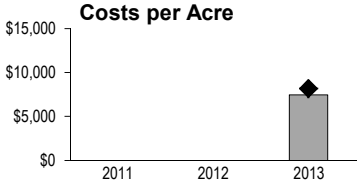
Miles of Land Trails per 10,000 Population



	2013
Hickory	2.64
Average	2.39

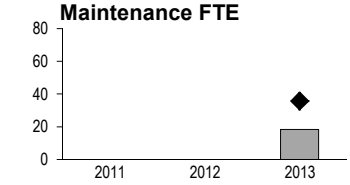
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



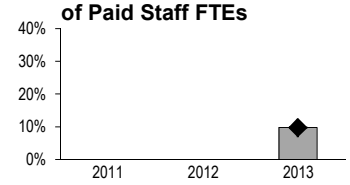
	2013
Hickory	$7,463
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Hickory	18.3
Average	35.7

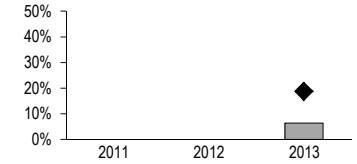
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Hickory	9.8%
Average	9.8%

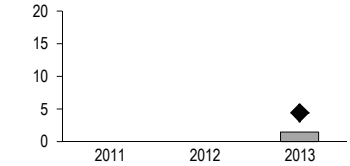
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Hickory	6.4%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Hickory	1.5
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of High Point's Parks and Recreation Department is a separate department within the city. The city has a full array of recreational facilities and programs available.

The city has fifty separate parks with 1,919 acres; most of this acreage is developed. Additionally, 1,569 acres of water space is part of the parks system. The city has 20.5 miles of trails; just less than half of them are paved. All of these are multi-purpose trails, but equestrian riding is not permitted.

In addition to traditional core recreational facilities, High Point has a two public boat ramps as part of the department's operations. These facilities are not included here in dollars or staff as part of core park and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	106,406
Land Area (Square Miles)	53.83
Persons per Square Mile	1,977
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	10.5
Maintenance Staff FTEs	57.5
Program and Facility FTEs	61.3
Other Staff FTEs	5.0
TOTAL	134.3
Number of Parks and Sites	50
Total Land Acreage in Parks	1,919
Miles of Trails in Parks	20.5
Recreational Facilities	
Indoor and Outdoor Pools	2
Recreation Centers	6
Outdoor Basketball Courts	15
Outdoor Tennis Courts	28
Playgrounds	24
Diamond Fields	22
Rectangular Fields	27
Other Athletic Fields	2
Picnic Shelters	36
Parks and Recreation Revenues	
User Fees	$1,305,838
Grants	$19,668
Sponsorships	$15,162
Donations	$23,881

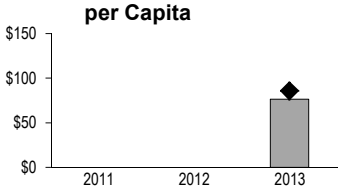
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	57.3%
Operating Costs	34.1%
Capital Costs	8.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,652,547
Operating Costs	$2,775,124
Capital Costs	$699,007
TOTAL	$8,126,678

Key: High Point ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

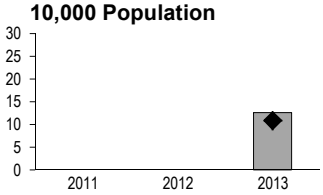
Resource Measures

Core Parks and Recreation Services per Capita



	2013
High Point	$76
Average	$86

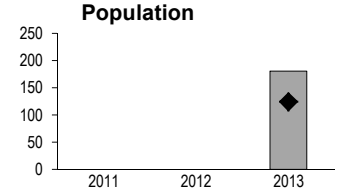
Core Parks and Recreation Staff per 10,000 Population



