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SCHOOL OF GOVERNMENT

NORTH CAROLINA LOCAL GOVERNMENT
PERFORMANCE MEASUREMENT PROJECT

Final Report on City Services for Fiscal Year 2015–2016

PERFORMANCE AND COST DATA

MAY 2017

COSPONSORED BY:

THE CITIES OF APEX, ASHEVILLE, BURLINGTON, CARY, CHAPEL HILL, CHARLOTTE, CONCORD, GREENSBORO, GREENVILLE, HICKORY, HIGH POINT, RALEIGH, SALISBURY, WILSON, AND WINSTON-SALEM

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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, 2016, for the fifteen North Carolina municipalities participating in the benchmarking project —Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem. Twenty 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 and Finance Report Manager, and Lauren Brune, Budget Analyst of Asheville; Aaron Noble, Human Resources Director of Burlington; Kathy Katie Lumb, Budget Analyst of Cary; David Finley, Budget and Management Analyst of Chapel Hill; Justin Amos, Budget Analyst of City of Charlotte; Robin Barham, Budget and Performance Manager, and Lesley Reder, Management Analyst, of Concord; Jon Decker, Budget Analyst of Greensboro; Shelley Leach, Financial Analyst of Greenville; Cameron McHargue, Budget Analyst of Hickory; Roslyn McNeil, Budget Analyst, and Laura Altizer, Senior Budget Analyst, of High Point; Monica Chaparro, Strategic Planning and Performance Manager, and Amber Smith, Budget Manager, of Raleigh; Evans C. Ballard, Budget and Benchmarking Analyst of Salisbury; Lanette Pridgen, Budget Analyst of Wilson; and Scott Tesh, Director of the Office of Performance and Accountability, of Winston-Salem.

The benchmarking project receives contributions from other individuals who strongly support benchmarking and performance measurement. William C. Rivenbark and David N. Ammons, 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 Leslie Watkins and Dan Soileau in the Publications Division.

Dale J. Roenigk
May 2017


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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
- Chapel Hill
- Charlotte
- Concord
- Greensboro
- Greenville
- Hickory
- High Point
- Raleigh
- Salisbury
- 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 twenty-first publication representing municipal services. The previous twenty 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)
- *Final Report on City Services for Fiscal Year 2012–2013* (February 2014)
- *Final Report on City Services for Fiscal Year 2013–2014* (February 2015)
- *Final Report on City Services for Fiscal Year 2014–2015* (February 2016)

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, 2016. 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 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
Final Report on City Services for Fiscal Year 2013–2014	Apex, Burlington, Cary, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2014–2015	Apex, Burlington, Cary, Chapel Hill, Concord, Greensboro, Greenville, Hickory, High Point, Salisbury, Wilson, and Winston-Salem
Final Report on City Services for Fiscal Year 2015–2016	Apex, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, 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, 2016. 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, 2012, through June 30, 2015, 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 was added in 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, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Household Recycling	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Yard Waste/Leaf Collection	Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Police Services	Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Emergency Communications	Apex, Asheville, Burlington, Cary, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, and Winston-Salem
Asphalt Maintenance and Repair	Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem

Service Area	Jurisdictions
Fire Services	Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Building Inspections	Apex, Asheville, Burlington, Cary, Chapel Hill, Greensboro, Greenville, High Point, Raleigh, Wilson, and Winston-Salem
Fleet Maintenance	Apex, Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Central Human Resources	Apex, Asheville, Burlington, Cary, Chapel Hill, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Water Services	Apex, Asheville, Burlington, Cary, Charlotte, Concord, Greensboro, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Wastewater Services	Apex, Cary, Concord, Charlotte, Greensboro, Hickory, High Point, Raleigh, Salisbury, Wilson, and Winston-Salem
Core Parks and Recreation	Apex, Asheville, Burlington, Chapel Hill, Concord, Greensboro, Greenville, Hickory, High Point, Raleigh, Salisbury, 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, 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	14,389	11,929	5	100%	Contracted	NA	NA	NA	NA	NA
Asheville	Curbside	30,069	22,414	33	0%	1 & 3 person	14	1	7	2	6 miles
Burlington	Curbside	17,198	12,872	16	0%	1 & 2 person	6	1	4	2	19 miles
Cary	Curbside	48,450	34,724	54	0%	1 & 4 person	27	2	11	1.5	30 miles
Chapel Hill	Curbside	12,063	6,673	28	0%	1 & 3 person	12.71	7	0	1	18 miles
Charlotte	Curbside	215,674	179,827	320	0%	1 & 2 person	79	7	57	1.24	22 miles
Concord	Curbside	30,154	24,888	5	100%	Contracted	NA	0	5	1	8 miles
Greensboro	Curbside	84,302	57,124	68	0%	1 & 2 person	27	3	23	1.8	8 miles
Greenville	Curbside and backyard	18,198	28,557	28	0%	1 & 3 person	11	2	5	2	5 miles
Hickory	Curbside	12,200	7,061	15	0%	1 & 2 person	3.75	0.25	3.25	2	5 miles
High Point	Curbside	49,900	35,937	44	0%	1 & 3 person	22.5	0.5	9	2	10 miles
Raleigh	Curbside	123,045	98,029	120	0%	1 & 3 person	76	10	22	2	10 miles
Salisbury	Curbside	11,095	8,694	15	0%	1 & 2 person	5	3	2	1	10 miles
Wilson	Curbside	17,975	18,000	17	0%	1 & 3 person	11	2	5	2	10 miles
Winston-Salem	Curbside	77,907	57,064	104	0%	1 & 3 person	82	16	10	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)

Apex Residential Refuse

Fiscal Year 2015–16

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 $9.92 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 service also includes a small number of businesses in the downtown area who use the standard carts but receive service twice a week.

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

The contractor collected 11,929 tons of residential refuse during FY 2015–16, at a cost of $112 per ton. The cost per ton does not include the disposal cost at the landfill.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
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	5
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)	14,389
Tons Collected	11,929
Monthly Service Fee	$9.92

Full Cost Profile

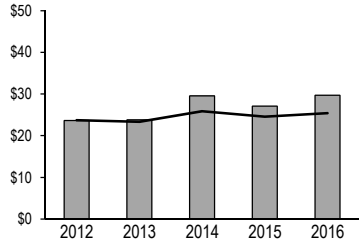
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$1,330,182
Capital Costs	$0
TOTAL	$1,330,182

Apex Residential Refuse Collection

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

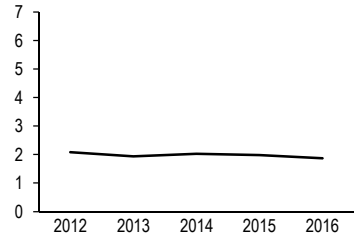
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Apex	$23.63	$23.83	$29.57	$27.10	$29.73
Average	$23.72	$23.36	$25.88	$24.54	$25.38

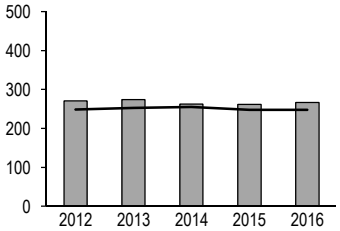
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex					
Average	2.08	1.94	2.03	1.99	1.87

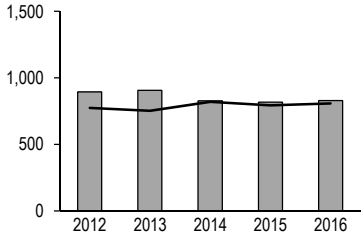
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Apex	271	274	262	262	267
Average	248	253	255	248	248

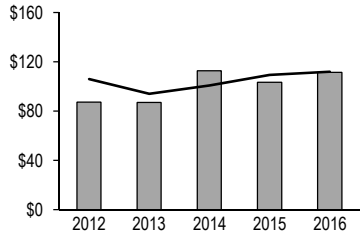
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Apex	894	905	827	816	829
Average	774	753	819	793	807

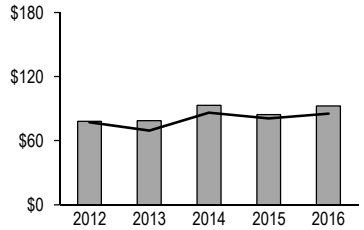
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



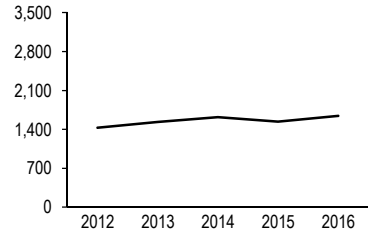
	2012	2013	2014	2015	2016
Apex	$87	$87	$113	$104	$112
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Apex	$78	$79	$93	$85	$92
Average	$77	$69	$86	$81	$85

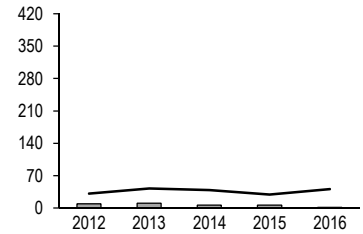
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Apex					
Average	1,430	1,531	1,619	1,537	1,645

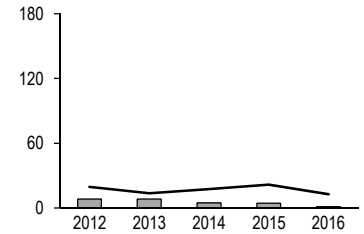
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Apex	8.6	10.4	6.2	5.8	1.0
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Apex	8.1	8.3	4.6	4.4	1.0
Average	19.5	13.6	17.4	21.6	12.6

Asheville Residential Refuse

Fiscal Year 2015–16

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 Thursday 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. 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. Two rear packers serve seven collection routes.

The city collected 22,414 tons of residential refuse during FY 2015–16, at a cost of $112 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 for $10.50 per month. Residents receiving rear-loading service provide their own containers. They are able to use up to six containers or bags. There is a $10.50 per month waste fee regardless of container size.

Conditions Affecting Service, Performance, and Costs

Asheville is highly automated in the area of residential refuse collection.

Municipal Profile

Population (OSBM 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
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)	30,069
Tons Collected	22,414
Monthly Service Fee	$10.50

Full Cost Profile

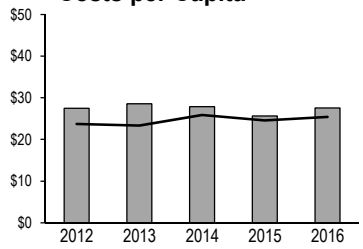
Cost Breakdown by Percentage	
Personal Services	38.0%
Operating Costs	42.4%
Capital Costs	19.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$952,304
Operating Costs	$1,062,298
Capital Costs	$492,292
TOTAL	$2,506,894

Asheville Residential Refuse Collection

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

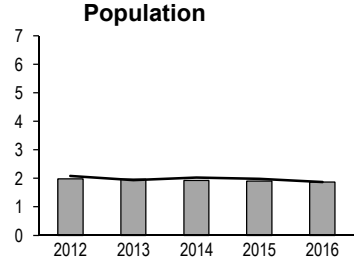
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Asheville	$27.49	$28.57	$27.89	$25.64	$27.57
Average	$23.72	$23.36	$25.88	$24.54	$25.38

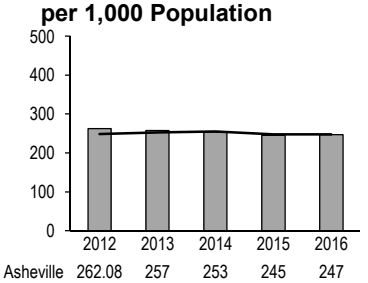
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	1.9849146	1.97	1.93	1.90	1.87
Average	2.08	1.94	2.03	1.99	1.87

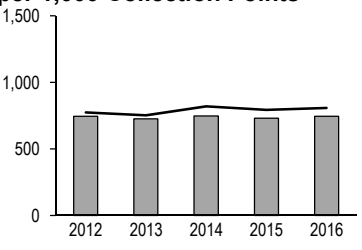
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	262.08	257	253	245	247
Average	248	253	255	248	248

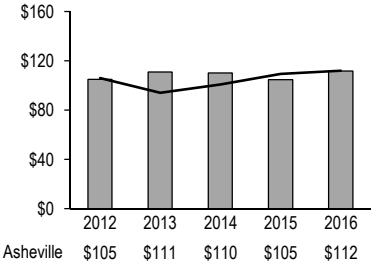
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Asheville	744	725	747	731	745
Average	774	753	819	793	807

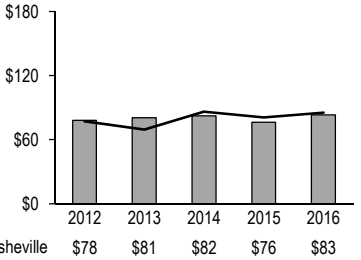
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



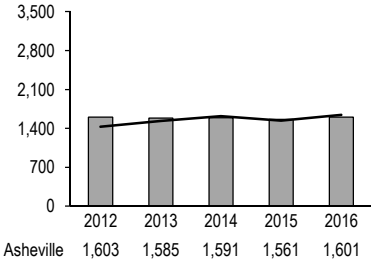
	2012	2013	2014	2015	2016
Asheville	$105	$111	$110	$105	$112
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Asheville	$78	$81	$82	$76	$83
Average	$77	$69	$86	$81	$85

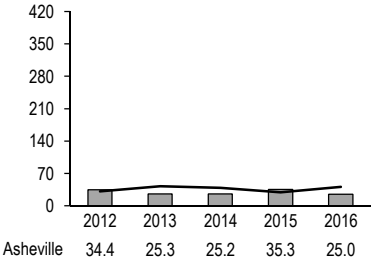
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Asheville	1,603	1,585	1,591	1,561	1,601
Average	1,430	1,531	1,619	1,537	1,645

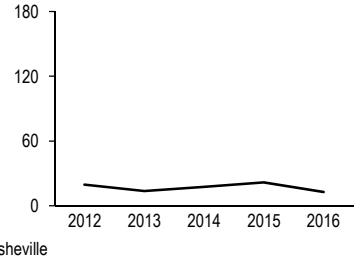
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Asheville	34.4	25.3	25.2	35.3	25.0
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Asheville					
Average	19.5	13.6	17.4	21.6	12.6

Burlington Residential Refuse

Fiscal Year 2015–16

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 nineteen miles.

The city collected 12,872 tons of residential refuse during FY 2015–16, at a cost of $105 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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Collection	6.0
FTE Positions—Other	3.0
Type of Equipment	4 automated packers 1 packers
Size of Crews (most commonly used)	1 & 2 person
Weekly Routes	16
Average Distance to Disposal Site	19 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)	17,198
Tons Collected	12,872
Monthly Service Fee	$6.00

Full Cost Profile

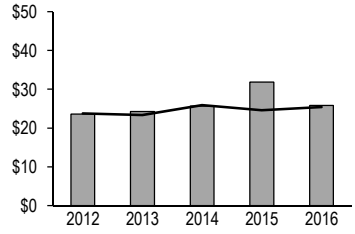
Cost Breakdown by Percentage	
Personal Services	38.2%
Operating Costs	39.8%
Capital Costs	22.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$514,053
Operating Costs	$536,822
Capital Costs	$296,495
TOTAL	$1,347,370

Burlington Residential Refuse Collection

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

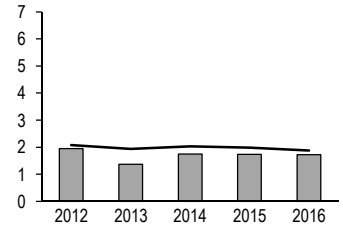
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Burlington	$23.60	$24.21	$25.64	$31.85	$25.79
Average	$23.72	$23.36	$25.88	$24.54	$25.38

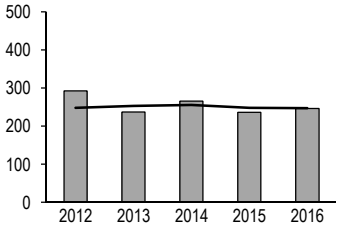
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	1.95	1.37	1.75	1.73	1.72
Average	2.08	1.94	2.03	1.99	1.87

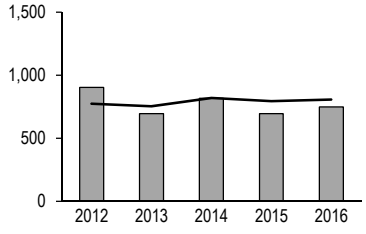
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	293	237	266	236	246
Average	248	253	255	248	248

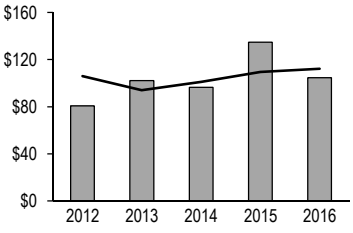
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Burlington	902	695	815	695	748
Average	774	753	819	793	807

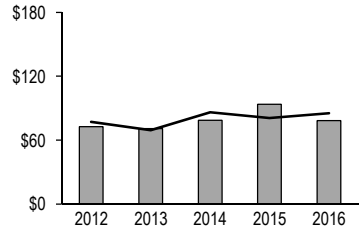
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



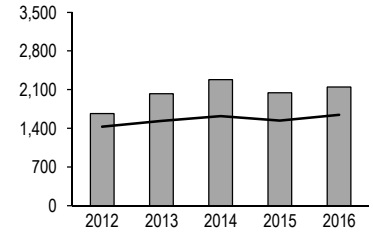
	2012	2013	2014	2015	2016
Burlington	$81	$102	$96	$135	$105
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Burlington	$73	$71	$79	$94	$78
Average	$77	$69	$86	$81	$85

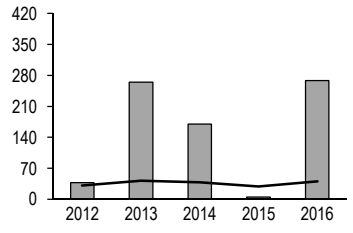
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Burlington	1,667	2,024	2,278	2,045	2,145
Average	1,430	1,531	1,619	1,537	1,645

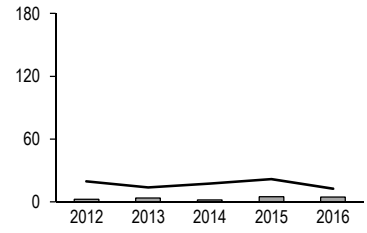
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Burlington	37.3	264.5	170.2	4.8	268.1
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Burlington	2.4	3.6	1.9	4.8	4.5
Average	19.5	13.6	17.4	21.6	12.6

Cary Residential Refuse

Fiscal Year 2015–16

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 $16.00 per month, covering both solid waste and recycling services.

Cary used eleven automated trucks, each with one driver, and two rear loaders, each with one driver and three collectors. A total of fifty-four collection routes were used during FY 2015–16. The average distance to the landfill was thirty miles, with each route averaging one and a half trips per day.

The town collected 34,724 tons of residential refuse during FY 2015–16, at a cost of $133 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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Collection	27.0
FTE Positions—Other	4.0
Type of Equipment	11 automated packers 2 packers
Size of Crews (most commonly used)	1 & 4 person
Weekly Routes	54
Average Distance to Disposal Site	30 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)	48,450
Tons Collected	34,724
Monthly Service Fee	$16.00 per month

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	43.9%
Operating Costs	41.9%
Capital Costs	14.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,021,504
Operating Costs	$1,926,886
Capital Costs	$654,255
TOTAL	$4,602,645

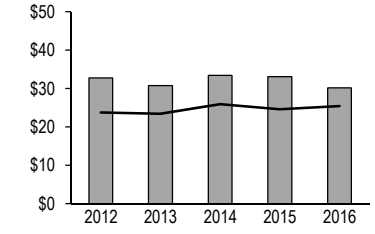
Cary

Residential Refuse Collection

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

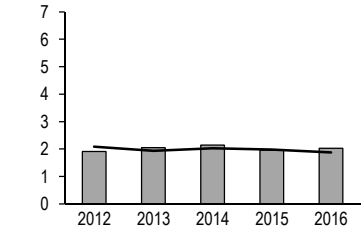
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Cary	$32.69	$30.68	$33.38	$33.04	$30.16
Average	$23.72	$23.36	$25.88	$24.54	$25.38

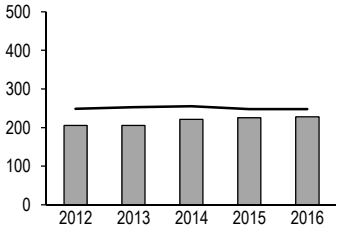
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	1.92	2.05	2.14	1.96	2.03
Average	2.08	1.94	2.03	1.99	1.87

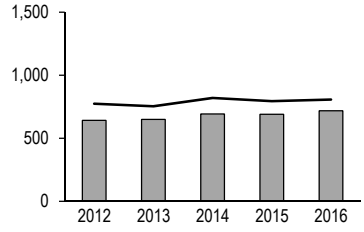
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Cary	205	205	222	225	228
Average	248	253	255	248	248

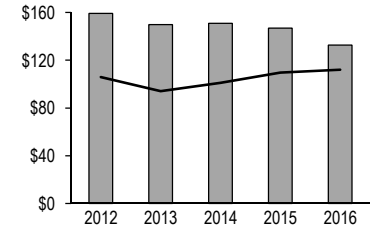
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Cary	642	648	693	690	717
Average	774	753	819	793	807

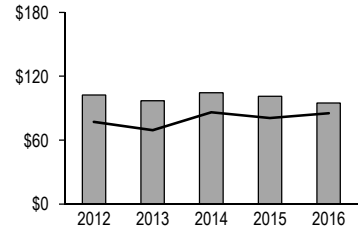
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



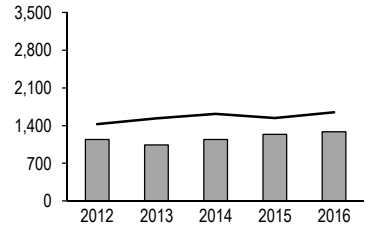
	2012	2013	2014	2015	2016
Cary	$159	$150	$151	$147	$133
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Cary	$102	$97	$104	$101	$95
Average	$77	$69	$86	$81	$85

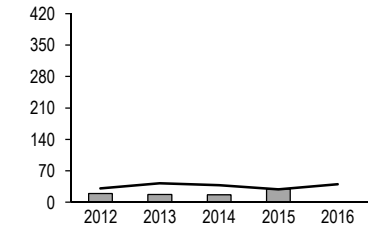
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Cary	1,143	1,043	1,145	1,236	1,286
Average	1,430	1,531	1,619	1,537	1,645

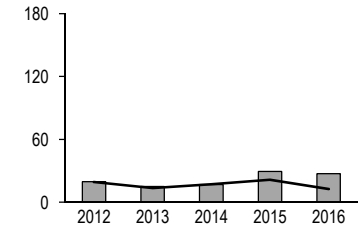
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Cary	19.6	17.1	16.8	29.3	
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Cary	19.6	15.2	16.8	29.3	27.4
Average	19.5	13.6	17.4	21.6	12.6

Chapel Hill — Residential Refuse

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Chapel Hill residential refuse collection is performed by the Solid Waste Services Division under the Public Works Department. The Town provides weekly household waste collection Mondays and Tuesdays with no fees charged.

Residential refuse is collected by seven 3-person crews using rear packers two days per week. The packer crews are staffed with three persons, one driver and two collectors. The trucks average one trip to the transfer station with the distance averaging 18 miles one way. A lift gate truck is also used to collect bulky items and electronics for a fee five days per week running two routes per day. Two pickup trucks are also used to collect medical exemptions, pedestrian trash cans, and streets not accessible to rear packers with one truck running seven days per week and the other running two days per week.