	2013
High Point	12.6
Average	10.9

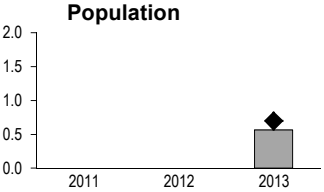
Facilities Measures

Land Acres of Parks per 10,000 Population



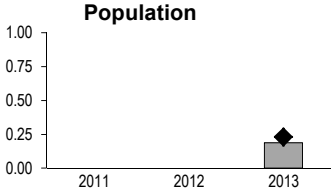
	2013
High Point	180.35
Average	123.97

Recreation Centers per 10,000 Population



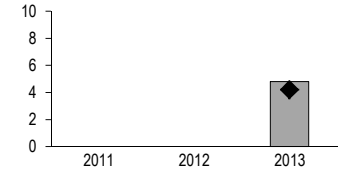
	2013
High Point	0.56
Average	0.70

Swimming Pools per 10,000 Population



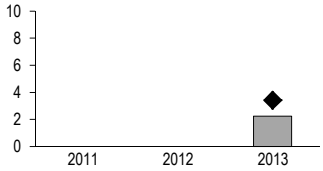
	2013
High Point	0.19
Average	0.23

Athletic Fields per 10,000 Population



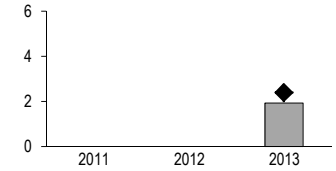
	2013
High Point	4.79
Average	4.19

Playgrounds per 10,000 Population



	2013
High Point	2.26
Average	3.43

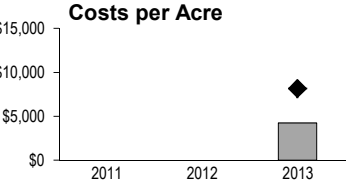
Miles of Land Trails per 10,000 Population



	2013
High Point	1.93
Average	2.39

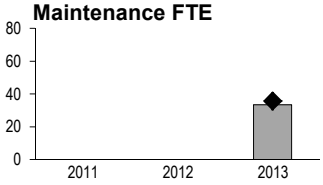
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



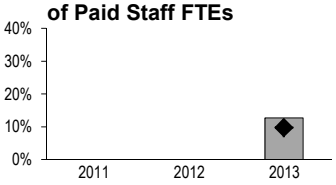
	2013
High Point	$4,235
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
High Point	33.4
Average	35.7

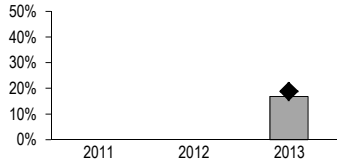
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
High Point	12.7%
Average	9.8%

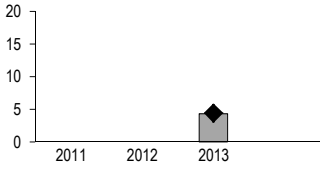
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
High Point	16.8%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
High Point	4.3
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Salisbury provides parks and recreation services through a separate department. This department includes other functions, such as services related to cemeteries, landscaping, right-of-ways, trees, medians, and mowing.

These other functions are not counted in the employees or dollars shown here. The city has an agreement with Rowan County for providing certain services for special populations. The city also provides funding for senior recreation services at the Rufty Homes Senior Center.

Salisbury has a full array of recreational facilities available. The city has more than 508 acres of parks; 308 of those acres are developed and 200 are undeveloped. The city has 16.9 miles of trails, 5.2 miles of which are paved.

In addition to traditional recreational facilities, Salisbury has a large outdoor performance event site and six historic sites. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Many of Salisbury's neighborhood recreational facilities are forty years or older and somewhat dated. There is a YMCA in the city for paying members. The city programs primarily serve those who cannot afford the YMCA programs.

Municipal Profile

Population (OSBM 2012)	33,442
Land Area (Square Miles)	22.18
Persons per Square Mile	1,508
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	2.0
Maintenance Staff FTEs	23.5
Program and Facility FTEs	11.7
Other Staff FTEs	0.0
TOTAL	37.2
Number of Parks and Sites	28
Total Land Acreage in Parks	508.0
Miles of Trails in Parks	16.9
Recreational Facilities	
Indoor and Outdoor Pools	1
Recreation Centers	3
Outdoor Basketball Courts	6 full, 6 half
Outdoor Tennis Courts	10
Playgrounds	18
Diamond Fields	8
Rectangular Fields	4
Other Athletic Fields	0
Picnic Shelters	20
Parks and Recreation Revenues	
User Fees	$167,439
Grants	$1,250
Sponsorships	$7,250
Donations	$14,901