The town collected 6,673 tons of residential refuse during the fiscal year at a cost of $287 per ton or $159 per collection point. The cost does not include the disposal cost of $41 per ton at the transfer station for the tipping fee. Residents receive one roll-out cart at no charge. Residents can also purchase their own trash cans, but these must be 32 gallons or smaller and weigh less than 60 pounds when full.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

The out-of-town transfer station is the primary disposal location for Chapel Hill. Orange County had the highest waste reduction rate (64 percent) in North Carolina in FY 2014–15. The town provides special exemptions for backyard collections for 475 collection points, which represents 3.94 percent of the total collection points.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	12.7
FTE Positions—Other	1.1
Type of Equipment	7 packers 1 Lift-Gate Truck and 2 Pickups
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	28
Average Distance to Disposal Site	18 miles
Average Daily Route 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)	12,063
Tons Collected	6,673
Monthly Service Fee	No

Full Cost Profile

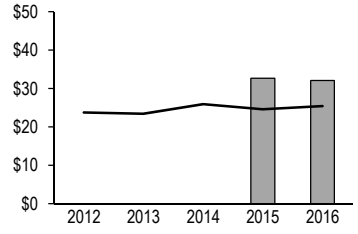
Cost Breakdown by Percentage	
Personal Services	41.0%
Operating Costs	50.3%
Capital Costs	8.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$784,653
Operating Costs	$961,403
Capital Costs	$166,511
TOTAL	$1,912,567

Chapel Hill — Residential Refuse Collection

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

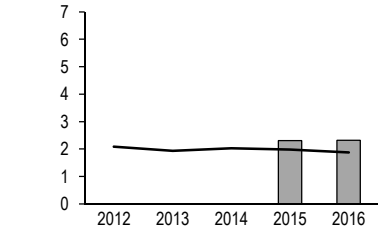
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Chapel Hill				$32.63	$32.09
Average	$23.72	$23.36	$25.88	$24.54	$25.38

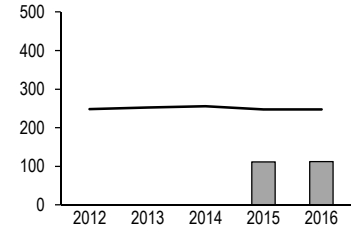
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				2.31	2.32
Average	2.08	1.94	2.03	1.99	1.87

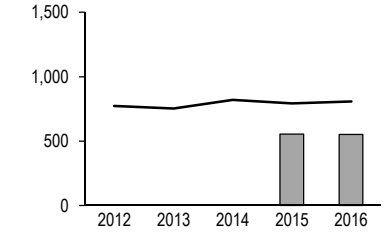
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				111	112
Average	248	253	255	248	248

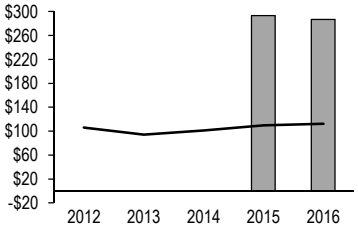
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill				556	553
Average	774	753	819	793	807

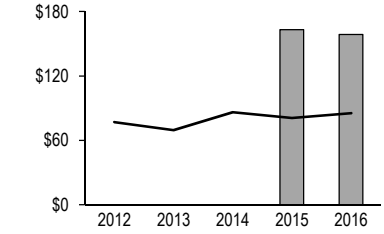
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



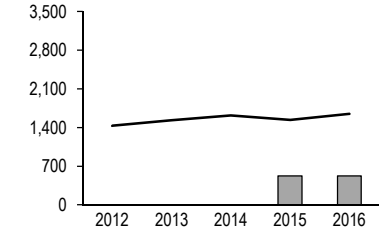
	2012	2013	2014	2015	2016
Chapel Hill				$293	$287
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Chapel Hill				$163	$159
Average	$77	$69	$86	$81	$85

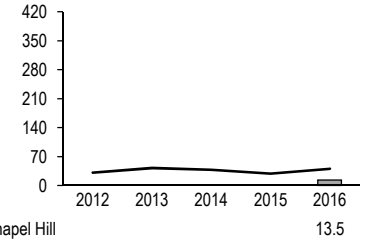
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Chapel Hill				523	525
Average	1,430	1,531	1,619	1,537	1,645

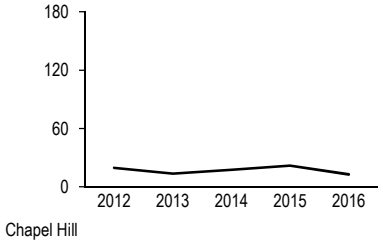
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill					13.5
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill					
Average	19.5	13.6	17.4	21.6	12.6

Charlotte — Residential Refuse

Fiscal Year 2015–16

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 charges an annual fee of $25 for refuse services which is paid on the property tax bill; the fee applies to both collection and disposal costs and is meant to be just a portion of cost recovery for services.

City crews are composed primarily of one driver, each operating an automated packer. There were fifty-seven of these crews for FY 2015–16. 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 2015–16, with an average of 1.24 trips to the landfill per day per route at an average one-way distance of twenty-two 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 179,827 tons of residential refuse during the fiscal year, at a cost of $93 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 did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

Charlotte is highly automated in the area of residential refuse collection. It considers all complaints to be valid complaints.

Charlotte's Solid Waste Services division has been focused on improving customer service since FY 2013–14, explaining the drop in complaints.

Municipal Profile

Population (OSBM 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	79.0
FTE Positions—Other	7.0
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	22 miles
Average Daily Trips to Disposal Site	1.24
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Residential Customers (number represents collection points)	215,674
Tons Collected	179,827
Annual Service Fee	$25 per year

Full Cost Profile

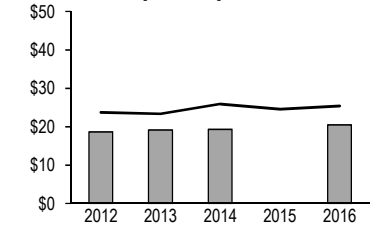
Cost Breakdown by Percentage	
Personal Services	32.3%
Operating Costs	49.0%
Capital Costs	18.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,423,189
Operating Costs	$8,213,044
Capital Costs	$3,140,838
TOTAL	$16,777,071

Charlotte Residential Refuse Collection

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

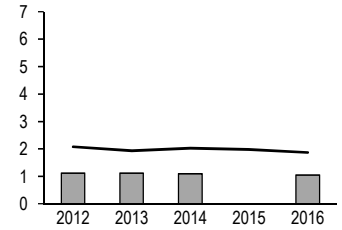
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Charlotte	$18.60	$19.16	$19.31		$20.50
Average	$23.72	$23.36	$25.88	$24.54	$25.38

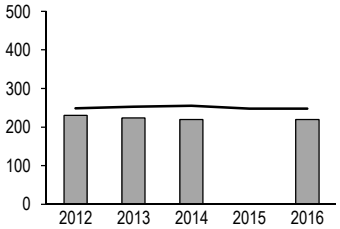
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	1.12	1.12	1.10		1.05
Average	2.08	1.94	2.03	1.99	1.87

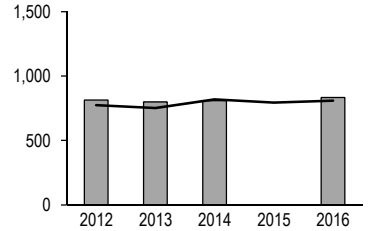
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte	230	224	220		220
Average	248	253	255	248	248

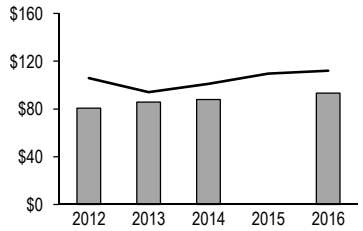
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	813	800	809		834
Average	774	753	819	793	807

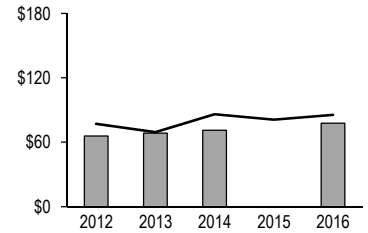
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



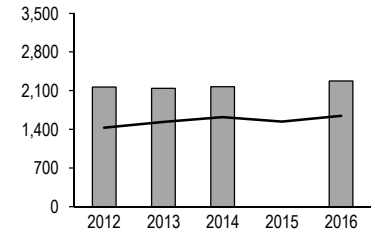
	2012	2013	2014	2015	2016
Charlotte	$81	$86	$88		$93
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Charlotte	$66	$69	$71		$78
Average	$77	$69	$86	$81	$85

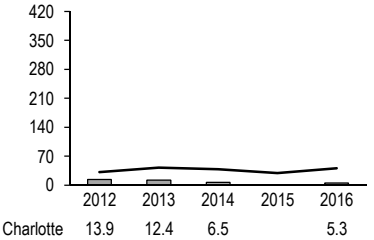
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Charlotte	2,165	2,140	2,168		2,276
Average	1,430	1,531	1,619	1,537	1,645

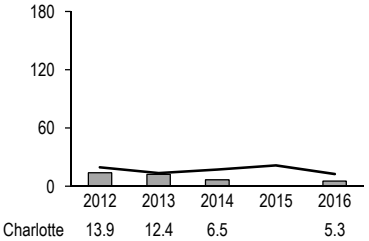
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	13.9	12.4	6.5		5.3
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	13.9	12.4	6.5		5.3
Average	19.5	13.6	17.4	21.6	12.6

Concord Residential Refuse

Fiscal Year 2015–16

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 $1.74 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 contractor serviced twenty-five collection routes each week, 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 24,888 tons of residential refuse during the fiscal year, at a cost of $84 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.

Concord discontinued its old system, which required citizens to schedule the collection of bulky items. Too many collections were not called in, resulting in bulky items being left curbside for days and generating complaints. The drop in complaints in FY 2013–14 was the result of a new system where the city scouts out items to be picked up and citizens are not required to call in. Pickup is improved and additional costs for the scouting have been offset by savings from avoided costs through improved collection efficiencies.

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Collection	0.54 City
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)	30,154
Tons Collected	24,888
Monthly Service Fee	No

Full Cost Profile

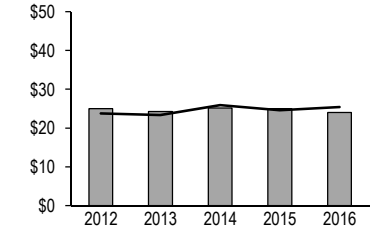
Cost Breakdown by Percentage	
Personal Services	6.0%
Operating Costs	93.8%
Capital Costs	0.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$124,653
Operating Costs	$1,964,612
Capital Costs	$4,932
TOTAL	$2,094,197

Concord Residential Refuse Collection

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

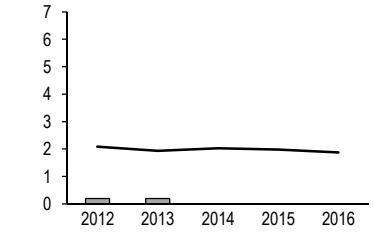
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Concord	$25.02	$24.27	$25.16	$25.01	$24.04
Average	$23.72	$23.36	$25.88	$24.54	$25.38

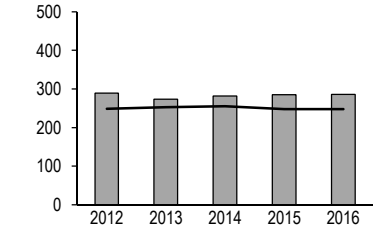
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	0.20	0.20			
Average	2.08	1.94	2.03	1.99	1.87

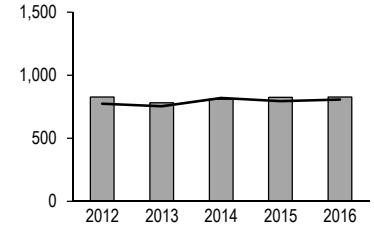
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Concord	289	274	281	285	286
Average	248	253	255	248	248

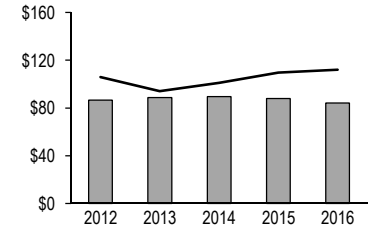
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Concord	825	782	808	823	825
Average	774	753	819	793	807

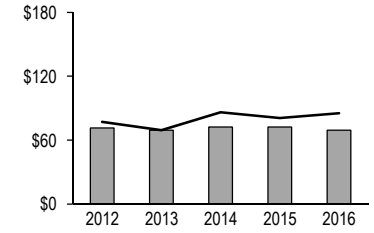
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



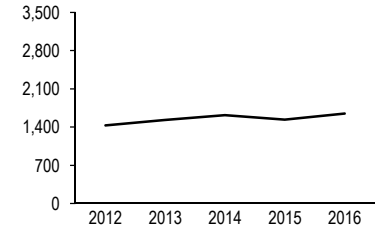
	2012	2013	2014	2015	2016
Concord	$87	$89	$89	$88	$84
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Concord	$72	$69	$72	$72	$69
Average	$77	$69	$86	$81	$85

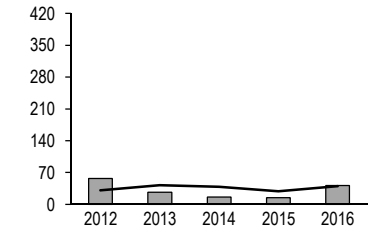
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Concord					
Average	1,430	1,531	1,619	1,537	1,645

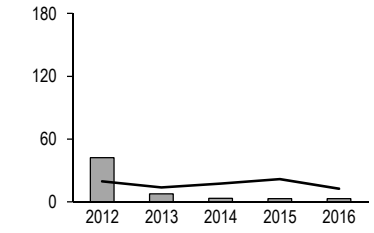
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Concord	56.9	26.7	16.0	14.7	41.2
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Concord	42.2	7.5	3.2	3.0	3.1
Average	19.5	13.6	17.4	21.6	12.6

Greensboro — Residential Refuse

Fiscal Year 2015–16

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 of refuse.

There were twenty-one city crews for FY 2015–16. Eighteen 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 57,124 tons of residential refuse during FY 2015–16, at a cost of $66 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.

Municipal Profile

Population (OSBM 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Positions—Collection	27.0
FTE Positions—Other	4.0
Type of Equipment	18 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)	84,302
Tons Collected	57,124
Monthly Service Fee	No

Full Cost Profile

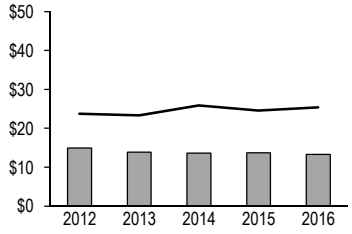
Cost Breakdown by Percentage	
Personal Services	32.7%
Operating Costs	67.3%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,226,524
Operating Costs	$2,528,089
Capital Costs	$0
TOTAL	$3,754,613

Greensboro Residential Refuse Collection

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

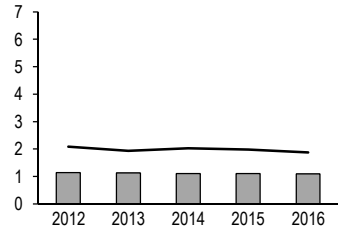
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Greensboro	$14.92	$13.89	$13.62	$13.66	$13.27
Average	$23.72	$23.36	$25.88	$24.54	$25.38

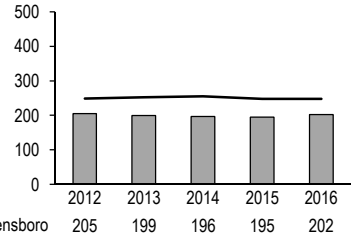
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	1.14	1.13	1.11	1.10	1.10
Average	2.08	1.94	2.03	1.99	1.87

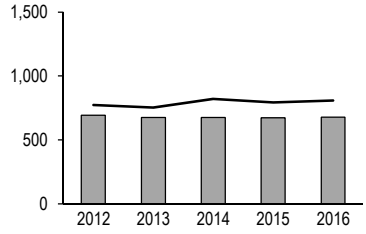
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	205	199	196	195	202
Average	248	253	255	248	248

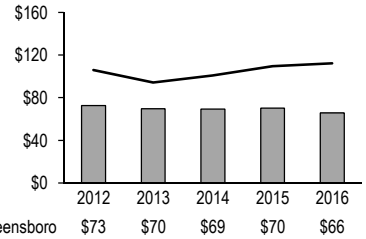
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	693	677	675	674	678
Average	774	753	819	793	807

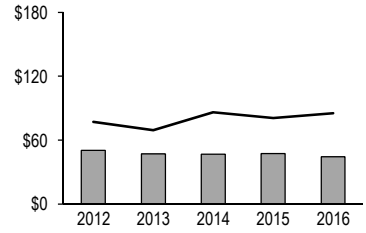
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



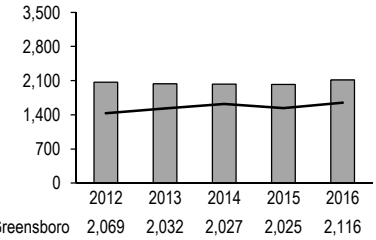
	2012	2013	2014	2015	2016
Greensboro	$73	$70	$69	$70	$66
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Greensboro	$50	$47	$47	$47	$45
Average	$77	$69	$86	$81	$85

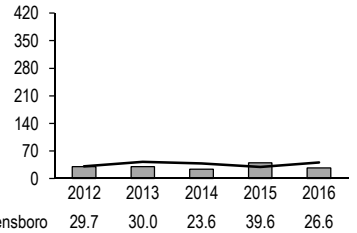
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Greensboro	2,069	2,032	2,027	2,025	2,116
Average	1,430	1,531	1,619	1,537	1,645

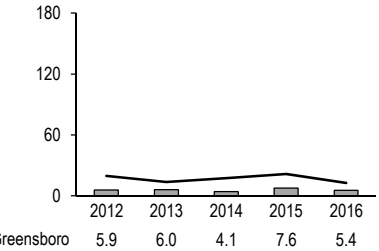
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	29.7	30.0	23.6	39.6	26.6
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	5.9	6.0	4.1	7.6	5.4
Average	19.5	13.6	17.4	21.6	12.6

Greenville Residential Refuse

Fiscal Year 2015–16

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 $44.30 per month, while curbside is priced at $15.25 per month. Most residents have chosen curbside. Curbside recycling of white goods and electronic is included in the residential refuse fee.

The city uses five one-person crews operating automated trucks and two trucks with a crew of three persons using read-loading vehicles. The crews run collection routes four days a week.

Twenty-eight collection routes were used during FY 2015–16, with an average of two trips to the transfer station per day per route. The average distance to the transfer station per route was five-and-a-half miles.

Greenville collected 27,995 tons of residential refuse during FY 2015–16, at a cost of $61 per ton. The cost per ton does not include the disposal cost of $33.50, representing the tipping fee at the transfer station.

Conditions Affecting Service, Performance, and Costs

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.

The apparent drop in the data in the graphs that 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 made substantial changes during FY 2013–14, including new trucks and new carts. Additionally, early retirement incentives were given to some employees to reduce staff size, which raised costs on a one-time basis.

Municipal Profile

Population (OSBM 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Collection	11.0
FTE Positions—Other	1.4
Type of Equipment	5 automated packers 2 packers
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	28
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 and backyard
Residential Customers (number represents collection points)	18,198
Tons Collected	27,955
Monthly Service Fee	$15.25 Curbside $44.30 Backyard

Full Cost Profile

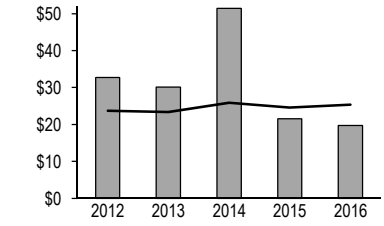
Cost Breakdown by Percentage	
Personal Services	42.4%
Operating Costs	37.7%
Capital Costs	19.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$735,796
Operating Costs	$655,166
Capital Costs	$344,664
TOTAL	$1,735,626

Greenville Residential Refuse Collection

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

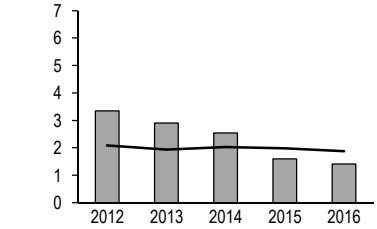
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Greenville	$32.77	$30.14	$51.48	$21.54	$19.73
Average	$23.72	$23.36	$25.88	$24.54	$25.38

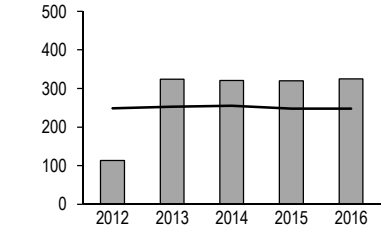
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	3.35	2.90	2.54	1.60	1.41
Average	2.08	1.94	2.03	1.99	1.87

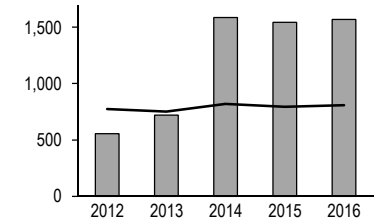
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	114	324	320	320	325
Average	248	253	255	248	248

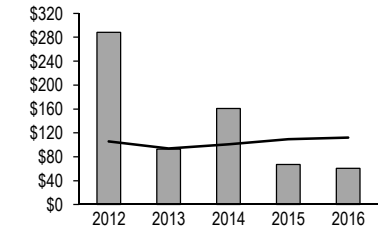
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greenville	554	719	1,587	1,543	1,569
Average	774	753	819	793	807

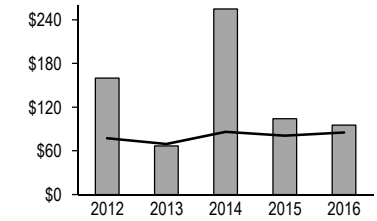
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



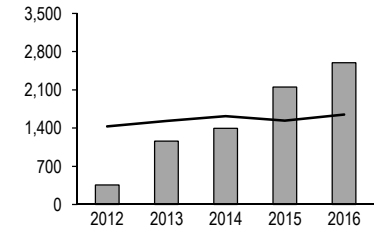
	2012	2013	2014	2015	2016
Greenville	$288	$93	$161	$67	$61
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Greenville	$160	$67	$255	$104	$95
Average	$77	$69	$86	$81	$85

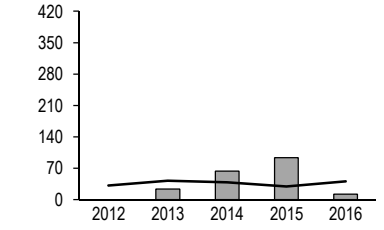
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Greenville	358	1,162	1,398	2,150	2,596
Average	1,430	1,531	1,619	1,537	1,645

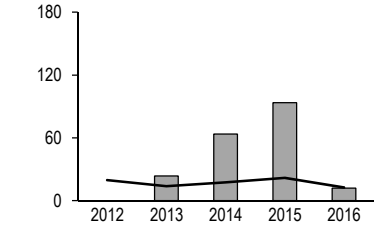
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greenville		23.6	63.5	93.7	11.8
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greenville		23.6	63.5	93.7	11.8
Average	19.5	13.6	17.4	21.6	12.6

Hickory — Residential Refuse

Fiscal Year 2015–16

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 $18.50 per cart was charged for residential refuse collection service during FY 2015–16. 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 2015–16, 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 7,061 tons of residential refuse during FY 2015–16, at a cost of $79 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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
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)	12,200
Tons Collected	7,061
Monthly Service Fee	$18.50 per cart

Full Cost Profile

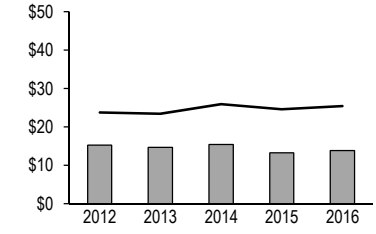
Cost Breakdown by Percentage	
Personal Services	42.2%
Operating Costs	38.7%
Capital Costs	19.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$234,999
Operating Costs	$215,650
Capital Costs	$106,235
TOTAL	$556,884

Hickory Residential Refuse Collection

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

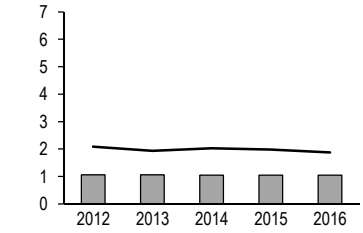
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Hickory	$15.22	$14.66	$15.38	$13.23	$13.80
Average	$23.72	$23.36	$25.88	$24.54	$25.38

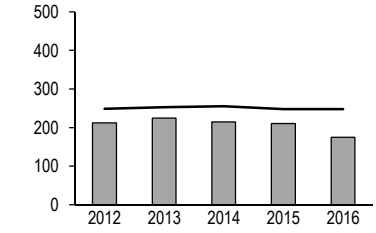
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	1.06	1.06	1.05	1.05	1.05
Average	2.08	1.94	2.03	1.99	1.87

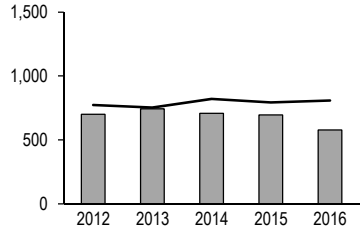
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	212	224	215	210	175
Average	248	253	255	248	248

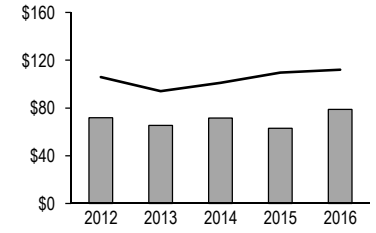
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Hickory	702	742	708	694	579
Average	774	753	819	793	807

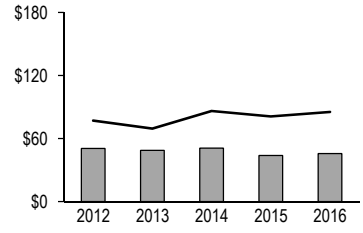
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



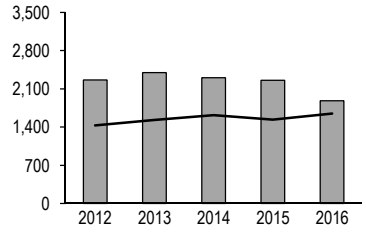
	2012	2013	2014	2015	2016
Hickory	$72	$65	$72	$63	$79
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Hickory	$50	$49	$51	$44	$46
Average	$77	$69	$86	$81	$85

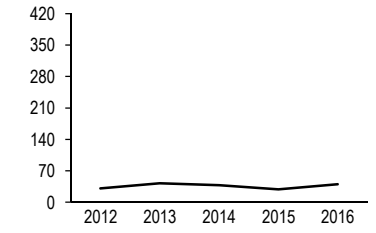
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Hickory	2,264	2,395	2,305	2,259	1,883
Average	1,430	1,531	1,619	1,537	1,645

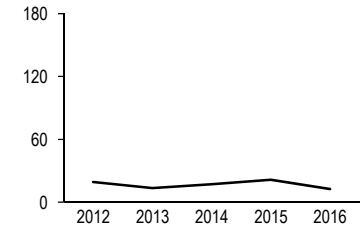
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Hickory					
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Hickory					
Average	19.5	13.6	17.4	21.6	12.6

High Point Residential Refuse

Fiscal Year 2015–16

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 is an $11 per month fee for residential refuse collection.

The city primarily collects residential refuse with nine automated trucks, each with one person. There are forty-four collection routes. The average number of trips to the landfill is two per day per route. The average distance to the landfill is ten miles.

The city collected 35,937 tons of residential refuse during FY 2015–16, at a cost of $71 per ton. The cost per ton does not include the disposal cost of $31, 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 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Collection	22.5
FTE Positions—Other	2.0
Type of Equipment	9 automated packers 3 special
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	44
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)	49,900
Tons Collected	35,937
Monthly Service Fee	$11.00

Full Cost Profile

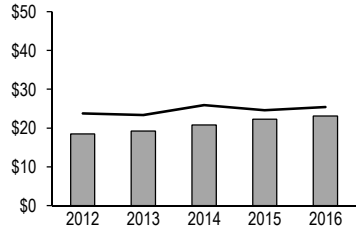
Cost Breakdown by Percentage	
Personal Services	46.9%
Operating Costs	30.1%
Capital Costs	23.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,190,586
Operating Costs	$763,241
Capital Costs	$584,941
TOTAL	$2,538,768

High Point Residential Refuse Collection

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

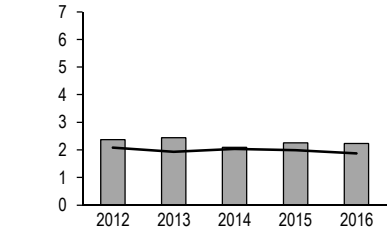
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
High Point	$18.49	$19.20	$20.76	$22.24	$23.13
Average	$23.72	$23.36	$25.88	$24.54	$25.38

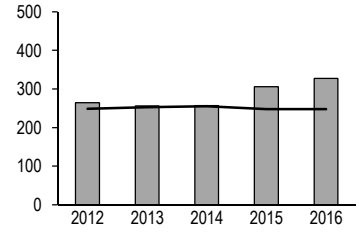
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	2.37	2.44	2.09	2.26	2.23
Average	2.08	1.94	2.03	1.99	1.87

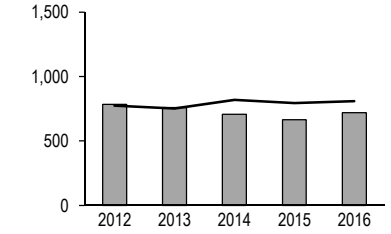
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
High Point	264	256	257	306	327
Average	248	253	255	248	248

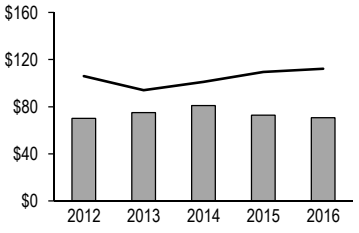
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
High Point	784	758	706	665	720
Average	774	753	819	793	807

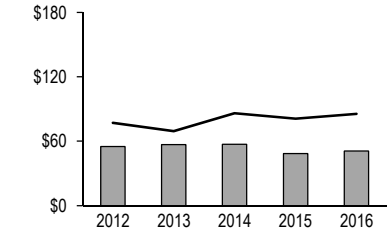
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



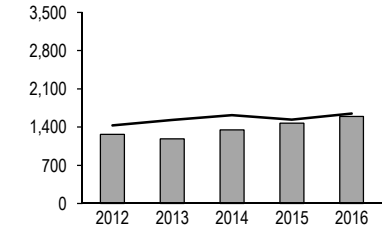
	2012	2013	2014	2015	2016
High Point	$70	$75	$81	$73	$71
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
High Point	$55	$57	$57	$48	$51
Average	$77	$69	$86	$81	$85

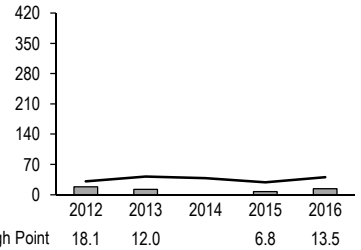
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
High Point	1,266	1,184	1,347	1,475	1,597
Average	1,430	1,531	1,619	1,537	1,645

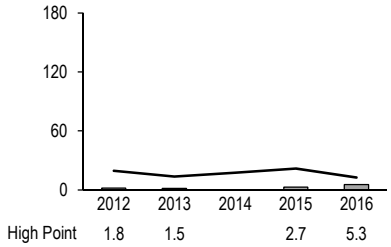
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
High Point	18.1	12.0		6.8	13.5
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
High Point	1.8	1.5		2.7	5.3
Average	19.5	13.6	17.4	21.6	12.6

Raleigh Residential Refuse

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Raleigh provides residential refuse collection service once per week at curbside. Backyard collection service is provided for customers who have been certified by a physician as being unable to move a cart to the curb and who have no able-bodied resident to provide assistance. The city charges a monthly fee of $11.45 for refuse collection.

The city employed twenty-four automated trucks with a single driver and ten crews of three on semi-automated trucks for primary collection. A total of 120 collection routes were used per week with a average truck making two trips per day to the disposal site covering a distance of ten miles.

Each customer has up to two ninety-five-gallon roll-out carts provided and paid for by the city. The city collected 98,029 tons of residential refuse during FY 2015–16, at a cost per ton of $219 or $175 per collection point. Not included in the cost per ton was a $30 landfill tipping fee.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Median Family Income U.S. Census 2010	$68,678

Service Profile

FTE Positions—Collection	76.0
FTE Positions—Other	5.0
Type of Equipment	24 automated packers 10 packersl
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	120
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)	123,045
Tons Collected	98,029
Monthly Service Fee	$11.45

Full Cost Profile

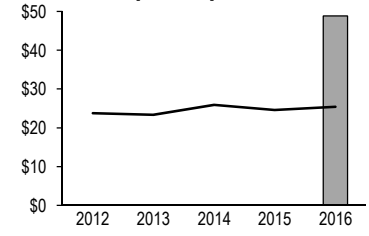
Cost Breakdown by Percentage	
Personal Services	29.8%
Operating Costs	53.0%
Capital Costs	17.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,413,012
Operating Costs	$11,392,040
Capital Costs	$3,703,304
TOTAL	$21,508,356

Raleigh Residential Refuse Collection

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

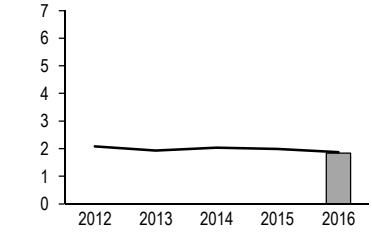
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Raleigh					$48.80
Average	$23.72	$23.36	$25.88	$24.54	$25.38

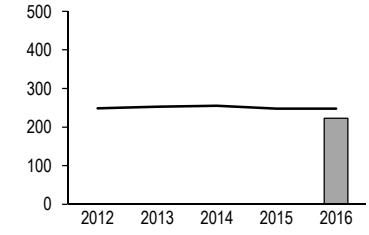
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					1.84
Average	2.08	1.94	2.03	1.99	1.87

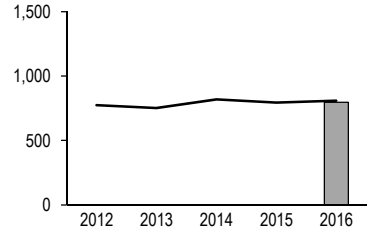
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					222
Average	248	253	255	248	248

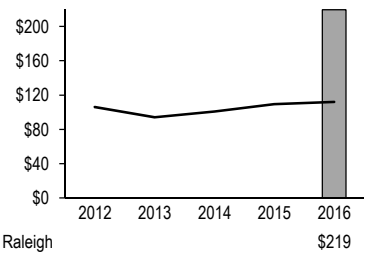
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					797
Average	774	753	819	793	807

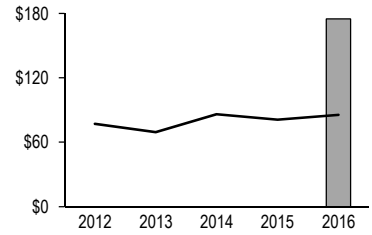
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



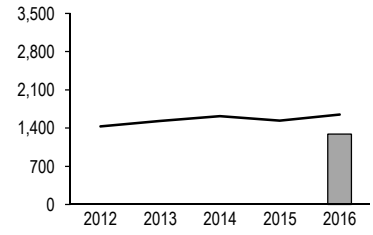
	2012	2013	2014	2015	2016
Raleigh					$219
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Raleigh					$175
Average	$77	$69	$86	$81	$85

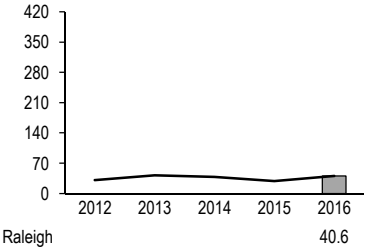
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Raleigh					1,290
Average	1,430	1,531	1,619	1,537	1,645

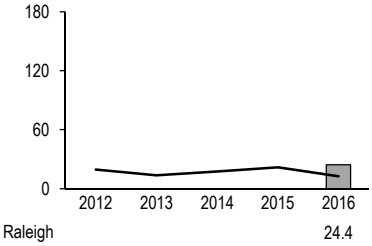
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					40.6
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					24.4
Average	19.5	13.6	17.4	21.6	12.6

Salisbury Residential Refuse

Fiscal Year 2015–16

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 $15.12 for all solid waste collection.

The city used one-person crews FY 2015–16 typically in four trucks. Fifteen collection routes were serviced, with an average of one ten-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 8,694 tons of residential refuse during FY 2015–16, at a cost per ton of $86. Not included in the cost per ton was a $36 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. The city is relying mostly on one-arm collection trucks.

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 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Collection	5.0
FTE Positions—Other	1.0
Type of Equipment	3 automated packers 1 packer
Size of Crews (most commonly used)	1 & 2 person
Weekly Routes	15
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)	11,095
Tons Collected	8,694
Monthly Service Fee	$15.12

Full Cost Profile

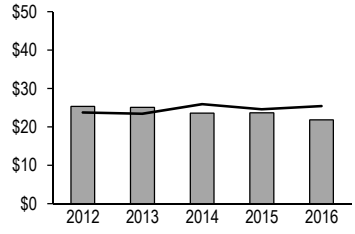
Cost Breakdown by Percentage	
Personal Services	48.3%
Operating Costs	23.7%
Capital Costs	28.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$360,326
Operating Costs	$176,883
Capital Costs	$209,157
TOTAL	$746,366

Salisbury Residential Refuse Collection

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

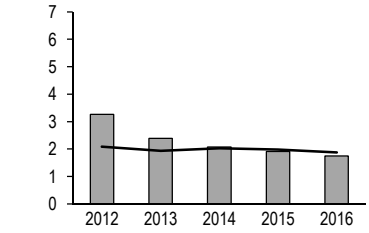
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Salisbury	$25.34	$25.05	$23.51	$23.66	$21.77
Average	$23.72	$23.36	$25.88	$24.54	$25.38

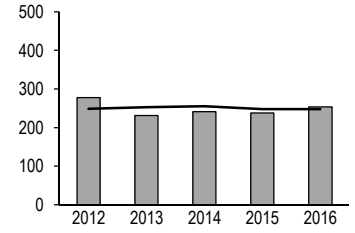
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	3.26	2.39	2.08	1.91	1.75
Average	2.08	1.94	2.03	1.99	1.87

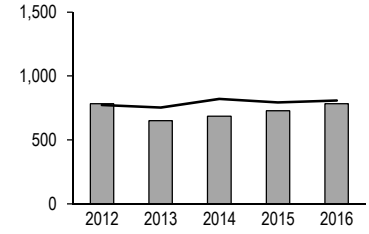
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	278	231	241	238	254
Average	248	253	255	248	248

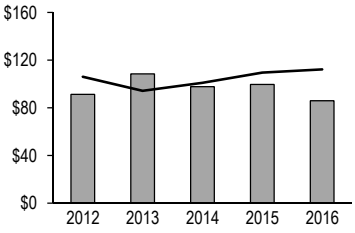
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	782	651	684	727	784
Average	774	753	819	793	807

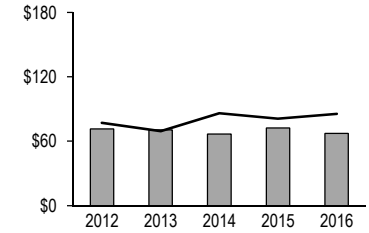
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



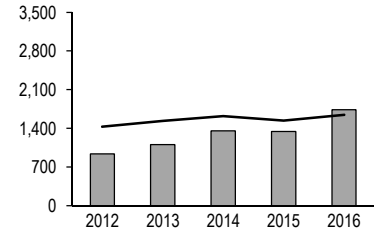
	2012	2013	2014	2015	2016
Salisbury	$91	$108	$98	$100	$86
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Salisbury	$71	$71	$67	$72	$67
Average	$77	$69	$86	$81	$85

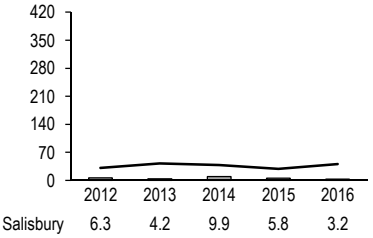
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Salisbury	935	1,105	1,355	1,345	1,739
Average	1,430	1,531	1,619	1,537	1,645

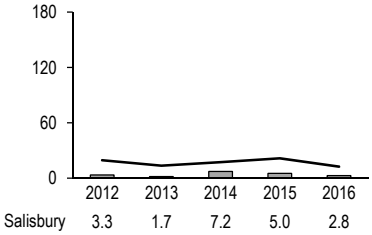
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	6.3	4.2	9.9	5.8	3.2
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	3.3	1.7	7.2	5.0	2.8
Average	19.5	13.6	17.4	21.6	12.6

Wilson — Residential Refuse

Fiscal Year 2015–16

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 $20.00 fee per household for residential refuse collection service.

During FY 2015–16, 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 2015–16. 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 $66 per ton. The cost per ton does not include the disposal cost of $39.32, 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 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
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)	17,975
Tons Collected	18,000
Monthly Service Fee	$20.00

Full Cost Profile

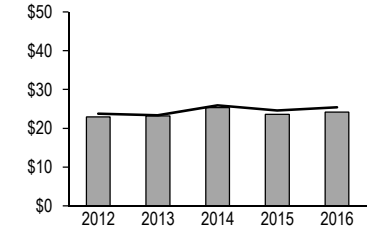
Cost Breakdown by Percentage	
Personal Services	43.8%
Operating Costs	33.9%
Capital Costs	22.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$523,003
Operating Costs	$404,847
Capital Costs	$266,240
TOTAL	$1,194,090

Wilson Residential Refuse Collection

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

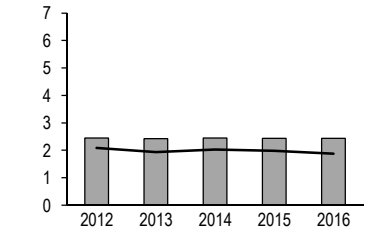
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Wilson	$22.92	$23.21	$25.33	$23.58	$24.19
Average	$23.72	$23.36	$25.88	$24.54	$25.38

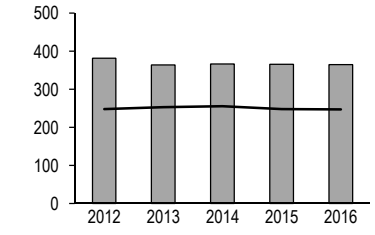
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	2.44	2.43	2.44	2.44	2.43
Average	2.08	1.94	2.03	1.99	1.87

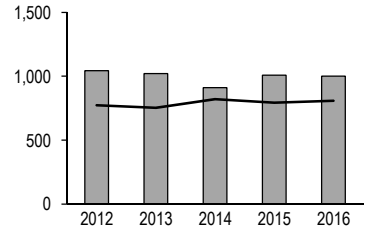
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	381	364	367	366	365
Average	248	253	255	248	248

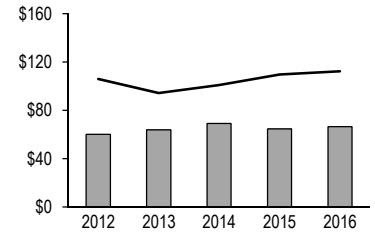
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	1,043	1,020	911	1,008	1,001
Average	774	753	819	793	807

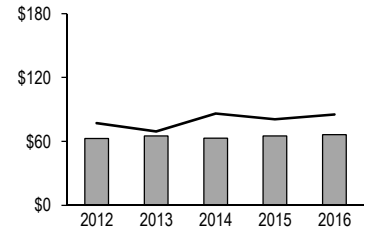
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



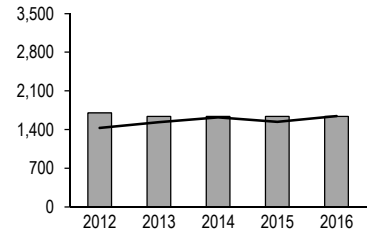
	2012	2013	2014	2015	2016
Wilson	$60	$64	$69	$64	$66
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Wilson	$63	$65	$63	$65	$66
Average	$77	$69	$86	$81	$85

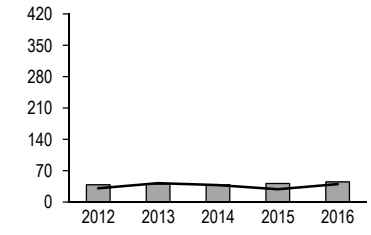
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Wilson	1,702	1,636	1,636	1,636	1,636
Average	1,430	1,531	1,619	1,537	1,645

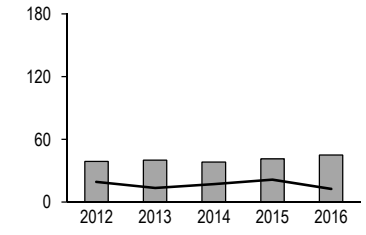
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	39.0	40.1	38.4	41.4	45.1
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	39.0	40.1	38.4	41.4	45.1
Average	19.5	13.6	17.4	21.6	12.6

Winston-Salem Residential Refuse

Fiscal Year 2015–16

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 ten 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 2015–16.

The city collected 57,064 tons of residential refuse during FY 2015–16 from 77,907 collection points. The cost per ton was $109, which does not include the tipping fee of $36 per ton. The city serviced 104 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 also is located in the back of the truck.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	82.0
FTE Positions—Other	3.0
Type of Equipment	10 automated packers 16 packers
Size of Crews (most commonly used)	1 & 3 person
Weekly Routes	104
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)	77,907
Tons Collected	57,064
Monthly Service Fee	No

Full Cost Profile

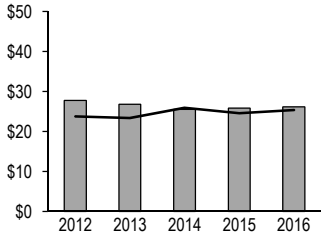
Cost Breakdown by Percentage	
Personal Services	53.2%
Operating Costs	31.4%
Capital Costs	15.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,323,542
Operating Costs	$1,958,366
Capital Costs	$961,627
TOTAL	$6,243,535

Winston-Salem Residential Refuse Collection

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

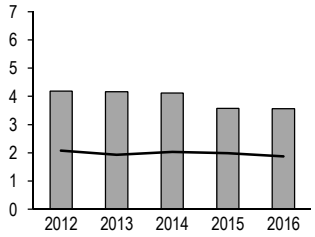
Resource Measures

Residential Refuse Collection Costs per Capita



	2012	2013	2014	2015	2016
Winston-Salem	$27.72	$26.77	$25.48	$25.85	$26.13
Average	$23.72	$23.36	$25.88	$24.54	$25.38

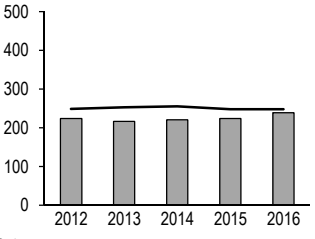
Residential Refuse FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	4.18	4.17	4.12	3.57	3.56
Average	2.08	1.94	2.03	1.99	1.87

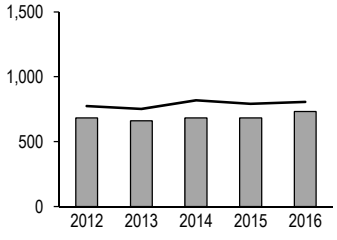
Workload Measures

Residential Refuse Tons per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	224	216	221	224	239
Average	248	253	255	248	248

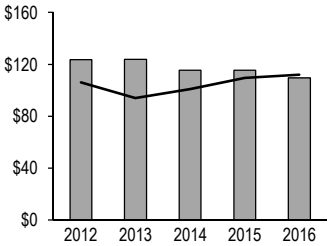
Residential Refuse Tons per 1,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	683	661	682	683	732
Average	774	753	819	793	807

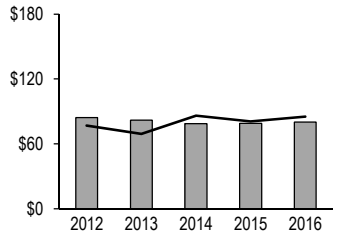
Efficiency Measures

Residential Refuse Collection Cost per Ton Collected



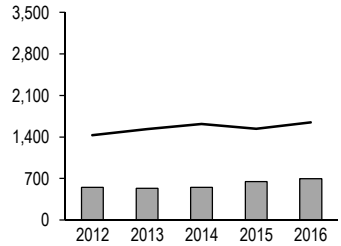
	2012	2013	2014	2015	2016
Winston-Salem	$124	$124	$115	$116	$109
Average	$106	$94	$101	$110	$112

Residential Refuse Collection Cost per Collection Point



	2012	2013	2014	2015	2016
Winston-Salem	$84	$82	$79	$79	$80
Average	$77	$69	$86	$81	$85

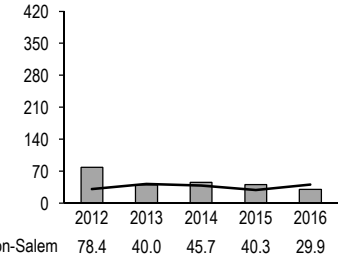
Refuse Tons Collected per Municipal Collection FTE



	2012	2013	2014	2015	2016
Winston-Salem	553	535	553	649	696
Average	1,430	1,531	1,619	1,537	1,645

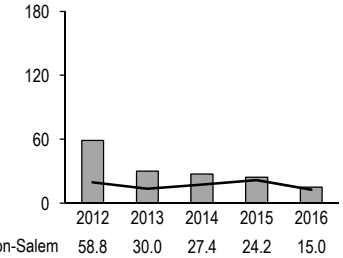
Effectiveness Measures

Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	78.4	40.0	45.7	40.3	29.9
Average	31.1	42.2	38.4	28.9	40.4

Valid Complaints per 1,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	58.8	30.0	27.4	24.2	15.0
Average	19.5	13.6	17.4	21.6	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 of 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	14,604	96%	4,014	25%	100%	NA
Asheville	0	1	1 x 2 weeks	No	29,651	82%	8,726	28%	100%	NA
Burlington	0	0	1 x 2 weeks	No	17,198	68%	2,815	18%	100%	NA
Cary	1	0	1 x 2 weeks	No	49,284	79%	11,463	25%	0%	12
Charlotte	0	12	1 x 2 weeks	No	213,924	42%	44,796	20%	85%	NA
Concord	0	1	1 x 2 weeks	No	30,154	76%	5,941	19%	100%	1.1
Greensboro	20	0	1 x 2 weeks	No	84,302	63%	18,056	24%	0%	15
Greenville	215	0	1 x week	No	17,408	NA	3,919	12%	0%	11
Hickory	2	0	1 x 2 weeks	Yes	12,200	67%	2,523	26%	100%	0.5
High Point	16	0	1 x 2 weeks	No	41,216	65%	10,029	22%	0%	6
Raleigh	2	2	1 x 2 weeks	No	183,172	NA	28,239	22%	0%	39
Salisbury	0	0	1 x 2 weeks	No	11,095	57%	1,519	15%	100%	NA
Wilson	0	0	1 x week	No	19,975	45%	1,586	8%	0%	7
Winston-Salem	11	0	1 x 2 weeks	No	75,039	58%	14,741	21%	100%	NA

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

Apex Household Recycling

Fiscal Year 2015–16

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 $2.41 fee per container per month. Most residents have a sixty-four-gallon cart though some have eighteen-gallon containers.