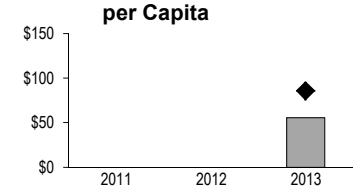
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	62.4%
Operating Costs	32.3%
Capital Costs	5.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,161,188
Operating Costs	$600,176
Capital Costs	$99,128
TOTAL	$1,860,492

Key: Salisbury ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

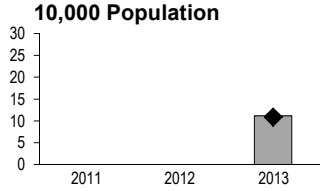
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Salisbury	$56
Average	$86

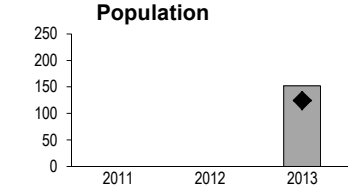
Core Parks and Recreation Staff per 10,000 Population



	2013
Salisbury	11.1
Average	10.9

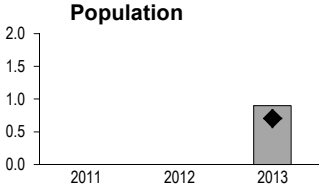
Facilities Measures

Land Acres of Parks per 10,000 Population



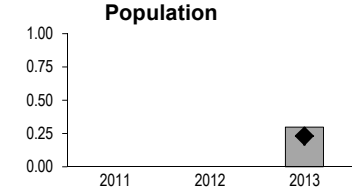
	2013
Salisbury	151.90
Average	123.97

Recreation Centers per 10,000 Population



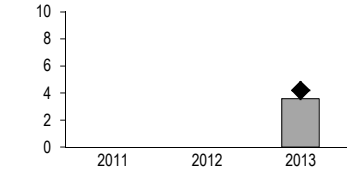
	2013
Salisbury	0.90
Average	0.70

Swimming Pools per 10,000 Population



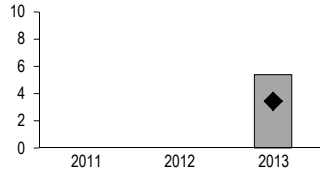
	2013
Salisbury	0.30
Average	0.23

Athletic Fields per 10,000 Population



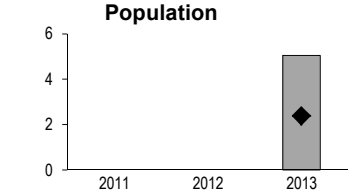
	2013
Salisbury	3.59
Average	4.19

Playgrounds per 10,000 Population



	2013
Salisbury	5.38
Average	3.43

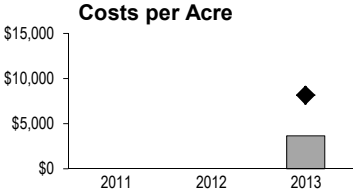
Miles of Land Trails per 10,000 Population



	2013
Salisbury	5.05
Average	2.39

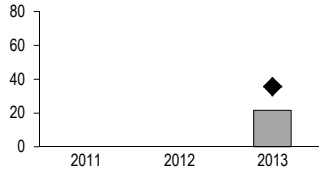
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



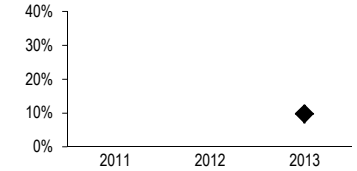
	2013
Salisbury	$3,662
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Salisbury	21.6
Average	35.7

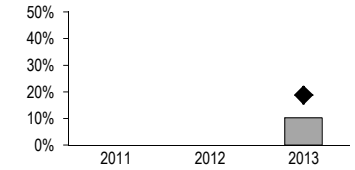
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Salisbury	
Average	9.8%

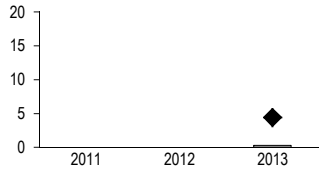
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Salisbury	10.3%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Salisbury	0.3
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Wilmington provides recreation services through the Recreation and Downtown Services Division of the Community Services Department. Additionally, maintenance is performed by the Parks, Tree, and Athletic Field Division. The city has partnerships with other organizations, including the New Hanover Schools for the use of some facilities and the Cape Fear Community College for the provision of classes.

The city has thirty-four separate parks and sites. This includes 459 acres, all developed. The city has nearly twenty-four miles of trails, all paved.