The following materials are collected:

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

Residents living within Apex are encouraged to participate in the curbside recycling program. The program serves 14,604 residences.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Median Family Income U.S. Census 2010	$97,201

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	14,604
Tons of Recyclables Collected	
Curbside	4,014
City Drop-Off Centers	0
Total Tons Collected	4,014
Monthly Service Fee	$2.41
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

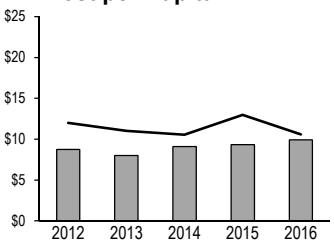
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$443,654
Capital Costs	$0
TOTAL	$443,654

Apex — Household Recycling

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

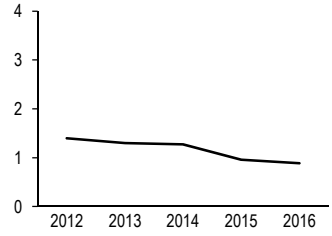
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Apex	$8.76	$8.00	$9.12	$9.34	$9.92
Average	$11.99	$11.02	$10.54	$12.97	$10.58

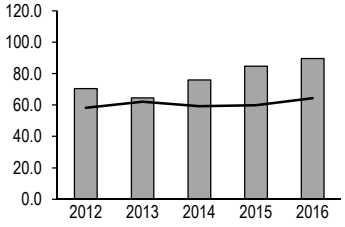
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex					
Average	1.40	1.30	1.28	0.96	0.89

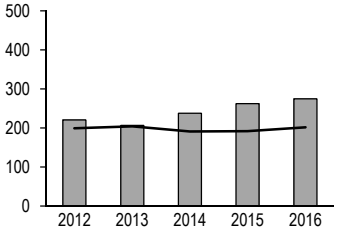
Workload Measures

Tons Recyclables Collected per 1,000 Population



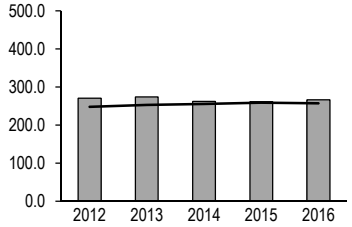
	2012	2013	2014	2015	2016
Apex	70.4	64.5	76.1	84.8	89.7
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Apex	220	207	238	262	275
Average	199	204	191	192	202

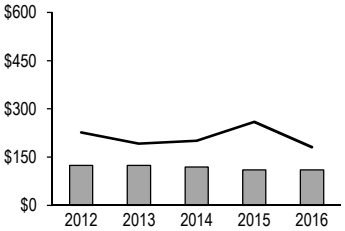
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Apex	270.8	274.0	262.2	261.8	266.6
Average	248.3	252.8	255.4	259.2	257.2

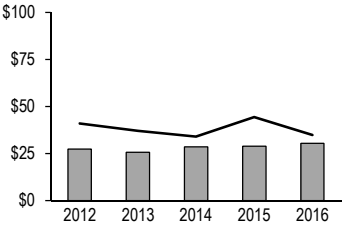
Efficiency Measures

Recycling Services Cost per Ton Collected



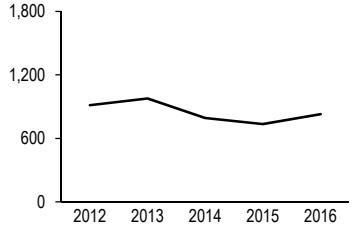
	2012	2013	2014	2015	2016
Apex	$124	$124	$120	$110	$111
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Apex	$27.41	$25.63	$28.52	$28.88	$30.38
Average	$41.01	$37.02	$33.99	$44.34	$34.79

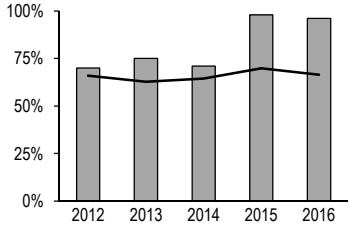
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Apex					
Average	915	976	792	737	830

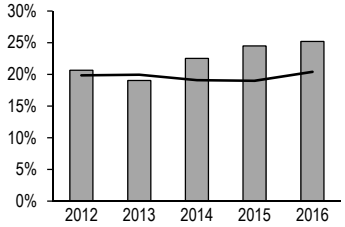
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Apex	70.0%	75.0%	71.0%	98.0%	96.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Apex	20.6%	19.1%	22.5%	24.5%	25.2%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Asheville Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The city offers curbside recycling service to all residential customers. The service was provided by contract during FY 2015–16 by Curbside Management Incorporated.

Asheville charged a $10.50 monthly fee for all solid waste services. Recyclables are collected using a two-bin system. The following materials are collected:

- mixed paper
- newspaper
- corrugated cardboard
- clear, green, and brown glass bottles
- all plastic 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 29,651 residences, with each residence receiving a ninety-five-gallon or in some cases a sixty-five-gallon cart. 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 is one drop-off center within Asheville. This center is set up for people who do not have curbside recycling pickup at their homes or businesses. Anyone can use this center to drop off their recycling during transfer station operating times.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Median Family Income	$53,350
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	1
Percentage of Service Contracted	100.0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	29,651
Tons of Recyclables Collected	
Curbside	8,726
City Drop-Off Centers	0
Total Tons Collected	8,726
Monthly Service Fee	No
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

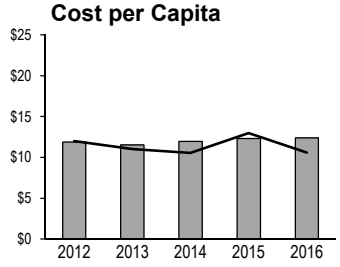
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$1,127,873
Capital Costs	$0
TOTAL	$1,127,873

Asheville Household Recycling

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

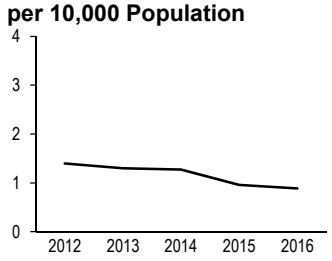
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Asheville	$11.90	$11.54	$11.97	$12.32	$12.41
Average	$11.99	$11.02	$10.54	$12.97	$10.58

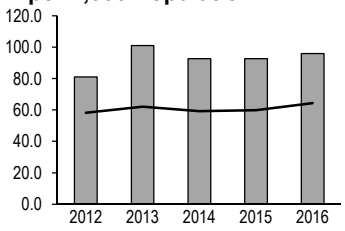
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville					
Average	1.40	1.30	1.28	0.96	0.89

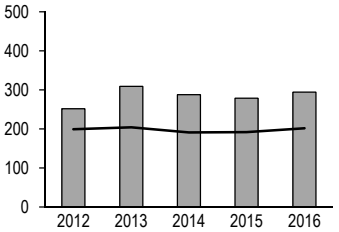
Workload Measures

Tons Recyclables Collected per 1,000 Population



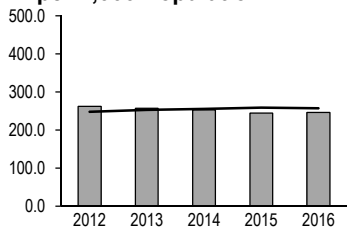
	2012	2013	2014	2015	2016
Asheville	81.2	101.0	92.8	92.7	96.0
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Asheville	252	309	288	279	294
Average	199	204	191	192	202

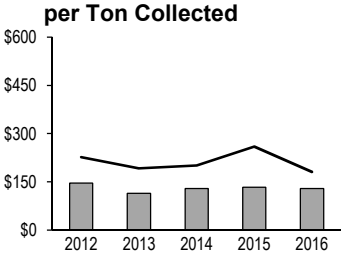
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	262.1	257.3	253.1	244.9	246.5
Average	248.3	252.8	255.4	259.2	257.2

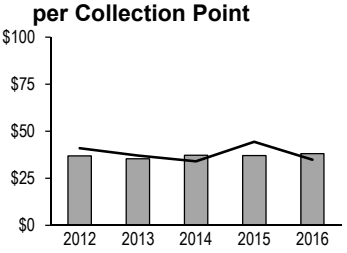
Efficiency Measures

Recycling Services Cost per Ton Collected



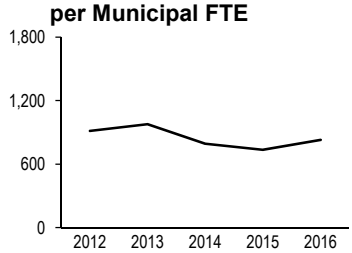
	2012	2013	2014	2015	2016
Asheville	$147	$114	$129	$133	$129
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Asheville	$36.92	$35.27	$37.20	$37.07	$38.04
Average	$41.01	$37.02	$33.99	$44.34	$34.79

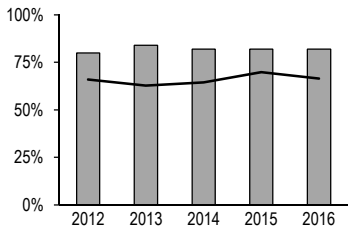
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Asheville					
Average	915	976	792	737	830

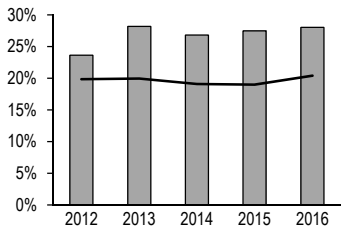
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Asheville	80.0%	84.0%	82.0%	82.0%	82.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Asheville	23.6%	28.2%	26.8%	27.4%	28.0%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Burlington Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Burlington offers curbside recycling to all city residents. The service was contracted through Waste Industries in FY 2015–16.

The city charges a monthly fee of $6.00 for recycling, which is included in the solid waste fee. Collection of recyclables is done every two weeks. Residents are provided with a ninety-five-gallon roll-out cart. 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.

Conditions Affecting Service, Performance, and Costs

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

Municipal Profile

Population (OSBM 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
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	0
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	17,198
Tons of Recyclables Collected	
Curbside	2,815
City Drop-Off Centers	0
Total Tons Collected	2,815
Monthly Service Fee	$6.00
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

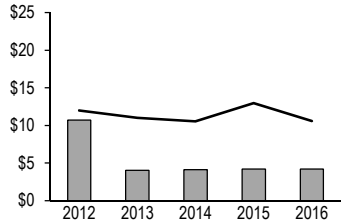
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$219,788
Capital Costs	$0
TOTAL	$219,788

Burlington — Household Recycling

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

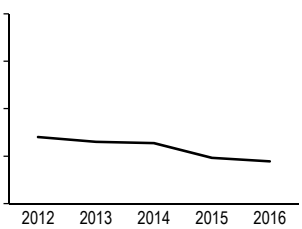
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Burlington	$10.73	$4.05	$4.13	$4.20	$4.21
Average	$11.99	$11.02	$10.54	$12.97	$10.58

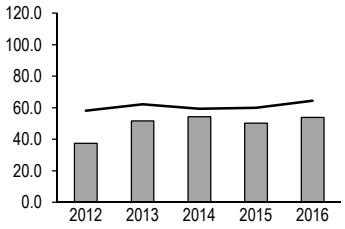
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington					
Average	1.40	1.30	1.28	0.96	0.89

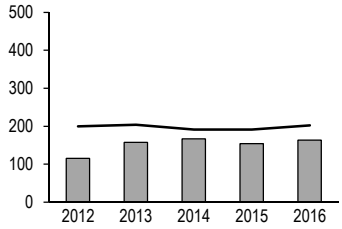
Workload Measures

Tons Recyclables Collected per 1,000 Population



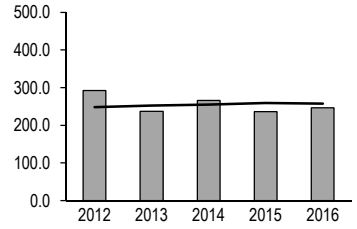
	2012	2013	2014	2015	2016
Burlington	37.4	51.6	54.3	50.2	53.9
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Burlington	115	158	166	154	164
Average	199	204	191	192	202

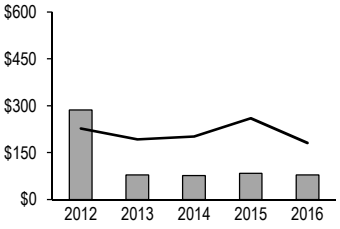
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	292.6	237.2	265.9	236.3	246.4
Average	248.3	252.8	255.4	259.2	257.2

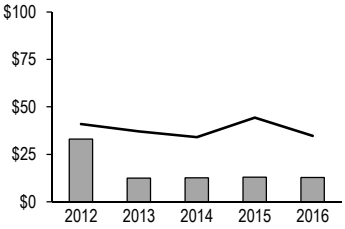
Efficiency Measures

Recycling Services Cost per Ton Collected



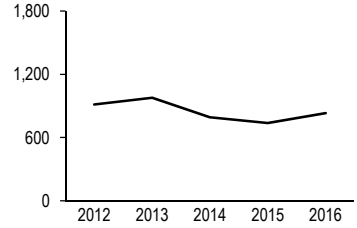
	2012	2013	2014	2015	2016
Burlington	$287	$78	$76	$84	$78
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Burlington	$33.06	$12.39	$12.66	$12.90	$12.78
Average	$41.01	$37.02	$33.99	$44.34	$34.79

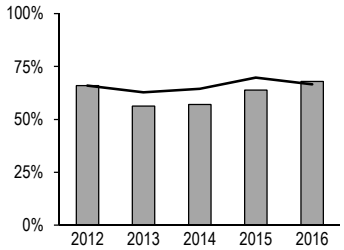
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Burlington					
Average	915	976	792	737	830

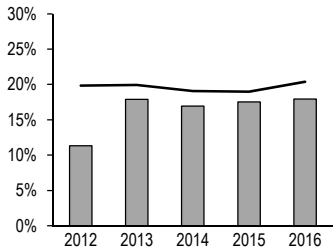
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Burlington	66.0%	56.3%	57.0%	63.8%	68.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Burlington	11.3%	17.9%	17.0%	17.5%	17.9%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Cary Household Recycling

Fiscal Year 2015–16

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 $16 fee, which covers both recycling and solid waste pickup. Citizens use a variety of different types of bins or roll-out carts.

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 Nos. 1, 2, 5, and 7 bottles
- used motor oil, electronics, and appliances on request.

The town collected 110,797 tons from the curbside collection and gathered 666 tons at its drop-off site. The town changed to commingled recycling at the curb during FY 2006–07, eliminating curbside sorting.

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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Median Family Income U.S. Census 2010	$108,956

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	49,284
Tons of Recyclables Collected	
Curbside	10,797
City Drop-Off Centers	666
Total Tons Collected	11,463
Monthly Service Fee	No
Revenue from Sale of Recyclables	$18,373
Sale Revenue as Percentage of Cost	0.8%

Full Cost Profile

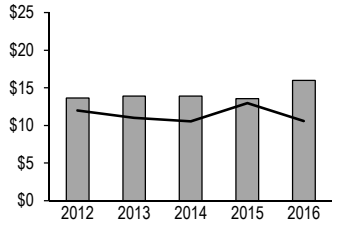
Cost Breakdown by Percentage	
Personal Services	37.9%
Operating Costs	43.4%
Capital Costs	18.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$926,905
Operating Costs	$1,059,473
Capital Costs	$456,156
TOTAL	$2,442,534

Cary — Household Recycling

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

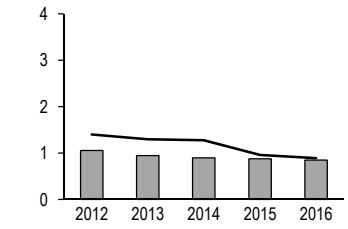
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Cary	$13.64	$13.90	$13.90	$13.57	$16.00
Average	$11.99	$11.02	$10.54	$12.97	$10.58

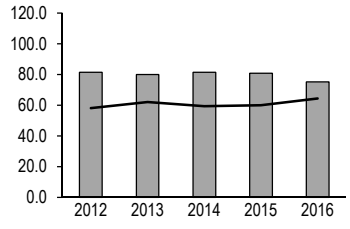
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	1.05	0.94	0.90	0.88	0.85
Average	1.40	1.30	1.28	0.96	0.89

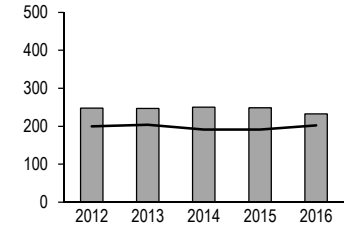
Workload Measures

Tons Recyclables Collected per 1,000 Population



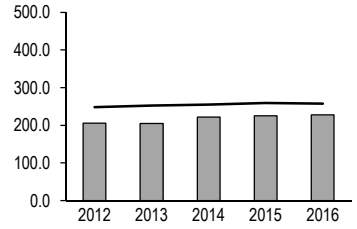
	2012	2013	2014	2015	2016
Cary	81.4	80.0	81.4	80.8	75.1
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Cary	248	247	250	249	233
Average	199	204	191	192	202

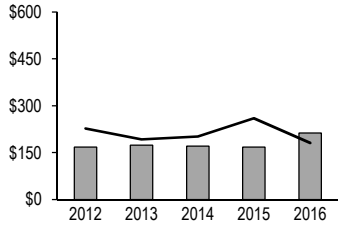
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Cary	205.4	205.1	221.5	225.1	227.5
Average	248.3	252.8	255.4	259.2	257.2

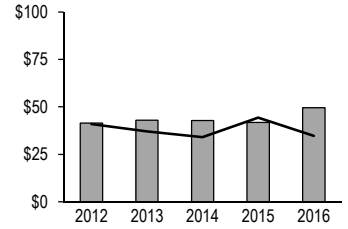
Efficiency Measures

Recycling Services Cost per Ton Collected



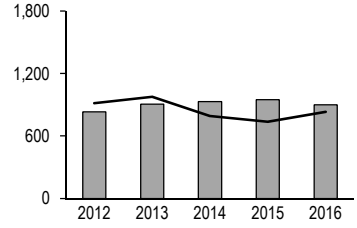
	2012	2013	2014	2015	2016
Cary	$168	$174	$171	$168	$213
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Cary	$41.50	$42.95	$42.75	$41.77	$49.56
Average	$41.01	$37.02	$33.99	$44.34	$34.79

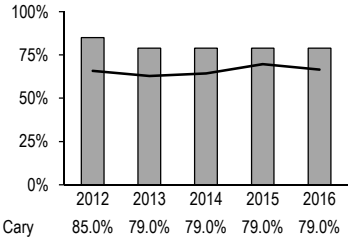
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Cary	832	904	930	947	900
Average	915	976	792	737	830

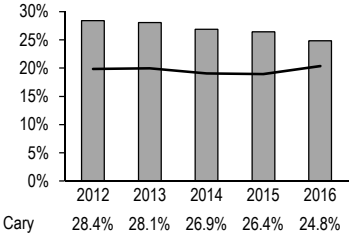
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Cary	85.0%	79.0%	79.0%	79.0%	79.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Cary	28.4%	28.1%	26.9%	26.4%	24.8%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Charlotte — Household Recycling

Fiscal Year 2015–16

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 $122,297 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

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

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.

During FY 2013–14, the recycling contractor implemented substantial route changes, leading to confusion and a rise in complaints.

Municipal Profile

Population (OSBM 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	Contractor
Number of City Drop-Off Centers	0
Other Drop-Off Centers	12
Percentage of Service Contracted	85%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	213,924
Tons of Recyclables Collected	
Curbside	44,796
City Drop-Off Centers	0
Total Tons Collected	44,796
Monthly Service Fee	No
Revenue from Sale of Recyclables	$122,297
Sale Revenue as Percentage of Cost	2.0%

Full Cost Profile

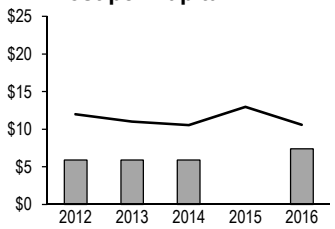
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	99.6%
Capital Costs	0.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$6,026,998
Capital Costs	$24,263
TOTAL	$6,051,261

Charlotte — Household Recycling

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

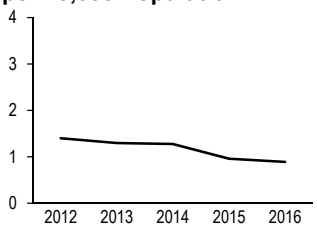
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Charlotte	$5.92	$5.90	$5.90		$7.39
Average	$11.99	$11.02	$10.54	$12.97	$10.58

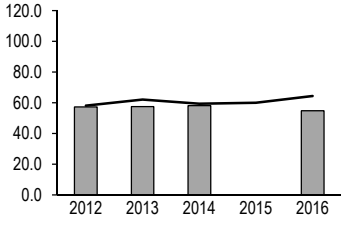
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte					
Average	1.40	1.30	1.28	0.96	0.89

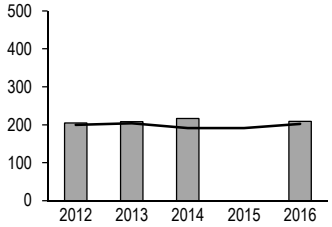
Workload Measures

Tons Recyclables Collected per 1,000 Population



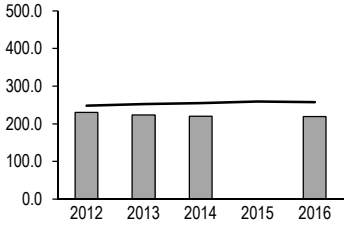
	2012	2013	2014	2015	2016
Charlotte	57.2	57.4	58.1		54.7
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	205	208	216		209
Average	199	204	191	192	202

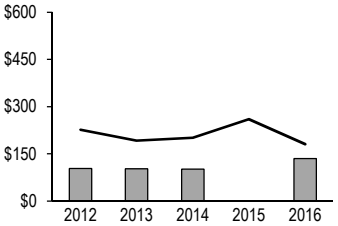
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte	230.3	223.6	219.8		219.7
Average	248.3	252.8	255.4	259.2	257.2

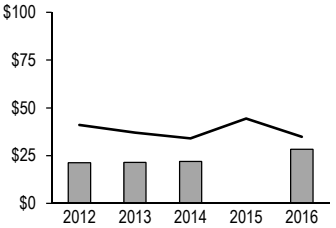
Efficiency Measures

Recycling Services Cost per Ton Collected



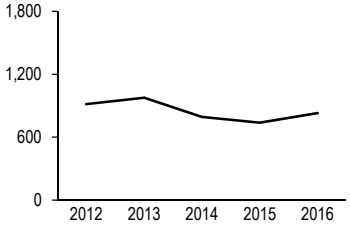
	2012	2013	2014	2015	2016
Charlotte	$103	$103	$101		$135
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Charlotte	$21.23	$21.43	$21.93		$28.29
Average	$41.01	$37.02	$33.99	$44.34	$34.79

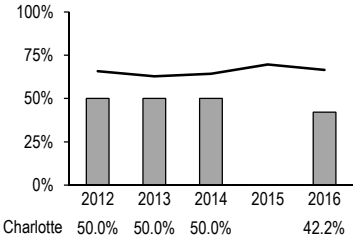
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Charlotte					
Average	915	976	792	737	830

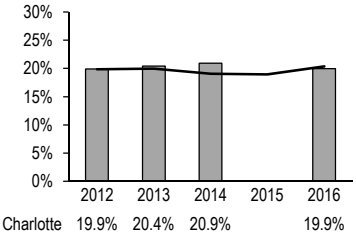
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Charlotte	50.0%	50.0%	50.0%		42.2%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Charlotte	19.9%	20.4%	20.9%		19.9%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Concord Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Concord provides biweekly curbside collection of recyclable materials from households. The city uses a contractor to provide recycling collection. Residents place materials into a ninety-five-gallon cart. 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 biweekly from each participating resident and delivered to a materials recovery facility (MRF) in Charlotte for separation and marketing.

The city received $134,219 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.

The set-out rate is calculated twice a year.

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Collection	1.1
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	30,154
Tons of Recyclables Collected	
Curbside	5,941
City Drop-Off Centers	0
Total Tons Collected	5,941
Monthly Service Fee	No
Revenue from Sale of Recyclables	$134,219
Sale Revenue as Percentage of Cost	15.5%

Full Cost Profile

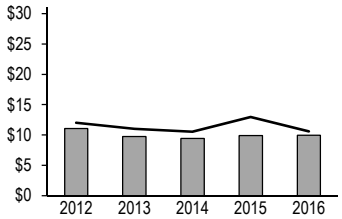
Cost Breakdown by Percentage	
Personal Services	14.6%
Operating Costs	82.9%
Capital Costs	2.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$127,014
Operating Costs	$718,808
Capital Costs	$21,631
TOTAL	$867,453

Concord Household Recycling

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

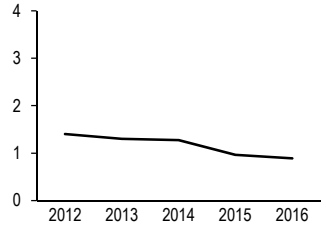
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Concord	$11.08	$9.76	$9.41	$9.91	$9.96
Average	$11.99	$11.02	$10.54	$12.97	$10.58

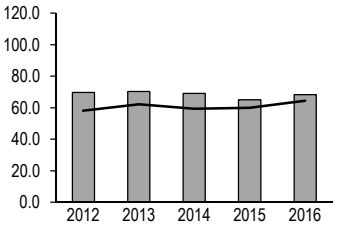
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord					
Average	1.40	1.30	1.28	0.96	0.89

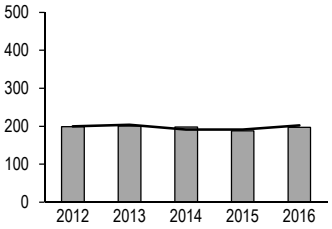
Workload Measures

Tons Recyclables Collected per 1,000 Population



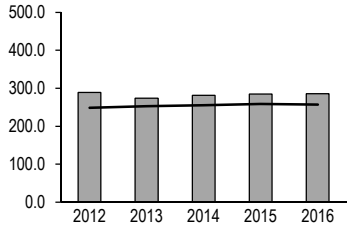
	2012	2013	2014	2015	2016
Concord	69.7	70.4	69.0	65.0	68.2
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Concord	199	201	198	188	197
Average	199	204	191	192	202

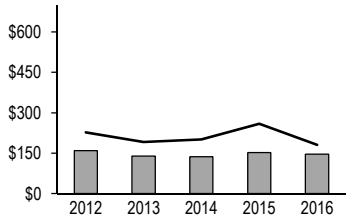
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Concord	288.9	273.7	281.4	284.6	285.6
Average	248.3	252.8	255.4	259.2	257.2

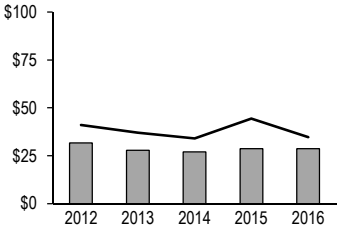
Efficiency Measures

Recycling Services Cost per Ton Collected



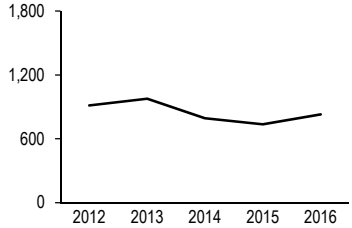
	2012	2013	2014	2015	2016
Concord	$159	$139	$136	$152	$146
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Concord	$31.67	$27.88	$27.03	$28.65	$28.77
Average	$41.01	$37.02	$33.99	$44.34	$34.79

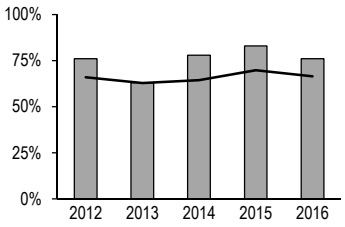
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Concord					
Average	915	976	792	737	830

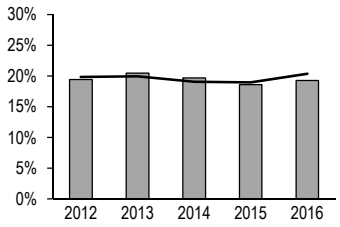
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Concord	76.0%	63.0%	78.0%	83.0%	76.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Concord	19.4%	20.4%	19.7%	18.6%	19.3%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Greensboro Household Recycling

Fiscal Year 2015–16

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-six or sixty-four-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 2015–16 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 2015–16 was $414,030 partially offsetting program costs. 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 bi-weekly basis.