In addition to the core parks and recreational facilities, Wilmington has a large outdoor performance event site, a historic property, a professional sports stadium, a farmers' market, and four boat ramps. The city also runs a municipal eighteen-hole golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	109,689
Land Area (Square Miles)	51.49
Persons per Square Mile	2,130
Topography	Flat, coastal plain
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	7.0
Maintenance Staff FTEs	47.0
Program and Facility FTEs	36.8
Other Staff FTEs	0.0
TOTAL	90.8
Number of Parks and Sites	34
Total Land Acreage in Parks	459.0
Miles of Trails in Parks	23.6
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	3
Outdoor Basketball Courts	21
Outdoor Tennis Courts	33
Playgrounds	35
Diamond Fields	17
Rectangular Fields	1
Other Athletic Fields	4
Picnic Shelters	21
Parks and Recreation Revenues	
User Fees	$722,590
Grants	$1,145,515
Sponsorships	$555,000
Donations	$41,375

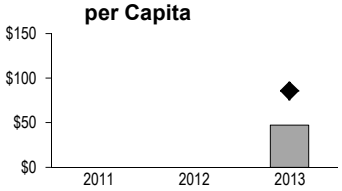
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	50.5%
Operating Costs	39.8%
Capital Costs	9.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,622,346
Operating Costs	$2,067,008
Capital Costs	$506,612
TOTAL	$5,195,966

Key: Wilmington ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

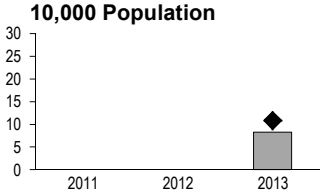
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Wilmington	$47
Average	$86

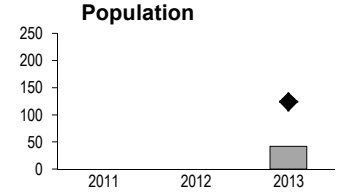
Core Parks and Recreation Staff per 10,000 Population



	2013
Wilmington	8.3
Average	10.9

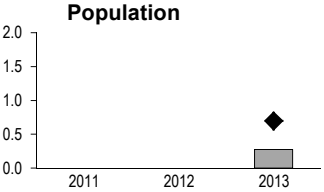
Facilities Measures

Land Acres of Parks per 10,000 Population



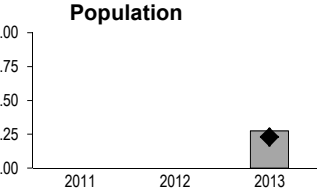
	2013
Wilmington	41.85
Average	123.97

Recreation Centers per 10,000 Population



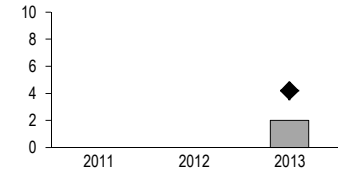
	2013
Wilmington	0.27
Average	0.70

Swimming Pools per 10,000 Population



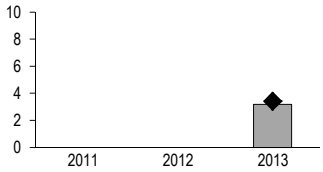
	2013
Wilmington	0.27
Average	0.23

Athletic Fields per 10,000 Population



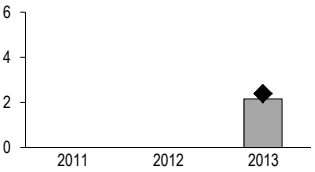
	2013
Wilmington	2.01
Average	4.19

Playgrounds per 10,000 Population



	2013
Wilmington	3.19
Average	3.43

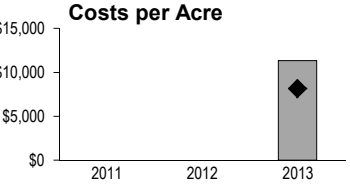
Miles of Land Trails per 10,000 Population



	2013
Wilmington	2.15
Average	2.39

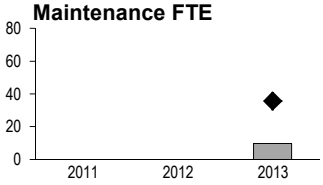
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



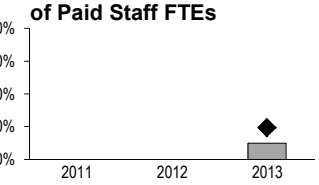
	2013
Wilmington	$11,320
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Wilmington	9.8
Average	35.7

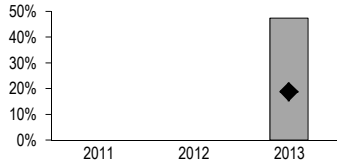
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Wilmington	5.0%
Average	9.8%

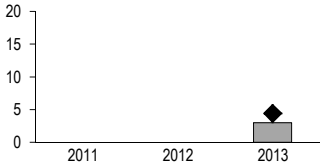
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Wilmington	47.4%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Wilmington	3.0
Average	4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Wilson Parks and Recreation Department is a separate department under the city organization. The city has partnerships with other organizations to provide recreational services, including the Wilson County Schools, the Wilson Youth Soccer Association, Wilson City Little League, Special Olympics, Youth Soccer Association, the Senior Games of North Carolina, and the Wilson Arts Council.

The city has twenty-eight separate parks and sites. This includes 400 acres of park acreage, 75 of which are developed. The city has ten miles of trails, all unpaved.

In addition to the core parks and recreational facilities, Wilson has three boat ramps and one museum. The city also runs a municipal eighteen-hole golf course. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2012)	49,440
Land Area (Square Miles)	28.78
Persons per Square Mile	1,718
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	4.5
Maintenance Staff FTEs	14.0
Program and Facility FTEs	44.5
Other Staff FTEs	2.0
TOTAL	65.0
Number of Parks and Sites	28
Total Land Acreage in Parks	400.0
Miles of Trails in Parks	10.0
Recreational Facilities	
Indoor and Outdoor Pools	2
Recreation Centers	2
Outdoor Basketball Courts	7
Outdoor Tennis Courts	18
Playgrounds	25
Diamond Fields	11
Rectangular Fields	8
Other Athletic Fields	0
Picnic Shelters	17
Parks and Recreation Revenues	
User Fees	$367,000
Grants	$0
Sponsorships	$30,000
Donations	$100,000

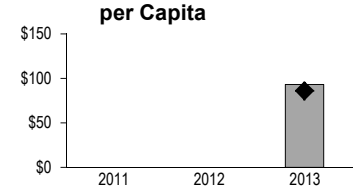
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	53.1%
Operating Costs	38.4%
Capital Costs	8.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,445,999
Operating Costs	$1,769,317
Capital Costs	$387,988
TOTAL	$4,603,304

Key: Wilson ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

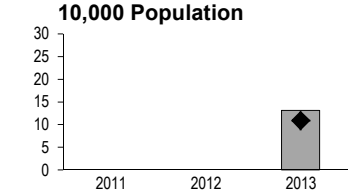
Resource Measures

Core Parks and Recreation Services per Capita



	2011	2012	2013
Wilson			$93
Average			$86

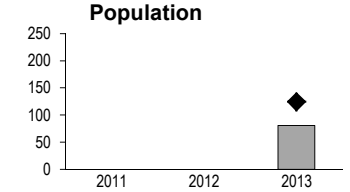
Core Parks and Recreation Staff per 10,000 Population



	2011	2012	2013
Wilson			13.1
Average			10.9

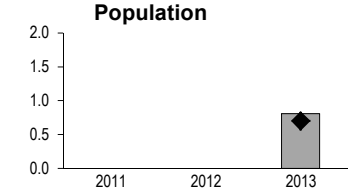
Facilities Measures

Land Acres of Parks per 10,000 Population



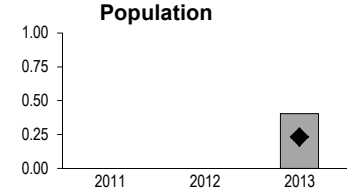
	2011	2012	2013
Wilson			80.91
Average			123.97

Recreation Centers per 10,000 Population



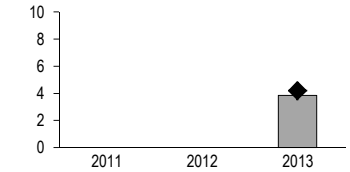
	2011	2012	2013
Wilson			0.81
Average			0.70