Municipal Profile

Population (OSBM 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
Median Family Income	$52,752
U.S. Census 2010	

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	84,302
Tons of Recyclables Collected	
Curbside	18,056
City Drop-Off Centers	0
Total Tons Collected	18,056
Monthly Service Fee	No
Revenue from Sale of Recyclables	$414,030
Sale Revenue as Percentage of Cost	16.5%

Full Cost Profile

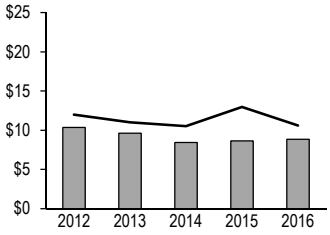
Cost Breakdown by Percentage	
Personal Services	35.6%
Operating Costs	64.4%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$891,456
Operating Costs	$1,615,353
Capital Costs	$0
TOTAL	$2,506,809

Greensboro Household Recycling

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

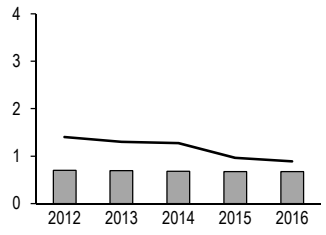
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Greensboro	$10.35	$9.64	$8.45	$8.66	$8.86
Average	$11.99	$11.02	$10.54	$12.97	$10.58

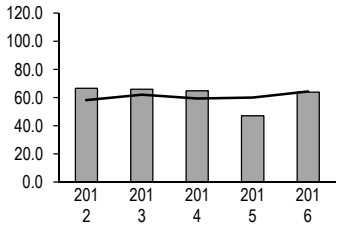
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	0.70	0.69	0.68	0.68	0.67
Average	1.40	1.30	1.28	0.96	0.89

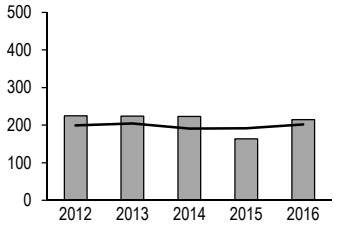
Workload Measures

Tons Recyclables Collected per 1,000 Population



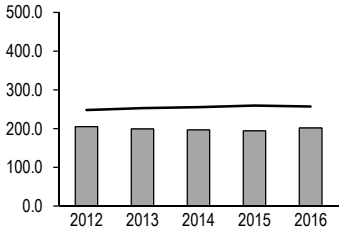
	2012	2013	2014	2015	2016
Greensboro	66.6	66.0	64.9	47.1	63.8
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	225	224	223	163	214
Average	199	204	191	192	202

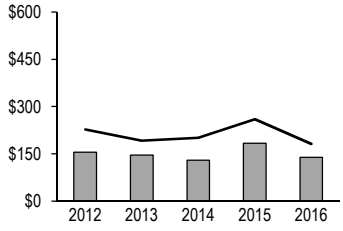
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	205.2	199.5	196.4	194.7	202.0
Average	248.3	252.8	255.4	259.2	257.2

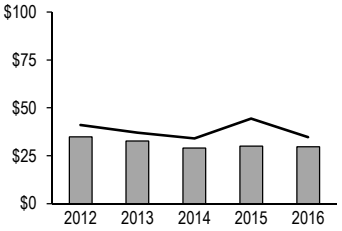
Efficiency Measures

Recycling Services Cost per Ton Collected



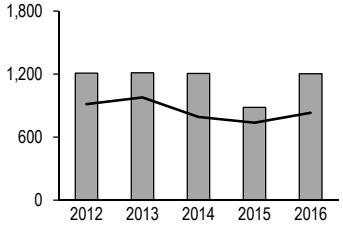
	2012	2013	2014	2015	2016
Greensboro	$155	$146	$130	$184	$139
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Greensboro	$34.95	$32.69	$29.04	$29.98	$29.74
Average	$41.01	$37.02	$33.99	$44.34	$34.79

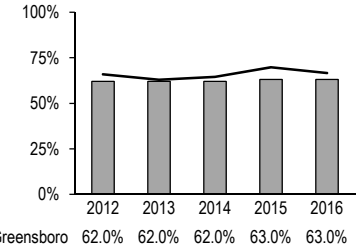
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Greensboro	1,208	1,211	1,205	882	1,204
Average	915	976	792	737	830

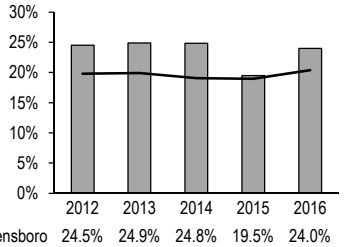
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Greensboro	62.0%	62.0%	62.0%	63.0%	63.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Greensboro	24.5%	24.9%	24.8%	19.5%	24.0%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Greenville Household Recycling

Fiscal Year 2015–16

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 over 200 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 that set out recyclables on a weekly basis.

The apparent drop in the graphs for collected tonnage in FY 2013–14 reports only items which were taken to the local material recovery facility. The drop appears to reflect more accurate reporting, excluding items such as concrete, tree limbs, and other material rather than actual service change in recyclables.

Greenville introduced new recycling carts in FY 2013–14, which generated service complaints during the transition period.

Municipal Profile

Population (OSBM 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Collection	11.0
FTE Positions—Other	1.2
Number of City Drop-Off Centers	215
Other Drop-Off Centers	0
Percentage of Service Contracted	0%
Collection Frequency	1 x week
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	17,408
Tons of Recyclables Collected	
Curbside	3,919
City Drop-Off Centers	0
Total Tons Collected	3,919
Monthly Service Fee	No
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

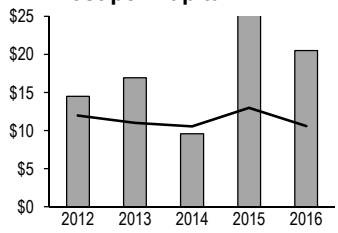
Cost Breakdown by Percentage	
Personal Services	40.6%
Operating Costs	40.6%
Capital Costs	18.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$731,863
Operating Costs	$731,695
Capital Costs	$339,104
TOTAL	$1,802,662

Greenville Household Recycling

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

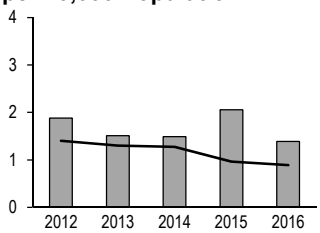
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Greenville	$14.50	$16.92	$9.61	$27.67	$20.49
Average	$11.99	$11.02	$10.54	$12.97	$10.58

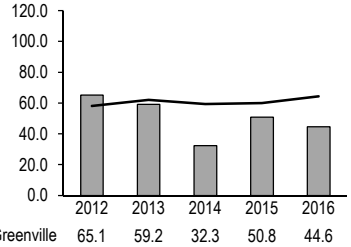
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	1.88	1.51	1.49	2.06	1.39
Average	1.40	1.30	1.28	0.96	0.89

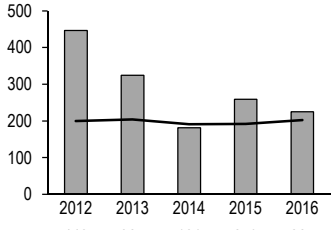
Workload Measures

Tons Recyclables Collected per 1,000 Population



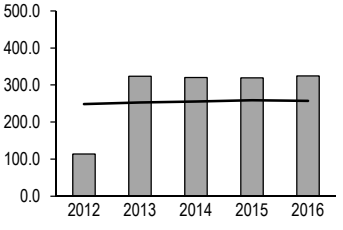
	2012	2013	2014	2015	2016
Greenville	65.1	59.2	32.3	50.8	44.6
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greenville	446	325	181	259	225
Average	199	204	191	192	202

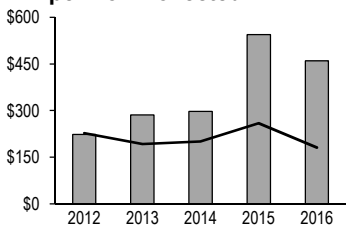
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	113.6	323.7	320.4	319.7	324.7
Average	248.3	252.8	255.4	259.2	257.2

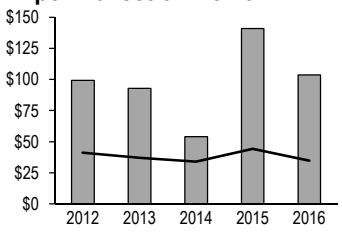
Efficiency Measures

Recycling Services Cost per Ton Collected



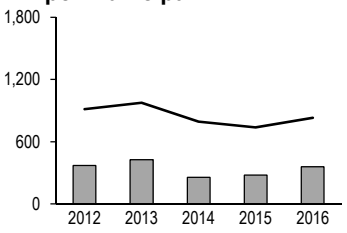
	2012	2013	2014	2015	2016
Greenville	$223	$286	$297	$544	$460
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Greenville	$99.36	$92.80	$53.89	$141.1	$103.5
Average	$41.01	$37.02	$33.99	$44.34	$34.79

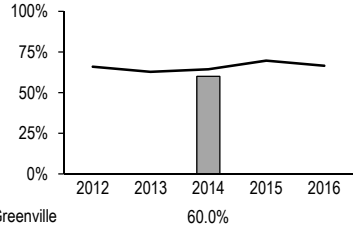
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Greenville	369	425	256	278	356
Average	915	976	792	737	830

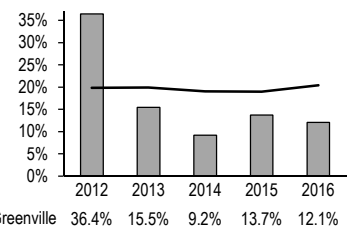
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Greenville			60.0%		
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Greenville	36.4%	15.5%	9.2%	13.7%	12.1%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Hickory Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Hickory offers curbside collection every other week 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 2015–16 the city collected $44,745 in revenue from the sale of recyclables partially offsetting program costs.

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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
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	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	Yes
Collection Points	12,200
Tons of Recyclables Collected	
Curbside	2,305
City Drop-Off Centers	218
Total Tons Collected	2,523
Monthly Service Fee	No
Revenue from Sale of Recyclables	$44,745
Sale Revenue as Percentage of Cost	10.4%

Full Cost Profile

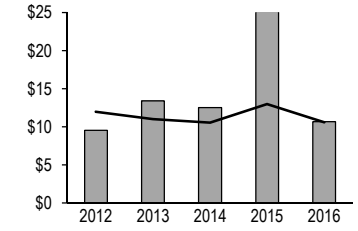
Cost Breakdown by Percentage	
Personal Services	5.0%
Operating Costs	93.9%
Capital Costs	1.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$21,531
Operating Costs	$404,663
Capital Costs	$4,902
TOTAL	$431,096

Hickory — Household Recycling

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

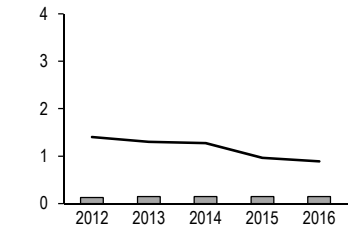
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Hickory	$9.53	$13.43	$12.53	$28.56	$10.68
Average	$11.99	$11.02	$10.54	$12.97	$10.58

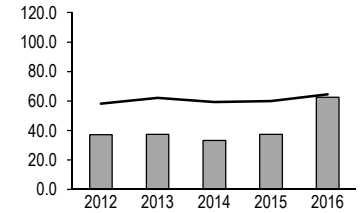
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	0.13	0.15	0.15	0.15	0.15
Average	1.40	1.30	1.28	0.96	0.89

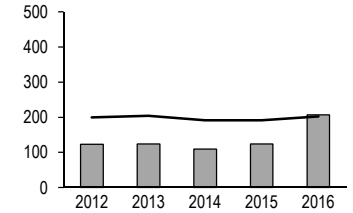
Workload Measures

Tons Recyclables Collected per 1,000 Population



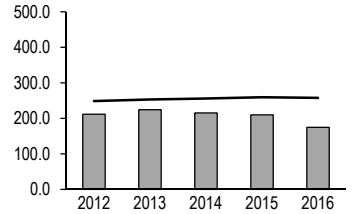
	2012	2013	2014	2015	2016
Hickory	37.2	37.4	33.2	37.4	62.5
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Hickory	123	124	110	124	207
Average	199	204	191	192	202

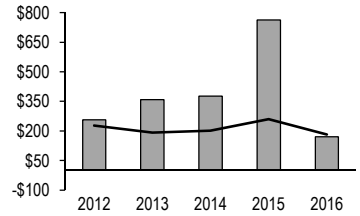
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	211.8	224.3	214.9	210.0	175.0
Average	248.3	252.8	255.4	259.2	257.2

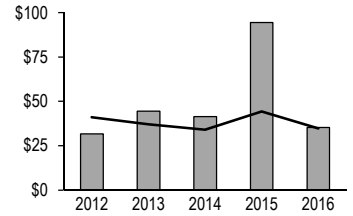
Efficiency Measures

Recycling Services Cost per Ton Collected



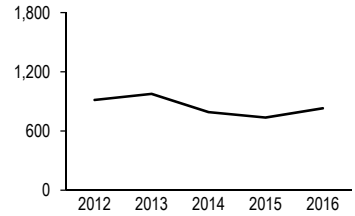
	2012	2013	2014	2015	2016
Hickory	$256	$359	$377	$763	$171
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Hickory	$31.58	$44.44	$41.32	$94.41	$35.34
Average	$41.01	$37.02	$33.99	$44.34	$34.79

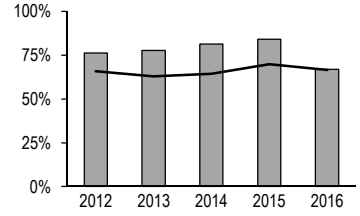
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Hickory					
Average	915	976	792	737	830

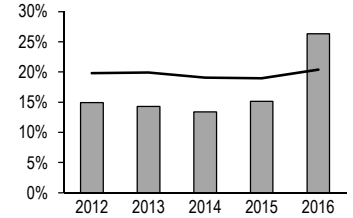
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Hickory	76.2%	77.8%	81.4%	84.0%	67.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Hickory	14.9%	14.3%	13.4%	15.1%	26.3%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

High Point Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

High Point 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 sixteen 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.

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 $461,796 for the year partially offsetting program costs.

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 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Collection	6.0
FTE Positions—Other	1.5
Number of City Drop-Off Centers	16
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	41,216
Tons of Recyclables Collected	
Curbside	9,552
City Drop-Off Centers	477
Total Tons Collected	10,029
Monthly Service Fee	$11.00
Revenue from Sale of Recyclables	$461,796
Sale Revenue as Percentage of Cost	47.1%

Full Cost Profile

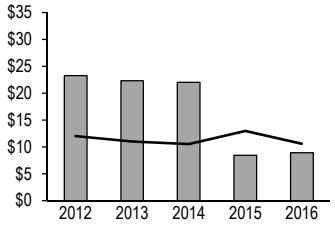
Cost Breakdown by Percentage	
Personal Services	37.2%
Operating Costs	33.0%
Capital Costs	29.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$364,465
Operating Costs	$323,927
Capital Costs	$292,471
TOTAL	$980,863

High Point Household Recycling

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

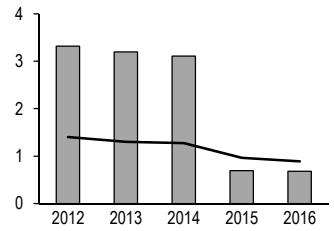
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
High Point	$23.28	$22.29	$22.04	$8.46	$8.94
Average	$11.99	$11.02	$10.54	$12.97	$10.58

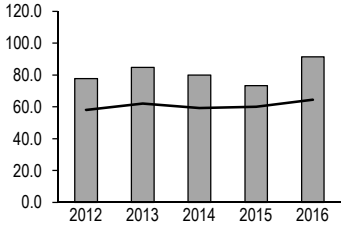
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	3.32	3.20	3.11	0.69	0.68
Average	1.40	1.30	1.28	0.96	0.89

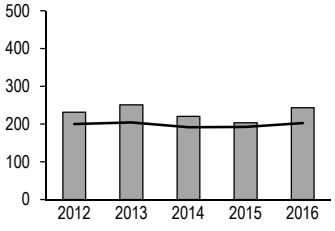
Workload Measures

Tons Recyclables Collected per 1,000 Population



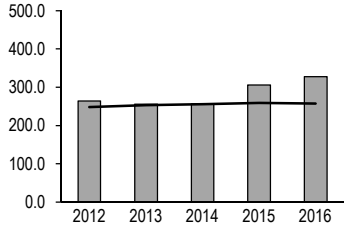
	2012	2013	2014	2015	2016
High Point	77.7	84.8	80.0	73.3	91.4
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
High Point	231	251	220	203	243
Average	199	204	191	192	202

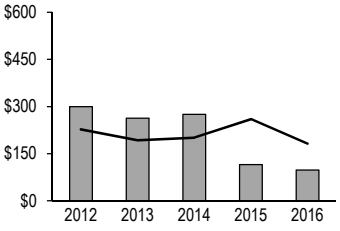
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
High Point	264.0	256.0	256.5	305.7	327.4
Average	248.3	252.8	255.4	259.2	257.2

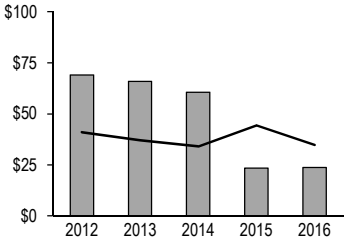
Efficiency Measures

Recycling Services Cost per Ton Collected



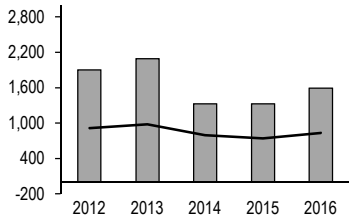
	2012	2013	2014	2015	2016
High Point	$300	$263	$275	$115	$98
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
High Point	$69.10	$65.99	$60.67	$23.40	$23.80
Average	$41.01	$37.02	$33.99	$44.34	$34.79

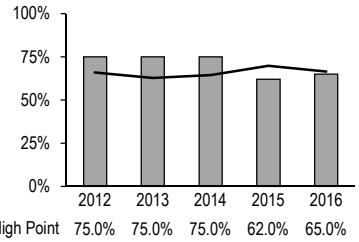
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
High Point	1,904	2,093	1,329	1,326	1,592
Average	915	976	792	737	830

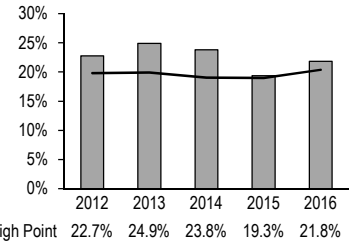
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
High Point	75.0%	75.0%	75.0%	62.0%	65.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
High Point	22.7%	24.9%	23.8%	19.3%	21.8%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Raleigh — Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Raleigh provides curbside collection of recyclables every other week. Four drop-off centers for use by all residents and small businesses are also available. Customers are allowed two ninety-five-gallon carts. A few townhome locations use smaller eighteen-gallon bins due to the difficulty of moving carts to a pickup location.

Recyclables collected include:

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

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Median Family Income U.S. Census 2010	$68,678

Service Profile

FTE Positions—Collection	39.0
FTE Positions—Other	3.0
Number of City Drop-Off Centers	2
Other Drop-Off Centers	2
Percentage of Service Contracted	0%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	183,172
Tons of Recyclables Collected	
Curbside	27,376
City Drop-Off Centers	863
Total Tons Collected	28,239
Monthly Service Fee	$2.60
Revenue from Sale of Recyclables	$841,349
Sale Revenue as Percentage of Cost	16.0%

Full Cost Profile

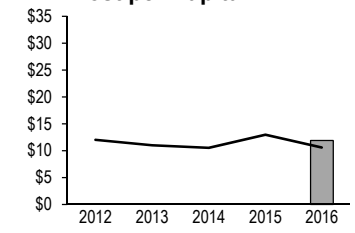
Cost Breakdown by Percentage	
Personal Services	43.0%
Operating Costs	36.3%
Capital Costs	20.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,254,554
Operating Costs	$1,904,260
Capital Costs	$1,088,151
TOTAL	$5,246,965

Raleigh — Household Recycling

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

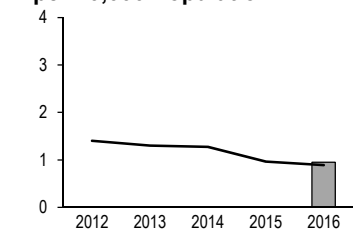
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Raleigh					$11.90
Average	$11.99	$11.02	$10.54	$12.97	$10.58

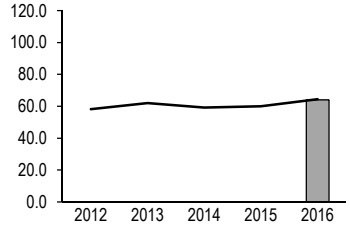
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					0.95
Average	1.40	1.30	1.28	0.96	0.89

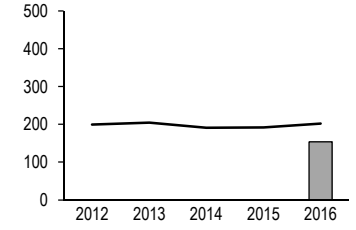
Workload Measures

Tons Recyclables Collected per 1,000 Population



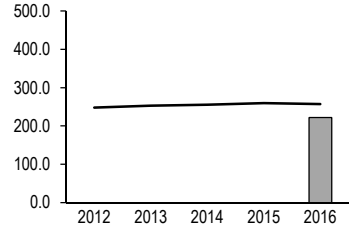
	2012	2013	2014	2015	2016
Raleigh					64.1
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					154
Average	199	204	191	192	202

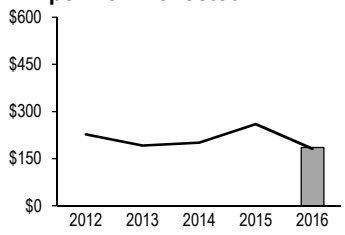
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					222.4
Average	248.3	252.8	255.4	259.2	257.2

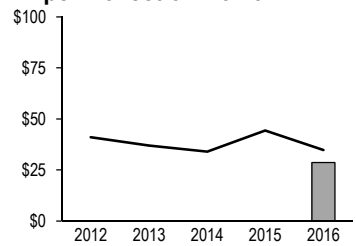
Efficiency Measures

Recycling Services Cost per Ton Collected



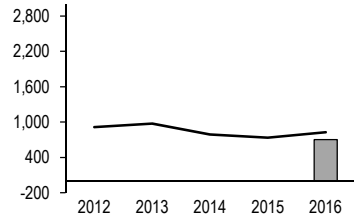
	2012	2013	2014	2015	2016
Raleigh					$186
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Raleigh					$28.65
Average	$41.01	$37.02	$33.99	$44.34	$34.79

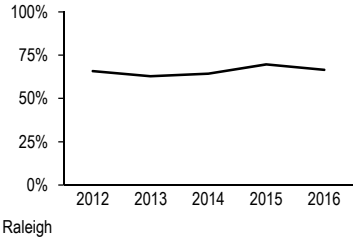
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Raleigh					702
Average	915	976	792	737	830

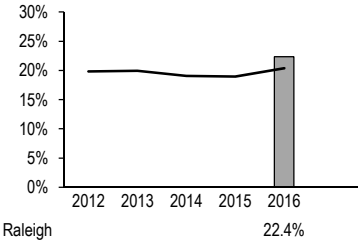
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Raleigh					
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Raleigh					22.4%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Salisbury Household Recycling

Fiscal Year 2015–16

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 2015–16. 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 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
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	0
Percentage of Service Contracted	100%
Collection Frequency	Every 2 weeks
General Collection Location	Curbside
Recyclables Sorted at Curb	No
Collection Points	11,095
Tons of Recyclables Collected	
Curbside	1,519
City Drop-Off Centers	0
Total Tons Collected	1,519
Monthly Service Fee	$4.03
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

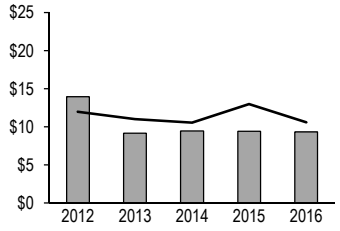
Cost Breakdown by Percentage	
Personal Services	0.0%
Operating Costs	100.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$0
Operating Costs	$319,466
Capital Costs	$0
TOTAL	$319,466

Salisbury — Household Recycling

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

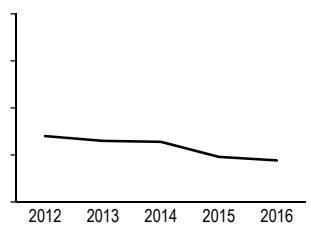
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Salisbury	$13.94	$9.18	$9.45	$9.42	$9.32
Average	$11.99	$11.02	$10.54	$12.97	$10.58

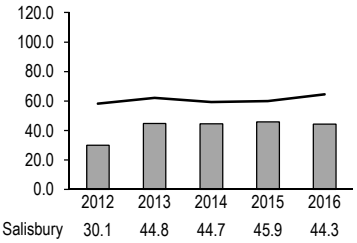
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury					
Average	1.40	1.30	1.28	0.96	0.89

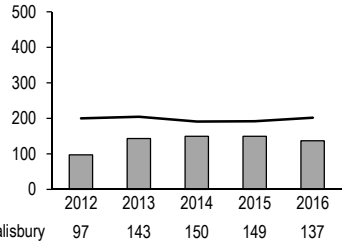
Workload Measures

Tons Recyclables Collected per 1,000 Population



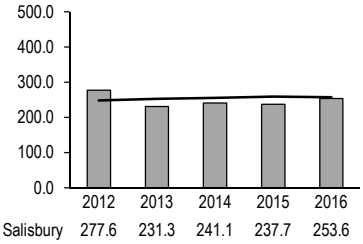
	2012	2013	2014	2015	2016
Salisbury	30.1	44.8	44.7	45.9	44.3
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	97	143	150	149	137
Average	199	204	191	192	202

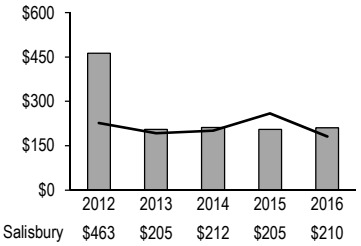
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	277.6	231.3	241.1	237.7	253.6
Average	248.3	252.8	255.4	259.2	257.2

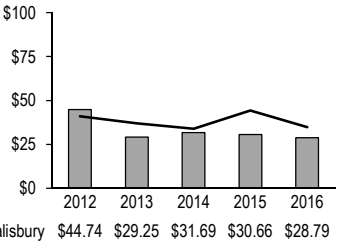
Efficiency Measures

Recycling Services Cost per Ton Collected



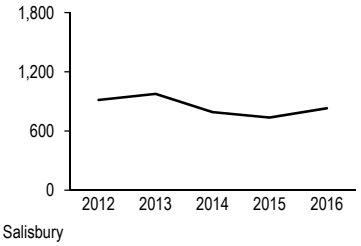
	2012	2013	2014	2015	2016
Salisbury	$463	$205	$212	$205	$210
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Salisbury	$44.74	$29.25	$31.69	$30.66	$28.79
Average	$41.01	$37.02	$33.99	$44.34	$34.79

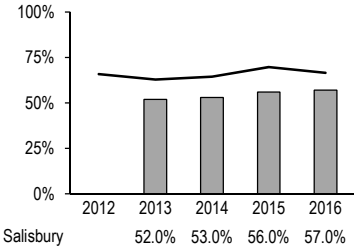
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Salisbury					
Average	915	976	792	737	830

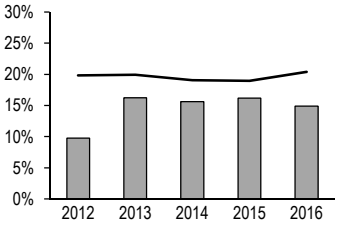
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Salisbury		52.0%	53.0%	56.0%	57.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Salisbury	9.8%	16.2%	15.6%	16.2%	14.9%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Wilson Household Recycling

Fiscal Year 2015–16

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. Wilson began a pilot program in July 2015 shifting to collection done once every two weeks. This pilot phase initially covered about 2,800 homes and each received a 96-gallon roll out cart. 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.

The initial pilot phase for recycling begun in July 2015 helped lower overall costs notably.

Municipal Profile

Population (OSBM 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Collection	7.0
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	No
Collection Points	19,975
Tons of Recyclables Collected	
Curbside	1,586
City Drop-Off Centers	0
Total Tons Collected	1,586
Monthly Service Fee	$20.00
Revenue from Sale of Recyclables	$0
Sale Revenue as Percentage of Cost	NA

Full Cost Profile

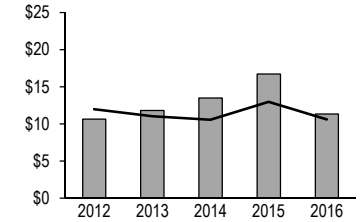
Cost Breakdown by Percentage	
Personal Services	41.6%
Operating Costs	42.2%
Capital Costs	16.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$232,485
Operating Costs	$235,717
Capital Costs	$90,294
TOTAL	$558,496

Wilson — Household Recycling

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

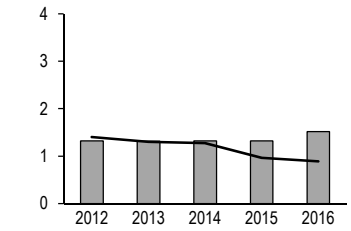
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Wilson	$10.65	$11.80	$13.49	$16.74	$11.31
Average	$11.99	$11.02	$10.54	$12.97	$10.58

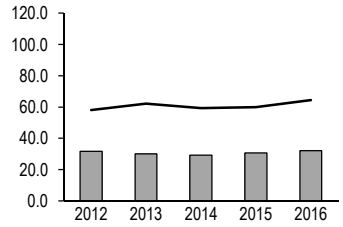
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	1.32	1.31	1.32	1.32	1.52
Average	1.40	1.30	1.28	0.96	0.89

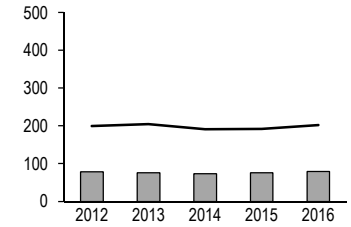
Workload Measures

Tons Recyclables Collected per 1,000 Population



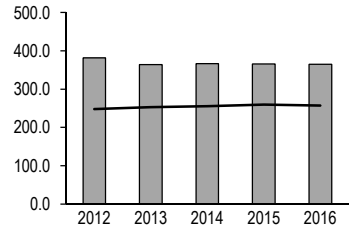
	2012	2013	2014	2015	2016
Wilson	31.7	30.0	29.3	30.7	32.1
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	78	76	73	76	79
Average	199	204	191	192	202

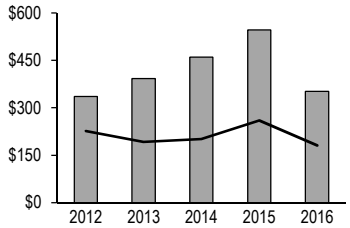
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	381.2	364.1	366.6	365.7	364.7
Average	248.3	252.8	255.4	259.2	257.2

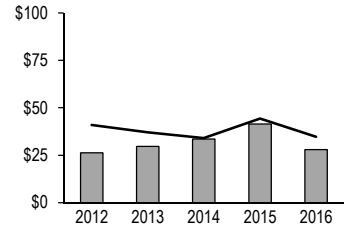
Efficiency Measures

Recycling Services Cost per Ton Collected



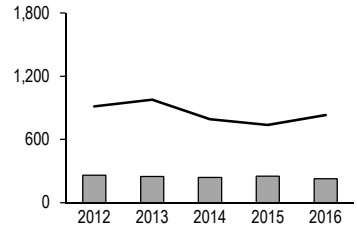
	2012	2013	2014	2015	2016
Wilson	$336	$393	$460	$546	$352
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Wilson	$26.29	$29.69	$33.55	$41.51	$27.96
Average	$41.01	$37.02	$33.99	$44.34	$34.79

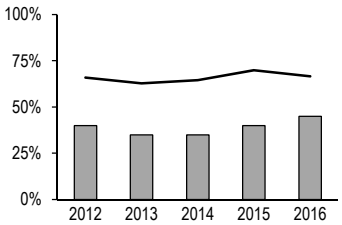
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Wilson	260	248	240	252	227
Average	915	976	792	737	830

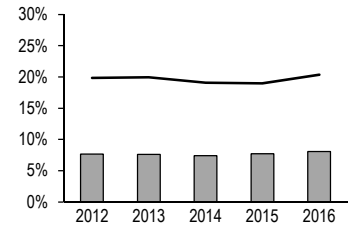
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Wilson	40.0%	35.0%	35.0%	40.0%	45.0%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Wilson	7.7%	7.6%	7.4%	7.7%	8.1%
Average	19.8%	19.9%	19.1%	19.0%	20.4%

Winston-Salem Household Recycling

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Winston-Salem provides biweekly curbside household recycling service to its single-family residences using ninety-six-gallon carts. 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 city does not charge a recycling fee. Revenue to the city for the sale of recyclables was $144,724 during the year partially offsetting program costs.

Conditions Affecting Service, Performance, and Costs

In FY 2011–12, 60 percent 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 biweekly collection. The city anticipates signficant cost savings and increased participation from a single-stream program.

Municipal Profile

Population (OSBM 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	Contractor
FTE Positions—Other	2.0
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	No
Collection Points	75,039
Tons of Recyclables Collected	
Curbside	14,472
City Drop-Off Centers	269
Total Tons Collected	14,741
Monthly Service Fee	No
Revenue from Sale of Recyclables	$144,724
Sale Revenue as Percentage of Cost	9.0%

Full Cost Profile

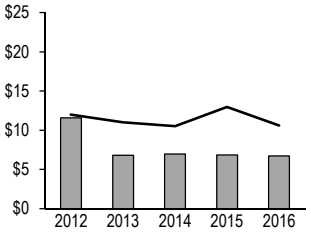
Cost Breakdown by Percentage	
Personal Services	4.7%
Operating Costs	95.3%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$75,688
Operating Costs	$1,533,220
Capital Costs	$0
TOTAL	$1,608,908

Winston-Salem Household Recycling

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

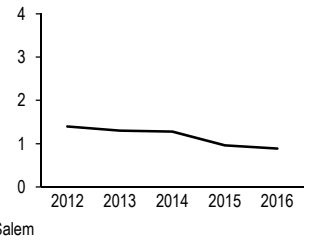
Resource Measures

Recycling Services Cost per Capita



	2012	2013	2014	2015	2016
Winston-Salem	$11.58	$6.80	$6.98	$6.84	$6.73
Average	$11.99	$11.02	$10.54	$12.97	$10.58

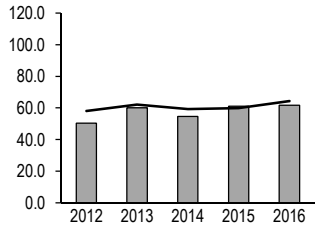
Recycling Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem					
Average	1.40	1.30	1.28	0.96	0.89

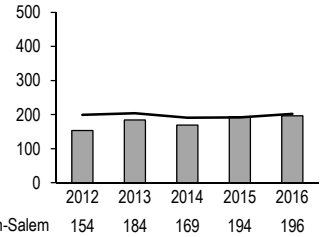
Workload Measures

Tons Recyclables Collected per 1,000 Population



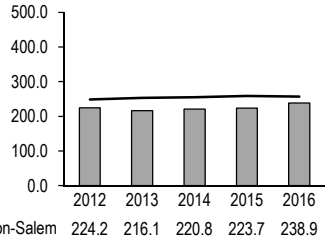
	2012	2013	2014	2015	2016
Winston-Salem	50.3	60.1	54.7	61.2	61.7
Average	58.2	62.1	59.3	60.0	64.4

Tons Recyclables Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	154	184	169	194	196
Average	199	204	191	192	202

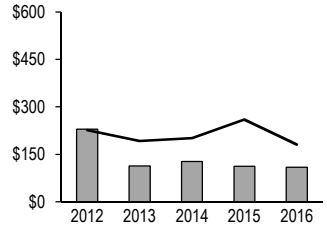
Tons Solid Waste Landfilled per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	224.2	216.1	220.8	223.7	238.9
Average	248.3	252.8	255.4	259.2	257.2

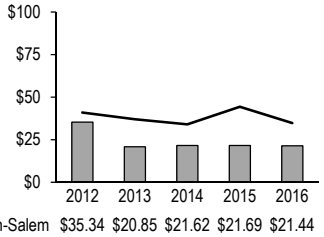
Efficiency Measures

Recycling Services Cost per Ton Collected



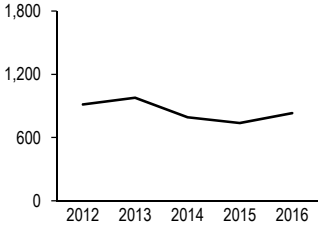
	2012	2013	2014	2015	2016
Winston-Salem	$230	$113	$128	$112	$109
Average	$227	$192	$201	$260	$181

Recycling Services Cost per Collection Point



	2012	2013	2014	2015	2016
Winston-Salem	$35.34	$20.85	$21.62	$21.69	$21.44
Average	$41.01	$37.02	$33.99	$44.34	$34.79

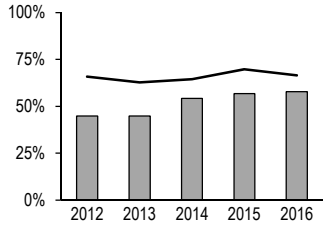
Tons Collected Curbside per Municipal FTE



	2012	2013	2014	2015	2016
Winston-Salem					
Average	915	976	792	737	830

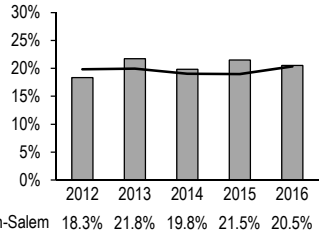
Effectiveness Measures

Community Set-Out Rate



	2012	2013	2014	2015	2016
Winston-Salem	44.9%	44.9%	54.2%	56.8%	57.9%
Average	65.9%	62.8%	64.4%	69.8%	66.5%

Tons Recycled as Percentage of Tons Refuse and Recyclables Collected



	2012	2013	2014	2015	2016
Winston-Salem	18.3%	21.8%	19.8%	21.5%	20.5%
Average	19.8%	19.9%	19.1%	19.0%	20.4%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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	Seasonal Leaves	
Apex	Curbside	1 x week	NA	13,884	6,543	NA	12.4
Asheville	Curbside	2 x month	NA	30,069	6,530	NA	14.9
Burlington	Curbside	1 x week	4 sweeps	17,198	4,841	4,638	10.5
Cary	Curbside	1 x week	3 sweeps	48,070	15,680	6,077	22.0
Chapel Hill	Curbside	1 x week	5-6 sweeps	12,063	2,708	4,968	16.2
Charlotte	Curbside	1 x week	NA	213,924	48,754	NA	74.0
Concord	Curbside	1 x week	3 sweeps	30,154	6,127	1,453	24.6
Greensboro	Curbside	1 x week	2 sweeps	84,302	13,056	12,888	45.9
Greenville	Curbside	1 x week	1 x week	19,000	NA	NA	21.6
Hickory	Curbside	1 x week	2 sweeps	12,200	3,452	3,177	9.8
High Point	Curbside	1 x week	2 sweeps	41,216	4,143	2,406	17.9
Raleigh	Curbside	1 x week	2 sweeps	123,501	16,754	12,750	95.0
Salisbury	Curbside	1 x week	1 x 3 weeks	10,961	9,562	2,366	8.8
Wilson	Curbside	1 x week	1 x 3 weeks	19,975	6,721	1,705	15.5
Winston-Salem	Curbside	Yard Waste Cart 1 x week Brush every 10 days	3 sweeps	77,907	20,932	12,088	75.9

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

Apex — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 made a major purchase of new leaf and grappler trucks for leaf collection in FY 2013–14, which pushed up capital costs but helped with productivity.

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Positions—Collection	11.0
FTE Positions—Other	1.4
Collection Frequency	
Yard Waste	1 x week
Collection Points	13,884
Tons Collected	
Yard Waste	6,543
Seasonal Leaves	with yard waste
Total Tons Collected	6,543
Monthly Service Fee	$4 per month

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	57.1%
Operating Costs	22.6%
Capital Costs	20.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$618,280
Operating Costs	$244,165
Capital Costs	$219,715
TOTAL	$1,082,160

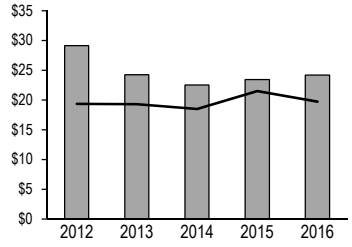
Apex

Yard Waste/Leaf Collection

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

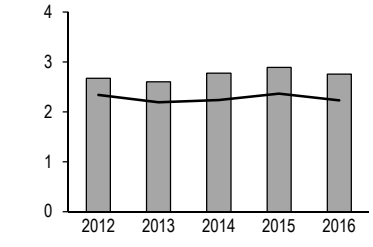
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Apex	$29.13	$24.23	$22.53	$23.42	$24.19
Average	$19.32	$19.28	$18.49	$21.50	$19.74

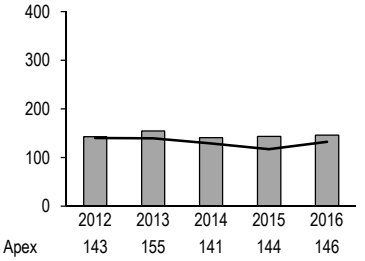
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	2.7	2.6	2.8	2.9	2.8
Average	2.3	2.2	2.2	2.4	2.2

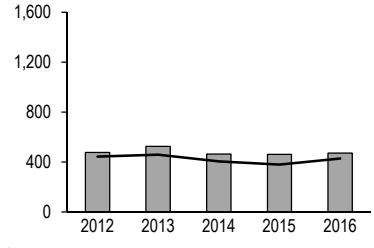
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Apex	143	155	141	144	146
Average	140	140	129	117	133

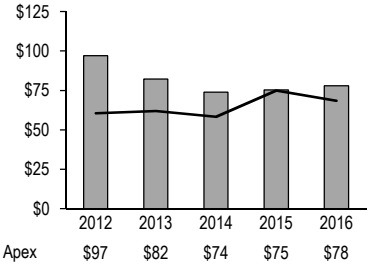
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Apex	476	526	463	462	471
Average	442	459	405	380	428

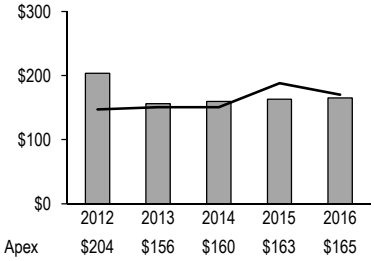
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



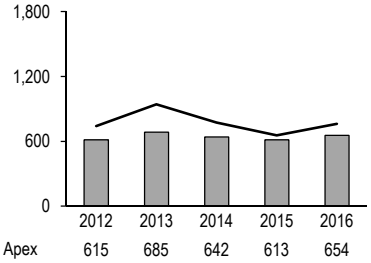
	2012	2013	2014	2015	2016
Apex	$97	$82	$74	$75	$78
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Apex	$204	$156	$160	$163	$165
Average	$147	$150	$151	$188	$170

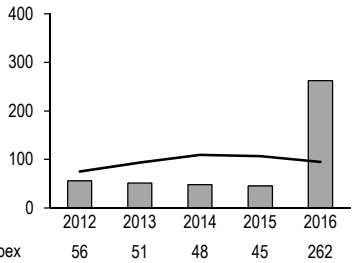
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Apex	615	685	642	613	654
Average	742	943	774	655	763

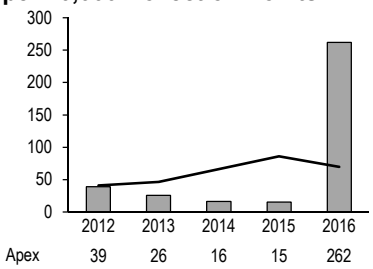
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Apex	56	51	48	45	262
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Apex	39	26	16	15	262
Average	41	46	66	86	70

Asheville — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 three-and-one-half days per week. Three three-person crews operating rear packers collect yard waste four 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 that damaged trees and led to an increase in the tons of yard waste collected.

Municipal Profile

Population (OSBM 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Median Family Income	$53,350
U.S. Census 2010	

Service Profile

FTE Positions—Collection	14.0
FTE Positions—Other	0.9
Collection Frequency	
Yard Waste	2 x month
Collection Points	30,069
Tons Collected	
Yard Waste	6,530
Seasonal Leaves	with yard waste
Total Tons Collected	6,530
Monthly Service Fee	No

Full Cost Profile

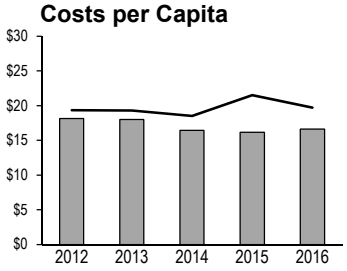
Cost Breakdown by Percentage	
Personal Services	42.0%
Operating Costs	46.1%
Capital Costs	11.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$634,868
Operating Costs	$696,653
Capital Costs	$178,448
TOTAL	$1,509,969

Asheville Yard Waste/Leaf Collection

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

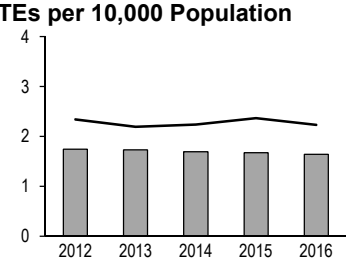
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Asheville	$18.17	$17.99	$16.46	$16.18	$16.61
Average	$19.32	$19.28	$18.49	$21.50	$19.74

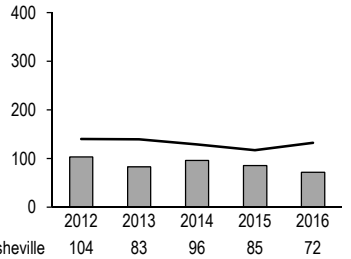
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	1.7	1.7	1.7	1.7	1.6
Average	2.3	2.2	2.2	2.4	2.2

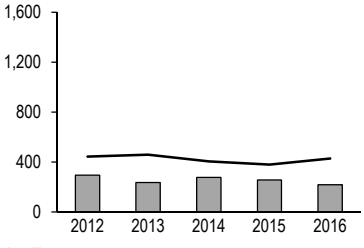
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	104	83	96	85	72
Average	140	140	129	117	133

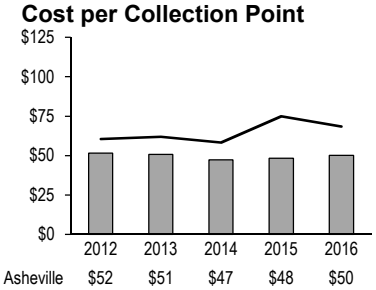
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Asheville	294	234	277	255	217
Average	442	459	405	380	428

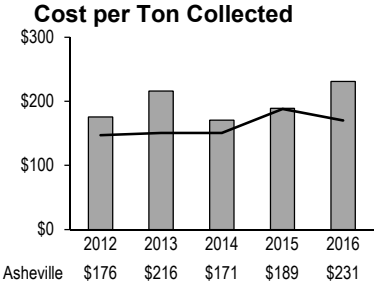
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



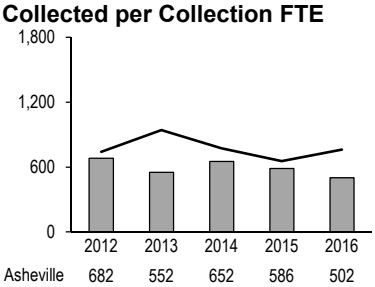
	2012	2013	2014	2015	2016
Asheville	$52	$51	$47	$48	$50
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Asheville	$176	$216	$171	$189	$231
Average	$147	$150	$151	$188	$170

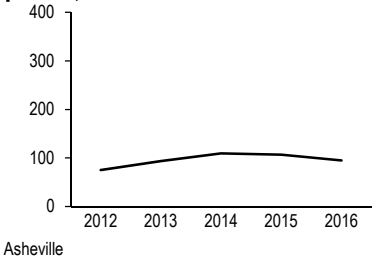
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Asheville	682	552	652	586	502
Average	742	943	774	655	763

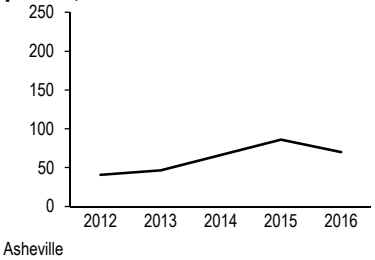
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Asheville					
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Asheville					
Average	41	46	66	86	70

Burlington Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
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	17,198
Tons Collected	
Yard Waste	4,841
Seasonal Leaves	4,638
Total Tons Collected	9,479
Monthly Service Fee	$4.50 for special bulk pickup, 3 cubic yards

Full Cost Profile

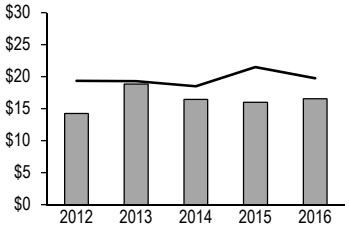
Cost Breakdown by Percentage	
Personal Services	44.5%
Operating Costs	32.8%
Capital Costs	22.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$384,978
Operating Costs	$283,673
Capital Costs	$195,687
TOTAL	$864,338

Burlington Yard Waste/Leaf Collection

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

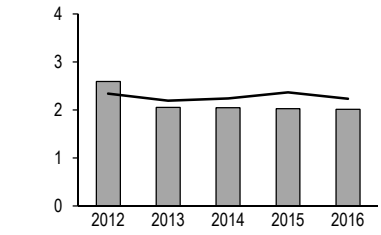
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Burlington	$14.24	$18.84	$16.44	$16.00	$16.55
Average	$19.32	$19.28	$18.49	$21.50	$19.74

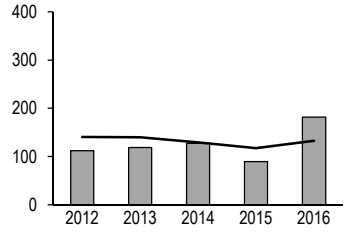
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	2.6	2.1	2.0	2.0	2.0
Average	2.3	2.2	2.2	2.4	2.2

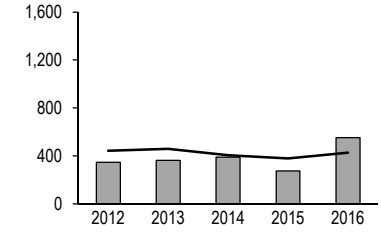
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	112	118	127	89	181
Average	140	140	129	117	133