Swimming Pools per 10,000 Population



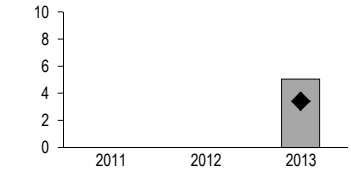
	2011	2012	2013
Wilson			0.40
Average			0.23

Athletic Fields per 10,000 Population



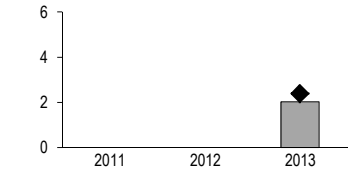
	2011	2012	2013
Wilson			3.84
Average			4.19

Playgrounds per 10,000 Population



	2011	2012	2013
Wilson			5.06
Average			3.43

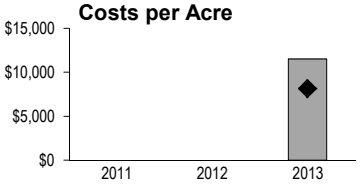
Miles of Land Trails per 10,000 Population



	2011	2012	2013
Wilson			2.02
Average			2.39

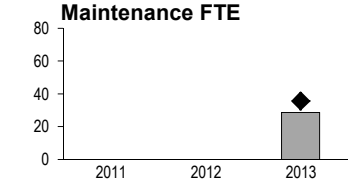
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



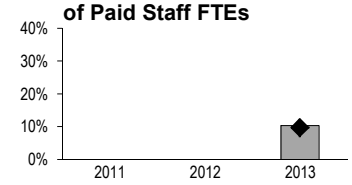
	2011	2012	2013
Wilson			$11,508
Average			$8,164

Acres of Park Maintained per Maintenance FTE



	2011	2012	2013
Wilson			28.6
Average			35.7

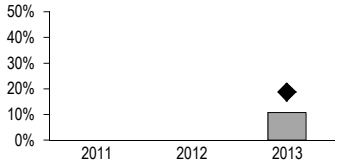
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2011	2012	2013
Wilson			10.4%
Average			9.8%

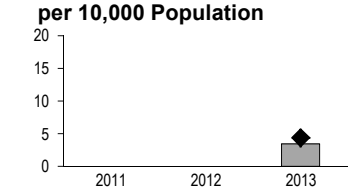
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2011	2012	2013
Wilson			10.8%
Average			18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2011	2012	2013
Wilson			3.4
Average			4.4

Fiscal Year 2012–13

Explanatory Information

Service Level and Delivery

The City of Winston-Salem Recreation and Parks Department is a separate department under the city organization. The department is overseen by the advisory Parks and Recreation Commission, which has eleven members appointed by the mayor and approved by the city council. The city has formal cooperative arrangements with Foryth County and various public-private partnerships with other organizations to provide recreational services.

The city has seventy-six separate parks and sites. This includes 3,057 acres of park acreage, 2,851 of which are developed. The city has twenty-three miles of trails, about two-thirds of which are paved.

In addition to the core parks and recreational facilities, Winston-Salem has two large outdoor performance event sites, a historic property, one boat ramp, and one museum. The city also runs two municipal eighteen-hole golf courses. The operation of these other facilities is not included in the Core Parks and Recreation comparisons reported here. These facilities are not included here in dollars or staff as part of core parks and recreation facilities and activities.

Conditions Affecting Service, Performance, and Costs

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Many Forsyth County residents make use of of the city's parks and recreational facilities. Most of the city's facilities were built in the 1960s to 1980s and are aging.

Municipal Profile

Population (OSBM 2012)	233,232
Land Area (Square Miles)	132.45
Persons per Square Mile	1,761
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	27.1
Maintenance Staff FTEs	72.8
Program and Facility FTEs	100.6
Other Staff FTEs	0.0
TOTAL	200.5
Number of Parks and Sites	76
Total Land Acreage in Parks	3,057.0
Miles of Trails in Parks	23.2
Recreational Facilities	
Indoor and Outdoor Pools	8
Recreation Centers	17
Outdoor Basketball Courts	15 full, 1 half
Outdoor Tennis Courts	112
Playgrounds	47
Diamond Fields	47
Rectangular Fields	50
Other Athletic Fields	0
Picnic Shelters	51
Parks and Recreation Revenues	
User Fees	$899,689
Grants	$150,035
Sponsorships	$1,335
Donations	$76,312