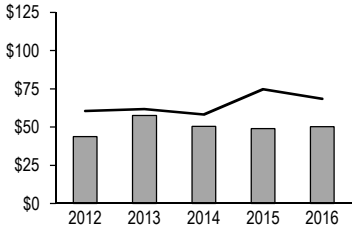
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Burlington	345	362	390	273	551
Average	442	459	405	380	428

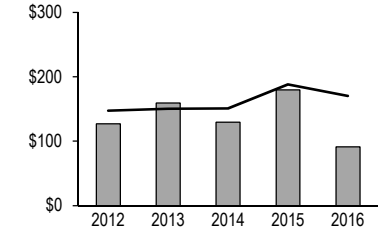
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



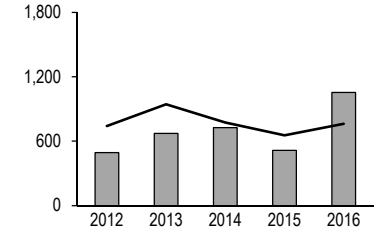
	2012	2013	2014	2015	2016
Burlington	$44	$58	$50	$49	$50
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Burlington	$127	$159	$129	$179	$91
Average	$147	$150	$151	$188	$170

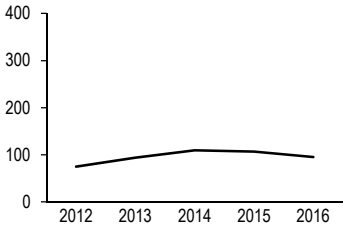
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Burlington	495	674	727	515	1,053
Average	742	943	774	655	763

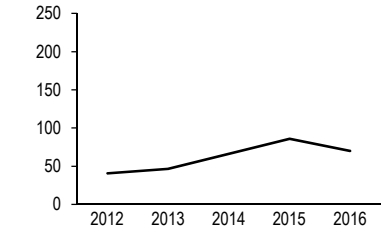
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Burlington					0
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Burlington					
Average	41	46	66	86	70

Cary — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Collection	22.0
FTE Positions—Other	0.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	3 sweeps
Collection Points	48,450
Tons Collected	
Yard Waste	15,680
Seasonal Leaves	6,077
Total Tons Collected	21,757
Monthly Service Fee	Included in solid waste fee

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	51.9%
Operating Costs	33.7%
Capital Costs	14.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,440,725
Operating Costs	$936,301
Capital Costs	$400,381
TOTAL	$2,777,407

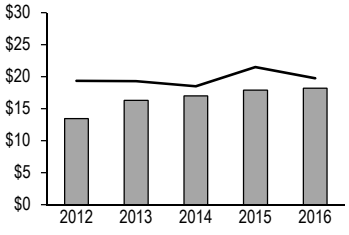
Cary

Yard Waste/Leaf Collection

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

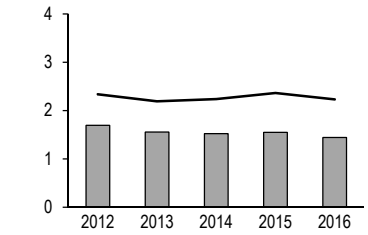
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Cary	$13.41	$16.27	$16.97	$17.90	$18.20
Average	$19.32	$19.28	$18.49	$21.50	$19.74

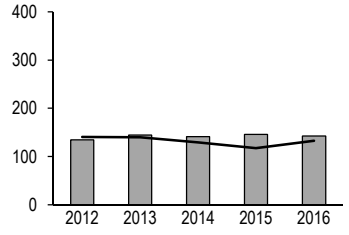
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	1.7	1.6	1.5	1.6	1.4
Average	2.3	2.2	2.2	2.4	2.2

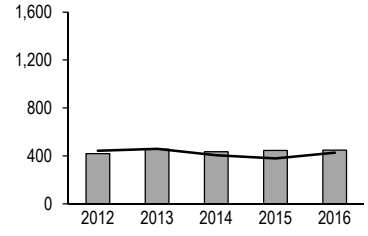
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Cary	134	144	141	145	143
Average	140	140	129	117	133

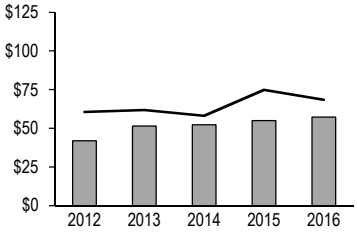
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Cary	420	455	434	446	449
Average	442	459	405	380	428

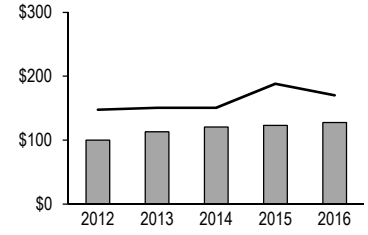
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



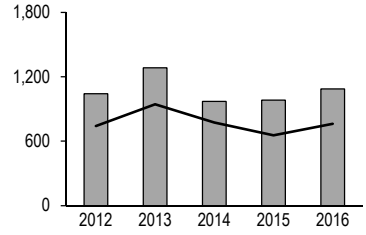
	2012	2013	2014	2015	2016
Cary	$42	$51	$52	$55	$57
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Cary	$100	$113	$120	$123	$128
Average	$147	$150	$151	$188	$170

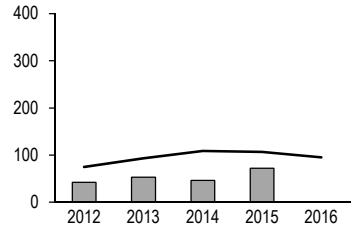
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Cary	1,042	1,283	971	981	1,088
Average	742	943	774	655	763

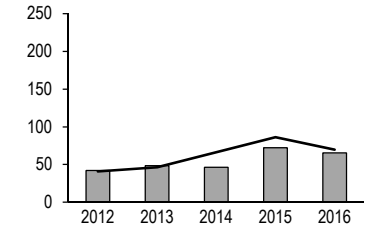
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Cary	42	53	46	72	
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Cary	42	49	46	72	66
Average	41	46	66	86	70

Chapel Hill — Yard Waste/Leaf Collection

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Yard waste collection is managed by the Solid Waste Services Division of the Public Works Department. Yard waste includes organic materials including leaves, stems, grass, limbs, and other residential organic matter. The town does not collect large logs or stumps, and debris from lot clearing.

Yard waste is collected once per week curbside with no monthly fee. Yard waste is collected by seven three-person crews using rear packers two days per week. The Town collects small yard waste materials place in roll carts, other rigid containers, or paper yard waste bags for collection. The Town collects large yard waste materials in loose piles. Yard waste piles larger than three cubic yards are collected for a fee. The Town does not collect yard waste in plastic bags.

Residents can rent a 10-cubic-yard roll-off container or schedule a paid knuckle-boom collection for large projects. These larger loads are collected by a one-person crew using a knuckle-boom truck and a hook-lift truck 5 days per week. Residents pay a fee of $35 per day or $60 per week to rent a roll-off container for collection. The fee for a knuckle-boom collection is $125.

Seasonal leaf collection is managed by the Streets and Construction Services Division of the Public Works Department. Seasonal leaf collection is run with five or six cycles in a season from mid-October to early March. Only loose leaves and pine straw free of limbs or other debris are collected curbside. Leaf crews consist of a driver, a raker, and a machine operator. Crews may make use of seasonal labor, and three to six crews are used depending on the volume of leaves at the curb for collection. During peak leaf fall, crews also pull the curb line in conjunction with street sweepers from the Stormwater Program of the Public Works Department.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Complaints only include leaf collection. In FY 2014-15 complaints were not tracked for yard waste.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	14.8
FTE Positions—Other	1.4
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	5-6 sweeps
Collection Points	12,063
Tons Collected	
Yard Waste	2,708
Seasonal Leaves	4,968
Total Tons Collected	7,676
Monthly Service Fee	Resdients may purchase cart for $50 but not required

Full Cost Profile

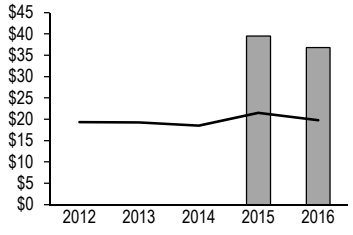
Cost Breakdown by Percentage	
Personal Services	42.2%
Operating Costs	42.3%
Capital Costs	15.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$924,019
Operating Costs	$927,845
Capital Costs	$339,938
TOTAL	$2,191,802

Chapel Hill — Yard Waste/Leaf Collection

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

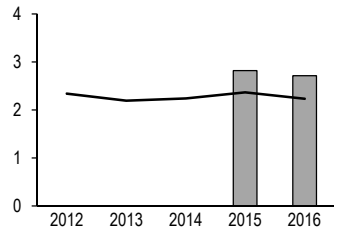
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Chapel Hill				$39.50	$36.77
Average	$19.32	$19.28	$18.49	$21.50	$19.74

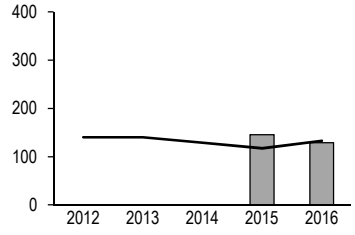
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				2.8	2.7
Average	2.3	2.2	2.2	2.4	2.2

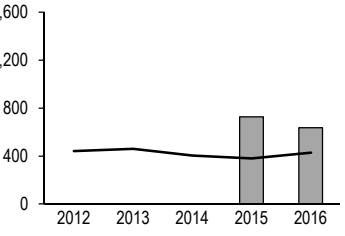
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				146	129
Average	140	140	129	117	133

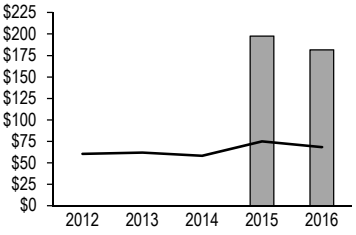
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill				727	636
Average	442	459	405	380	428

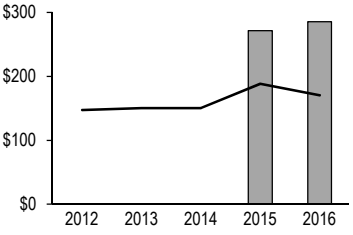
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



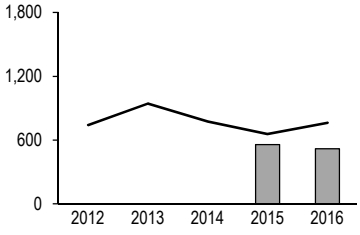
	2012	2013	2014	2015	2016
Chapel Hill				$197	$182
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Chapel Hill				$271	$286
Average	$147	$150	$151	$188	$170

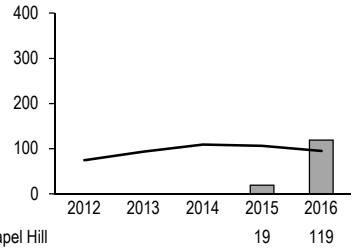
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Chapel Hill				558	519
Average	742	943	774	655	763

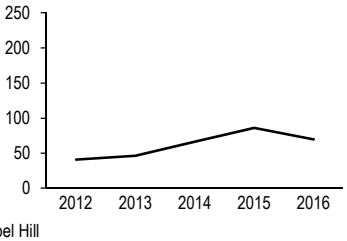
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill				19	119
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Chapel Hill					
Average	41	46	66	86	70

Charlotte — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 into 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

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

Charlotte's Solid Waste Services division focussed on improving customer service in FY 2013–14, explaining the drop in complaints.

Municipal Profile

Population (OSBM 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Collection	74.00
FTE Positions—Other	0.00
Collection Frequency	
Yard Waste	1 x week
Collection Points	213,924
Tons Collected	
Yard Waste	48,754
Seasonal Leaves	with yard waste
Total Tons Collected	48,754
Monthly Service Fee	No

Full Cost Profile

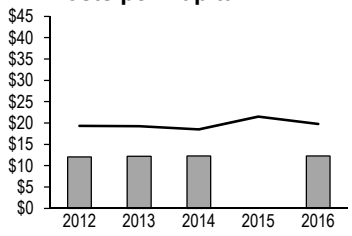
Cost Breakdown by Percentage	
Personal Services	39.1%
Operating Costs	46.5%
Capital Costs	14.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,918,703
Operating Costs	$4,664,486
Capital Costs	$1,444,604
TOTAL	$10,027,793

Charlotte — Yard Waste/Leaf Collection

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

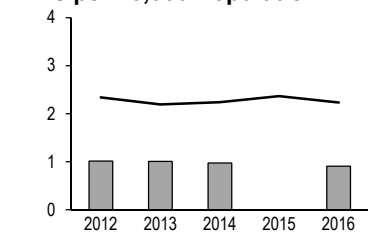
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Charlotte	$12.08	$12.20	$12.29		$12.25
Average	$19.32	$19.28	$18.49	$21.50	$19.74

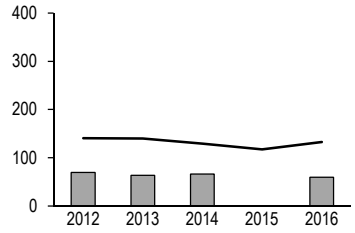
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	1.0	1.0	1.0		0.9
Average	2.3	2.2	2.2	2.4	2.2

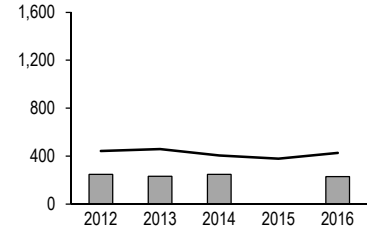
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte	69	64	66		60
Average	140	140	129	117	133

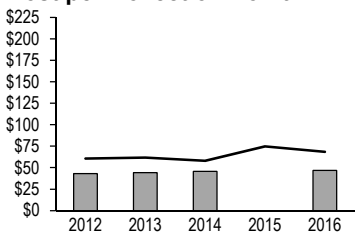
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	248	231	247		228
Average	442	459	405	380	428

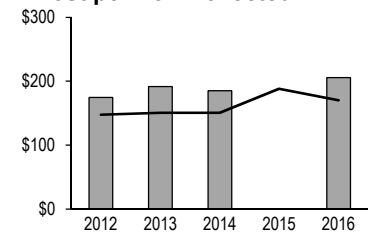
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



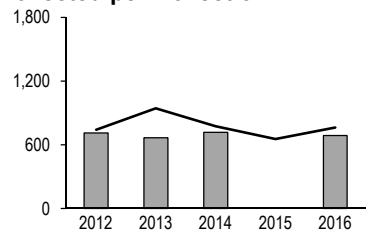
	2012	2013	2014	2015	2016
Charlotte	$43	$44	$46		$47
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Charlotte	$175	$192	$185		$206
Average	$147	$150	$151	$188	$170

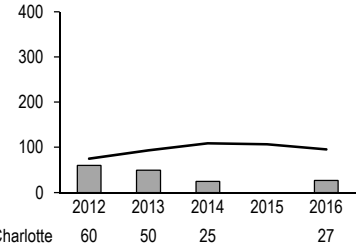
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Charlotte	712	667	717		687
Average	742	943	774	655	763

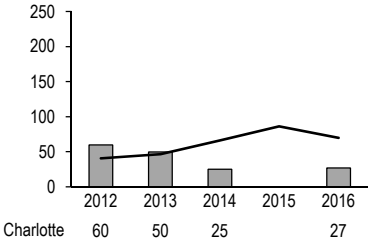
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	60	50	25		27
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Charlotte	60	50	25		27
Average	41	46	66	86	70

Concord Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 uses three two-person crews with garbage trucks and a one-person crew with a dump truck to collect yard waste. Four two-person crews also are 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 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Median Family Income	$63,643
U.S. Census 2010	

Service Profile

FTE Positions—Collection	22.50
FTE Positions—Other	2.07
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	3 sweeps
Collection Points	30,154
Tons Collected	
Yard Waste	6,127
Seasonal Leaves	1,453
Total Tons Collected	7,580
Monthly Service Fee	No

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	50.1%
Operating Costs	31.2%
Capital Costs	18.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,182,525
Operating Costs	$736,480
Capital Costs	$441,898
TOTAL	$2,360,903

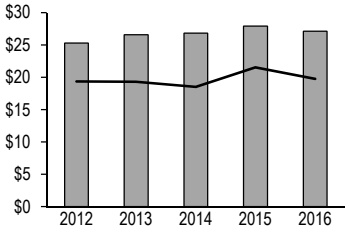
Concord

Yard Waste/Leaf Collection

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

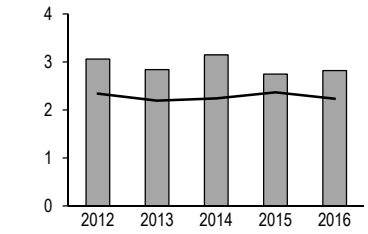
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Concord	$25.30	$26.55	$26.81	$27.90	$27.10
Average	$19.32	$19.28	$18.49	$21.50	$19.74

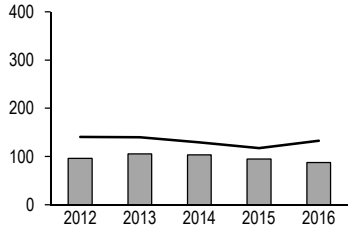
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	3.1	2.8	3.1	2.7	2.8
Average	2.3	2.2	2.2	2.4	2.2

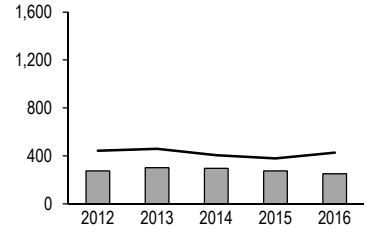
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Concord	96	105	103	95	87
Average	140	140	129	117	133

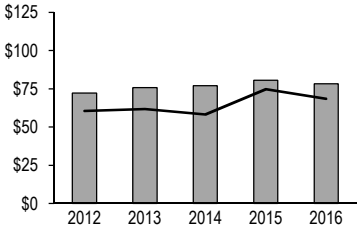
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Concord	273	300	296	274	251
Average	442	459	405	380	428

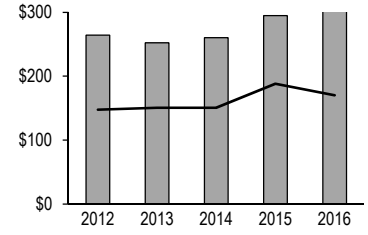
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



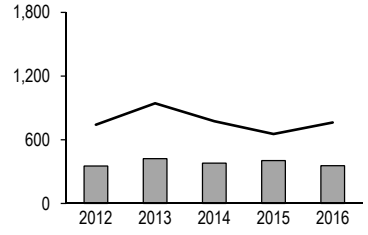
	2012	2013	2014	2015	2016
Concord	$72	$76	$77	$81	$78
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Concord	$264	$252	$260	$295	$311
Average	$147	$150	$151	$188	$170

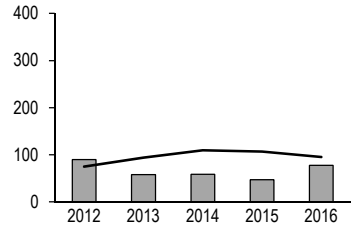
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Concord	353	422	382	403	358
Average	742	943	774	655	763

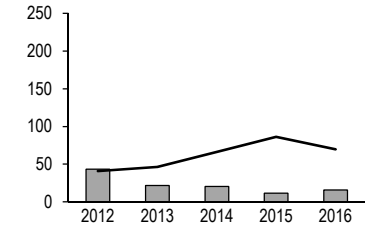
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Concord	90	57	58	47	78
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Concord	43	22	20	12	16
Average	41	46	66	86	70

Greensboro Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
Median Family Income	$52,752
U.S. Census 2010	

Service Profile

FTE Positions—Collection	44.79
FTE Positions—Other	1.15
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	84,302
Tons Collected	
Yard Waste	13,056
Seasonal Leaves	12,888
Total Tons Collected	25,944
Monthly Service Fee	No

Full Cost Profile

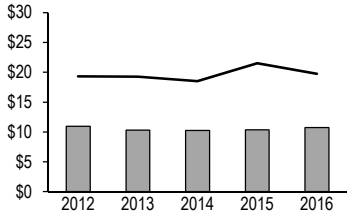
Cost Breakdown by Percentage	
Personal Services	35.0%
Operating Costs	65.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,063,058
Operating Costs	$1,974,606
Capital Costs	$0
TOTAL	$3,037,664

Greensboro Yard Waste/Leaf Collection

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

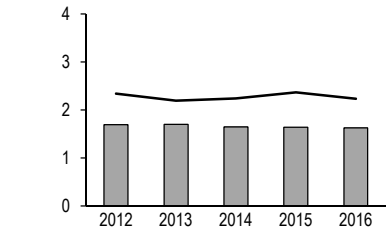
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Greensboro	$10.93	$10.32	$10.24	$10.36	$10.74
Average	$19.32	$19.28	$18.49	$21.50	$19.74

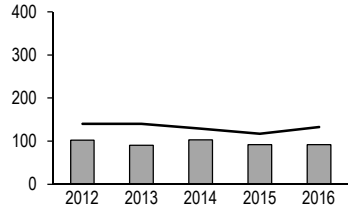
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	1.7	1.7	1.6	1.6	1.6
Average	2.3	2.2	2.2	2.4	2.2

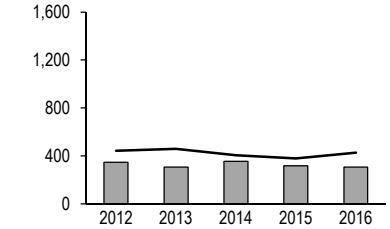
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	103	91	103	92	92
Average	140	140	129	117	133

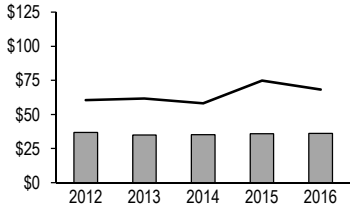
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	346	308	355	318	308
Average	442	459	405	380	428

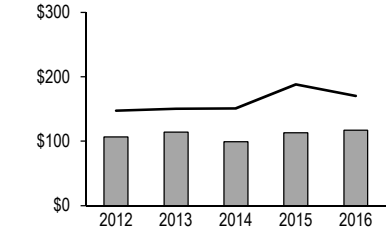
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



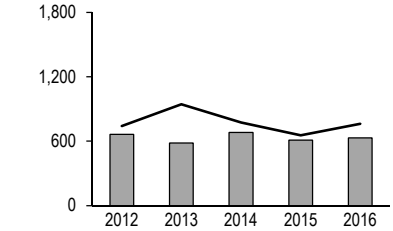
	2012	2013	2014	2015	2016
Greensboro	$37	$35	$35	$36	$36
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Greensboro	$106	$114	$99	$113	$117
Average	$147	$150	$151	$188	$170

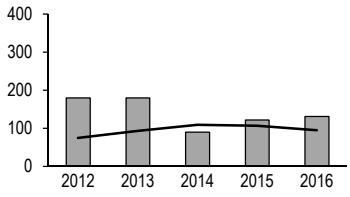
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Greensboro	662	582	683	611	632
Average	742	943	774	655	763

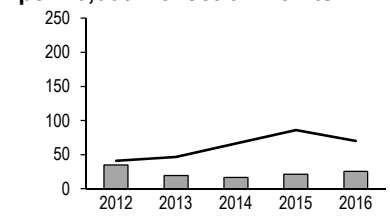
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	180	180	90	122	132
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Greensboro	35	19	16	21	26
Average	41	46	66	86	70

Greenville — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 experienced equipment breakdowns and personnel changes during FY 2013–14, which led to a high level of complaints.