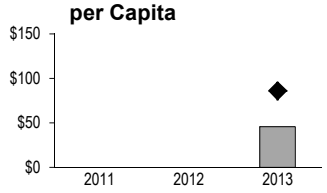
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	52.9%
Operating Costs	34.3%
Capital Costs	12.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,619,111
Operating Costs	$3,646,108
Capital Costs	$1,366,231
TOTAL	$10,631,450

Key: Winston-Salem ■ Benchmarking Average ◆ Fiscal Years 20011 through 2013

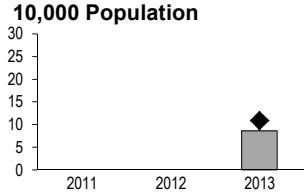
Resource Measures

Core Parks and Recreation Services per Capita



	2013
Winston-Salem	$46
Average	$86

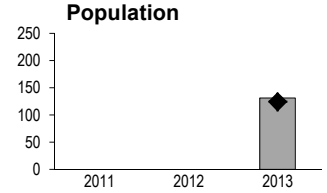
Core Parks and Recreation Staff per 10,000 Population



	2013
Winston-Salem	8.6
Average	10.9

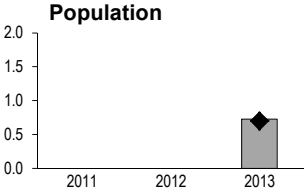
Facilities Measures

Land Acres of Parks per 10,000 Population



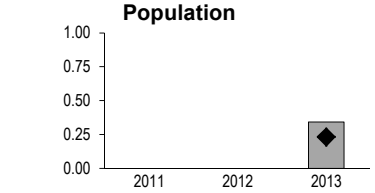
	2013
Winston-Salem	131.07
Average	123.97

Recreation Centers per 10,000 Population



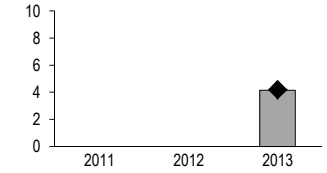
	2013
Winston-Salem	0.73
Average	0.70

Swimming Pools per 10,000 Population



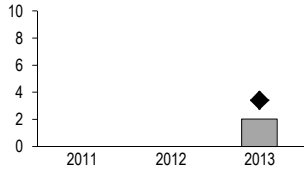
	2013
Winston-Salem	0.34
Average	0.23

Athletic Fields per 10,000 Population



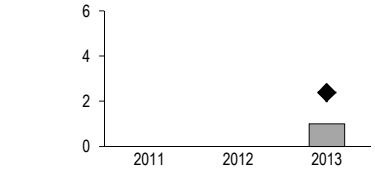
	2013
Winston-Salem	4.16
Average	4.19

Playgrounds per 10,000 Population



	2013
Winston-Salem	2.02
Average	3.43

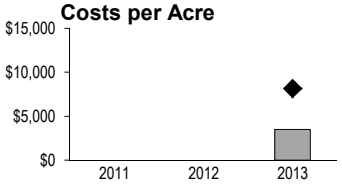
Miles of Land Trails per 10,000 Population



	2013
Winston-Salem	1.00
Average	2.39

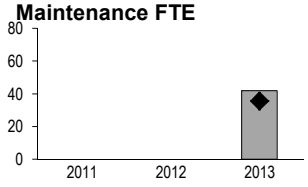
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



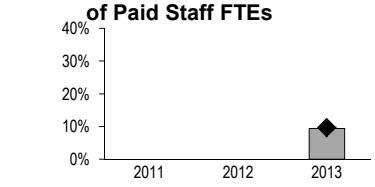
	2013
Winston-Salem	$3,478
Average	$8,164

Acres of Park Maintained per Maintenance FTE



	2013
Winston-Salem	42.0
Average	35.7

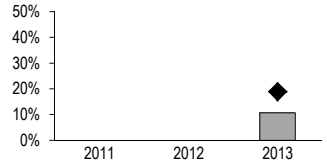
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013
Winston-Salem	9.4%
Average	9.8%

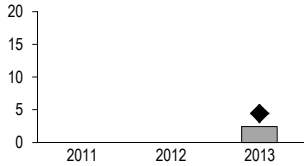
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013
Winston-Salem	10.6%
Average	18.8%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013
Winston-Salem	2.4
Average	4.4

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