Municipal Profile

Population (OSBM 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Median Family Income	$50,395
U.S. Census 2010	

Service Profile

FTE Positions—Collection	20.3
FTE Positions—Other	1.3
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x week
Collection Points	19,000
Tons Collected	
Yard Waste	na
Seasonal Leaves	na
Total Tons Collected	na
Monthly Service Fee	No

Full Cost Profile

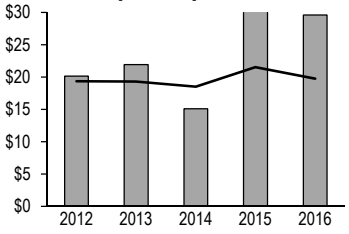
Cost Breakdown by Percentage	
Personal Services	49.8%
Operating Costs	43.6%
Capital Costs	6.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,295,758
Operating Costs	$1,135,700
Capital Costs	$171,704
TOTAL	$2,603,162

Greenville Yard Waste/Leaf Collection

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

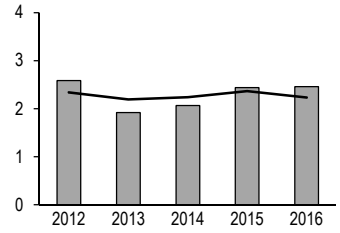
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Greenville	$20.12	$21.94	$15.10	$32.73	$29.59
Average	$19.32	$19.28	$18.49	$21.50	$19.74

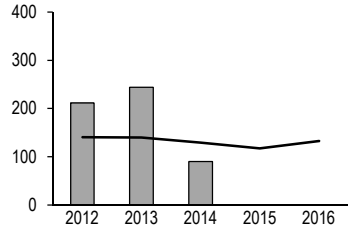
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	2.6	1.9	2.1	2.4	2.5
Average	2.3	2.2	2.2	2.4	2.2

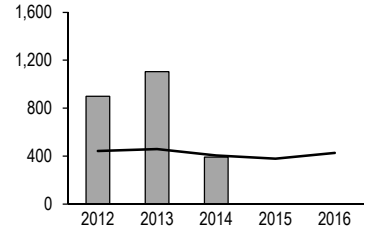
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	212	244	90		
Average	140	140	129	117	133

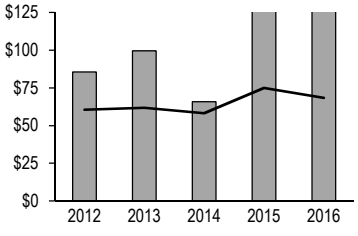
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Greenville	900	1,105	392		
Average	442	459	405	380	428

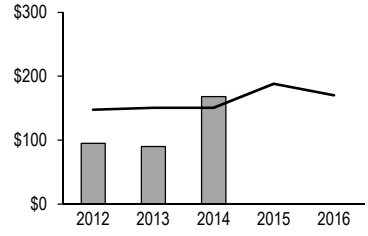
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



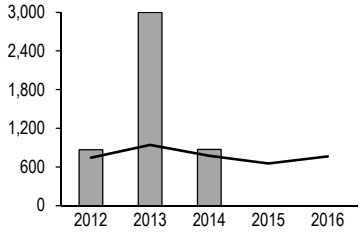
	2012	2013	2014	2015	2016
Greenville	$86	$99	$66	$151	$137
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Greenville	$95	$90	$168		
Average	$147	$150	$151	$188	$170

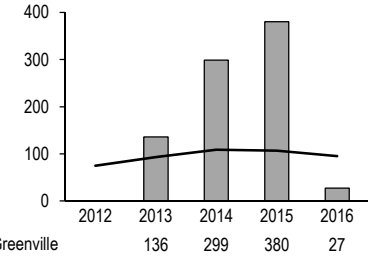
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Greenville	867	3,000	872		
Average	742	943	774	655	763

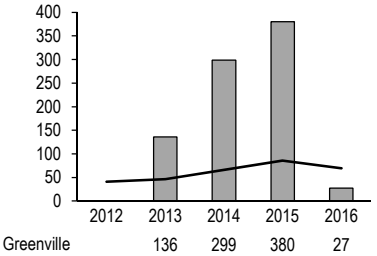
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Greenville		136	299	380	27
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Greenville		136	299	380	27
Average	41	46	66	86	70

Hickory — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
Median Family Income	$54,093
U.S. Census 2010	

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	12,200
Tons Collected	
Yard Waste	3,452
Seasonal Leaves	3,177
Total Tons Collected	6,628
Monthly Service Fee	No

Full Cost Profile

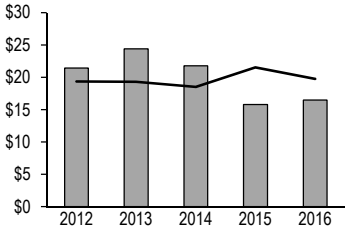
Cost Breakdown by Percentage	
Personal Services	39.9%
Operating Costs	42.1%
Capital Costs	18.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$264,996
Operating Costs	$279,619
Capital Costs	$119,796
TOTAL	$664,411

Hickory Yard Waste/Leaf Collection

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

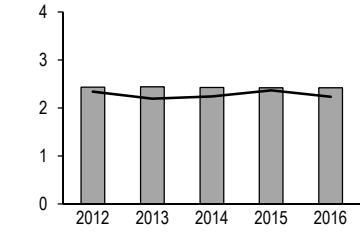
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Hickory	$21.43	$24.38	$21.78	$15.80	$16.47
Average	$19.32	$19.28	$18.49	$21.50	$19.74

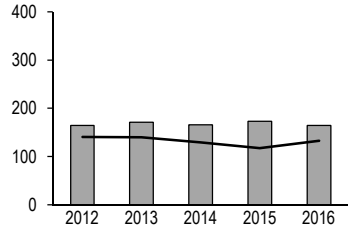
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	2.4	2.4	2.4	2.4	2.4
Average	2.3	2.2	2.2	2.4	2.2

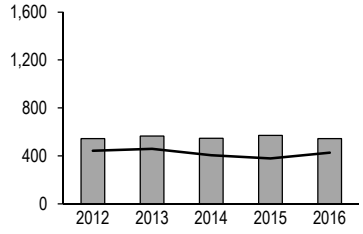
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	164	171	166	173	164
Average	140	140	129	117	133

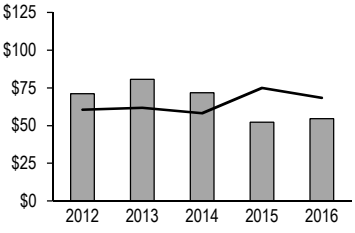
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Hickory	544	565	546	571	543
Average	442	459	405	380	428

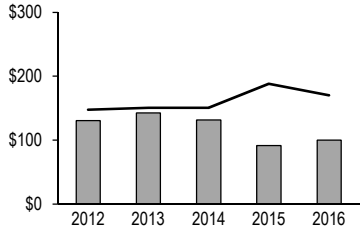
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



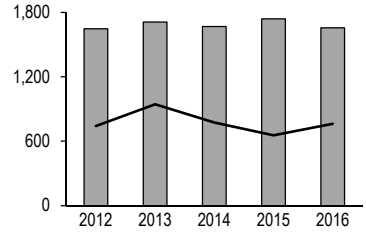
	2012	2013	2014	2015	2016
Hickory	$71	$81	$72	$52	$54
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Hickory	$131	$143	$131	$92	$100
Average	$147	$150	$151	$188	$170

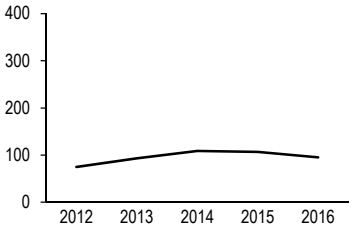
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Hickory	1,646	1,709	1,667	1,741	1,657
Average	742	943	774	655	763

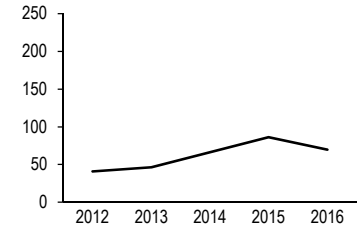
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Hickory					
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Hickory					
Average	41	46	66	86	70

High Point — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 five crews with four 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

Municipal Profile

Population (OSBM 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Median Family Income	$49,720
U.S. Census 2010	

Service Profile

FTE Positions—Collection	16.9
FTE Positions—Other	1.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	41,216
Tons Collected	
Yard Waste	4,143
Seasonal Leaves	2,406
Total Tons Collected	6,549
Monthly Service Fee	No

Full Cost Profile

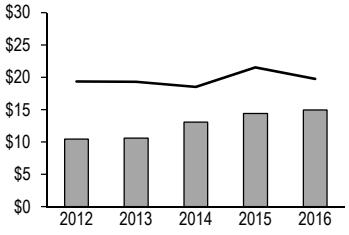
Cost Breakdown by Percentage	
Personal Services	50.7%
Operating Costs	29.0%
Capital Costs	20.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$833,606
Operating Costs	$475,958
Capital Costs	$333,145
TOTAL	$1,642,709

High Point Yard Waste/Leaf Collection

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

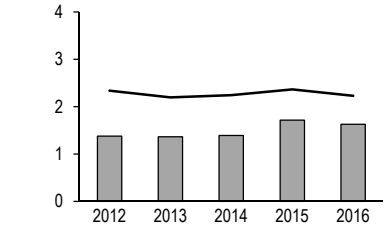
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
High Point	$10.45	$10.61	$13.08	$14.41	$14.97
Average	$19.32	$19.28	$18.49	$21.50	$19.74

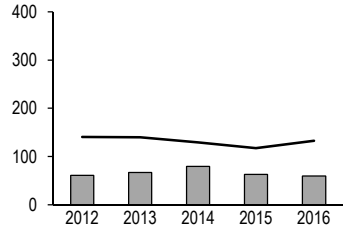
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	1.4	1.4	1.4	1.7	1.6
Average	2.3	2.2	2.2	2.4	2.2

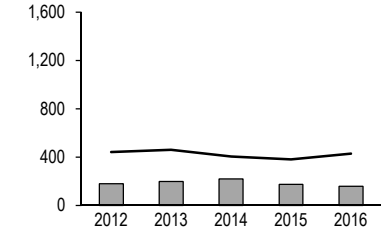
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
High Point	60	67	80	63	60
Average	140	140	129	117	133

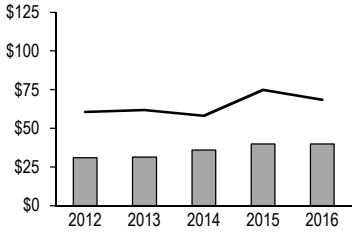
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
High Point	179	197	219	173	159
Average	442	459	405	380	428

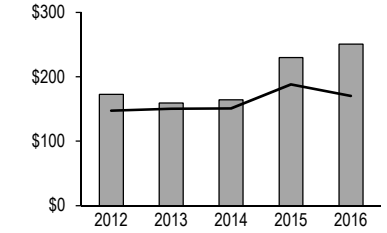
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



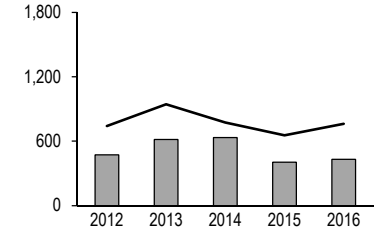
	2012	2013	2014	2015	2016
High Point	$31	$31	$36	$40	$40
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
High Point	$173	$159	$164	$230	$251
Average	$147	$150	$151	$188	$170

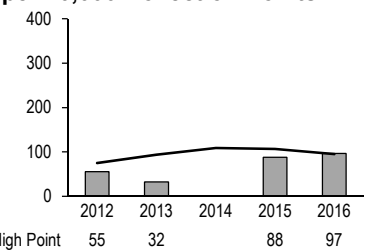
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
High Point	473	616	634	405	430
Average	742	943	774	655	763

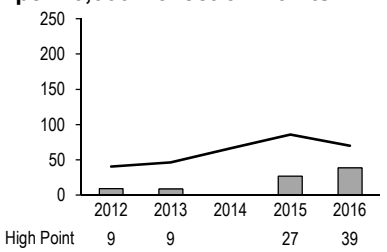
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
High Point	55	32		88	97
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
High Point	9	9		27	39
Average	41	46	66	86	70

Raleigh — Yard Waste/Leaf Collection

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Yard waste is picked up weekly at the curb in Raleigh. Yard waste must be bagged or containerized with a limit of fifteen bags. Bags must be clear or biodegradeable.

The city uses twelve three-person crews to collect yard waste on the same day as trash collection. Temporary crews may be added during leaf season as yard waste volume picks up.

Loose leaves are collected curbside during leaf season, which runs from November to February. Two sweeps of the City are completed during leaf season. The first sweep is usually completed by Christmas and the second sweep is usually completed by the end of February. Loose leaves must be placed at the street and must be free of debris to be collected.

A total of 45 employees made up of supervisors, support staff, and temporary employees are utilized during leaf season. This staff makes up seven crews of one to two for automated trucks and and eleven crews of three for pull behind leaf trucks. This makes eighteen total crews.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Lo

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Median Family Income	$68,678
U.S. Census 2010	

Service Profile

FTE Positions—Collection	88.0
FTE Positions—Other	7.0
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	2 sweeps
Collection Points	123,501
Tons Collected	
Yard Waste	16,754
Seasonal Leaves	12,750
Total Tons Collected	29,504
Monthly Service Fee	No

Full Cost Profile

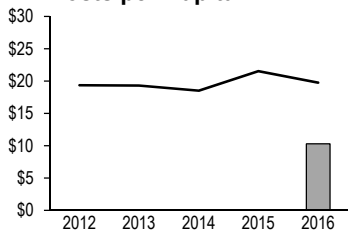
Cost Breakdown by Percentage	
Personal Services	26.8%
Operating Costs	60.9%
Capital Costs	12.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,215,637
Operating Costs	$2,766,652
Capital Costs	$560,383
TOTAL	$4,542,672

Raleigh — Yard Waste/Leaf Collection

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

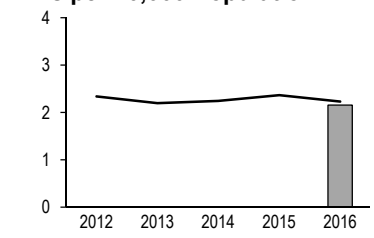
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Raleigh					$10.31
Average	$19.32	$19.28	$18.49	$21.50	$19.74

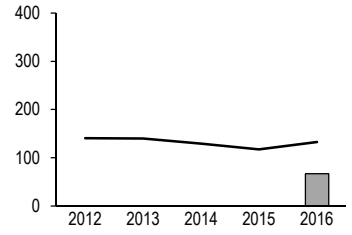
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					2.2
Average	2.3	2.2	2.2	2.4	2.2

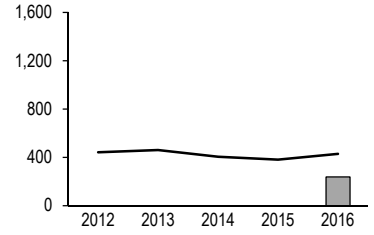
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					67
Average	140	140	129	117	133

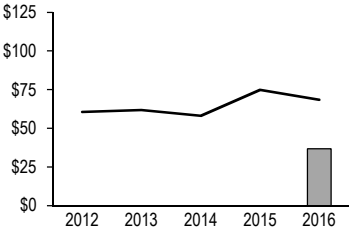
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					239
Average	442	459	405	380	428

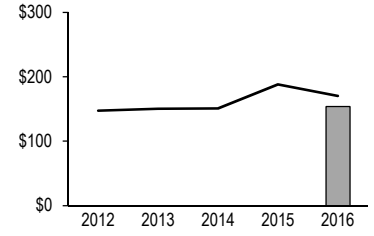
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



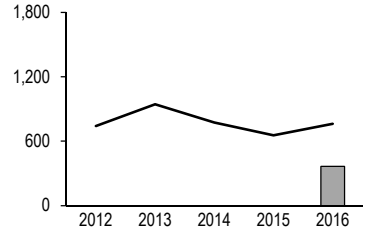
	2012	2013	2014	2015	2016
Raleigh					$37
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Raleigh					$154
Average	$147	$150	$151	$188	$170

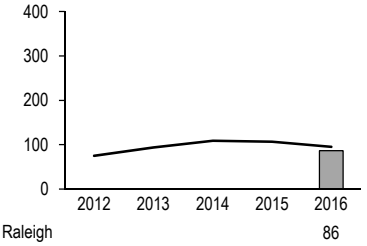
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Raleigh					364
Average	742	943	774	655	763

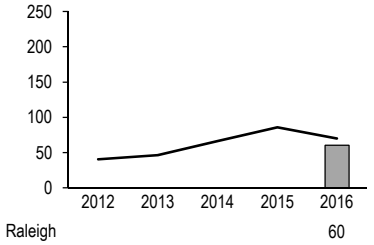
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					86
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Raleigh					60
Average	41	46	66	86	70

Salisbury — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 pickups 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. This service includes costs to manage a treatment and process site where material is ground up and a composting site. Three positions operate these sites and are included in the positions.

Conditions Affecting Service, Performance, and Costs

The startup of the Salisbury composting site caused some of the data on tons of material collected to be lost during the transition. The tonnage numbers reported for FY2014–15 are lower than the actual numbers but an adjustment was not possible.

Municipal Profile

Population (OSBM 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
Median Family Income	$40,192
U.S. Census 2010	

Service Profile

FTE Positions—Collection	8.0
FTE Positions—Other	0.75
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x 3 weeks
Collection Points	10,961
Tons Collected	
Yard Waste	9,562
Seasonal Leaves	2,366
Total Tons Collected	11,928
Monthly Service Fee	No

Full Cost Profile

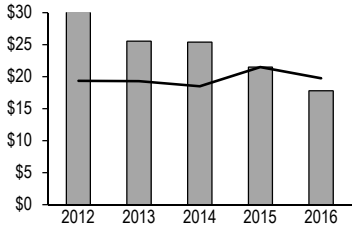
Cost Breakdown by Percentage	
Personal Services	58.5%
Operating Costs	30.1%
Capital Costs	11.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$356,970
Operating Costs	$183,708
Capital Costs	$69,048
TOTAL	$609,726

Salisbury — Yard Waste/Leaf Collection

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

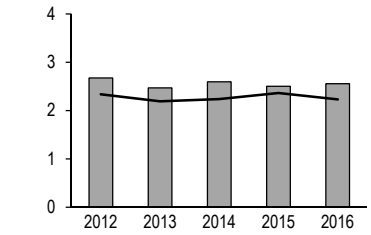
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Salisbury	$32.47	$25.52	$25.40	$21.46	$17.78
Average	$19.32	$19.28	$18.49	$21.50	$19.74

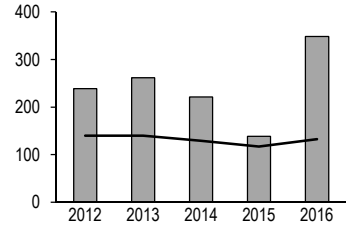
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	2.7	2.5	2.6	2.5	2.6
Average	2.3	2.2	2.2	2.4	2.2

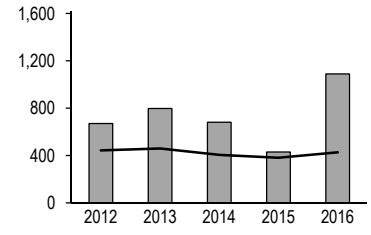
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	239	262	221	138	348
Average	140	140	129	117	133

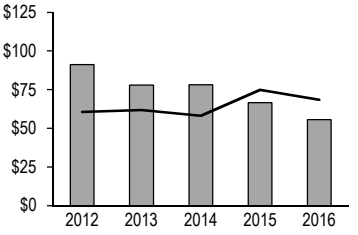
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	671	798	681	429	1,088
Average	442	459	405	380	428

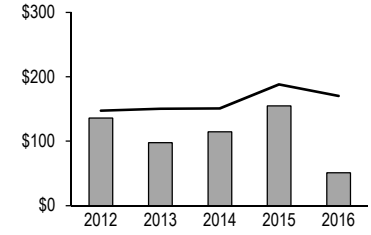
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



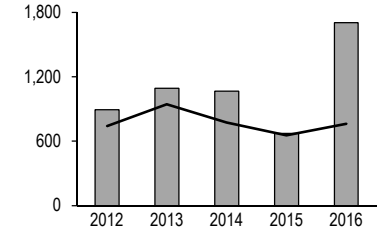
	2012	2013	2014	2015	2016
Salisbury	$91	$78	$78	$66	$56
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Salisbury	$136	$98	$115	$155	$51
Average	$147	$150	$151	$188	$170

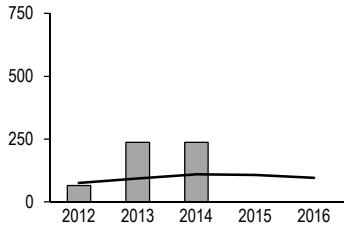
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Salisbury	894	1,094	1,066	672	1,704
Average	742	943	774	655	763

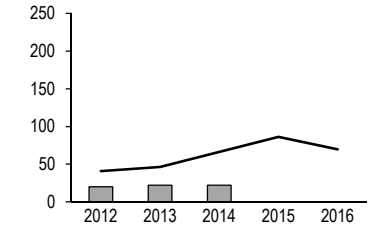
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	65	237	237		
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Salisbury	20	22	22		
Average	41	46	66	86	70

Wilson — Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 Hurricane Irene. An estimated extra 3,494 tons were collected after the storm.

Municipal Profile

Population (OSBM 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Median Family Income	$43,442
U.S. Census 2010	

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	19,975
Tons Collected	
Yard Waste	6,721
Seasonal Leaves	1,705
Total Tons Collected	8,426
Monthly Service Fee	Included in solid waste fee

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	46.8%
Operating Costs	32.0%
Capital Costs	21.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$496,307
Operating Costs	$339,776
Capital Costs	$225,147
TOTAL	$1,061,230

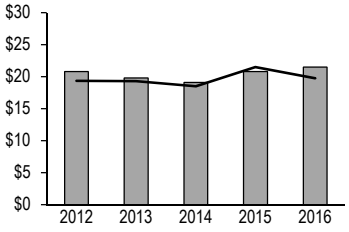
Wilson

Yard Waste/Leaf Collection

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

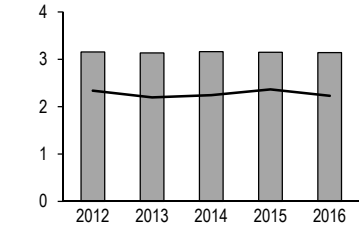
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Wilson	$20.80	$19.76	$19.07	$20.76	$21.50
Average	$19.32	$19.28	$18.49	$21.50	$19.74

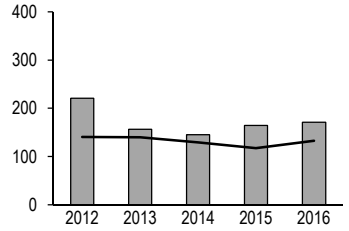
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	3.2	3.1	3.2	3.1	3.1
Average	2.3	2.2	2.2	2.4	2.2

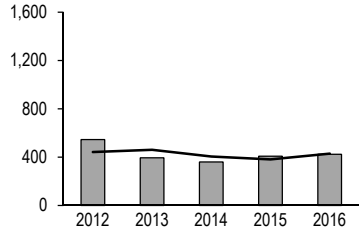
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	221	157	145	165	171
Average	140	140	129	117	133

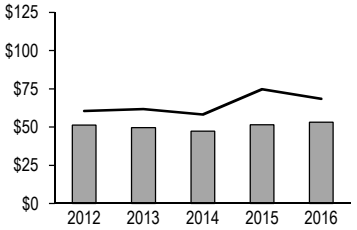
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	545	394	360	408	422
Average	442	459	405	380	428

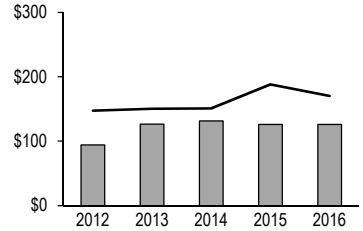
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



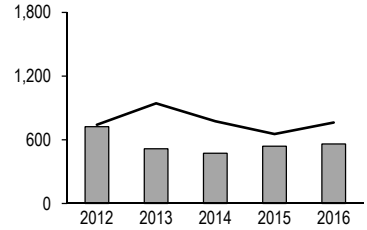
	2012	2013	2014	2015	2016
Wilson	$51	$50	$47	$51	$53
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Wilson	$94	$126	$132	$126	$126
Average	$147	$150	$151	$188	$170

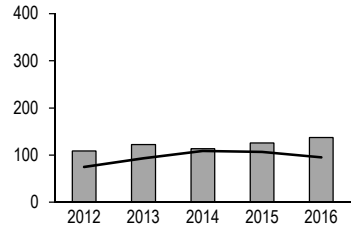
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Wilson	723	516	474	540	562
Average	742	943	774	655	763

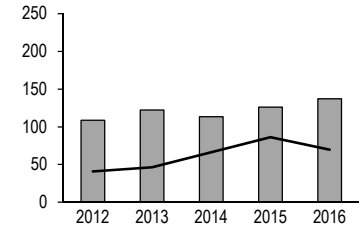
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	109	122	113	126	137
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Wilson	109	122	113	126	137
Average	41	46	66	86	70

Winston-Salem Yard Waste/Leaf Collection

Fiscal Year 2015–16

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 are 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 a total 77,907 collection points.

Municipal Profile

Population (OSBM 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Collection	74.5
FTE Positions—Other	1.4
Collection Frequency	
Yard Waste	1 x week
Seasonal Leaf Collection	1 x 3 weeks
Brush	1 x 10 days
Collection Points	77,907
Tons Collected	
Yard Waste	20,932
Seasonal Leaves	12,088
Total Tons Collected	33,020
Monthly Service Fee	$60 per year for cart

Full Cost Profile

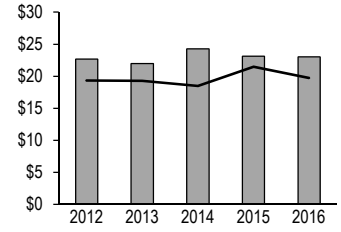
Cost Breakdown by Percentage	
Personal Services	50.1%
Operating Costs	30.5%
Capital Costs	19.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,755,730
Operating Costs	$1,676,243
Capital Costs	$1,068,722
TOTAL	$5,500,695

Winston-Salem Yard Waste/Leaf Collection

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

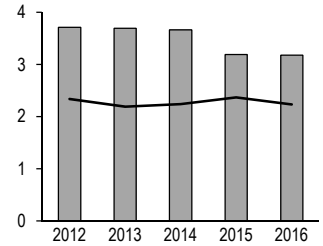
Resource Measures

Yard Waste and Leaf Collection Costs per Capita



	2012	2013	2014	2015	2016
Winston-Salem	$22.69	$21.99	$24.26	$23.11	$23.03
Average	$19.32	$19.28	$18.49	$21.50	$19.74

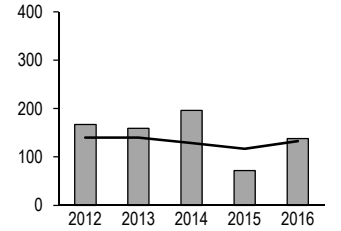
Yard Waste and Leaf Collection FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	3.7	3.7	3.7	3.2	3.2
Average	2.3	2.2	2.2	2.4	2.2

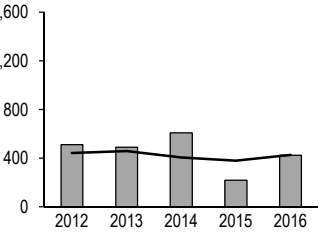
Workload Measures

Yard Waste and Leaf Tons Collected per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	167	159	196	72	138
Average	140	140	129	117	133

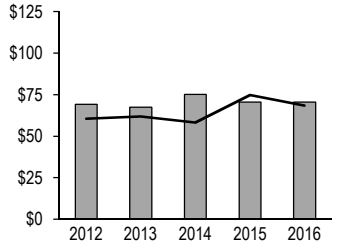
Yard Waste and Leaf Tons Collected per 1,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	510	489	607	219	424
Average	442	459	405	380	428

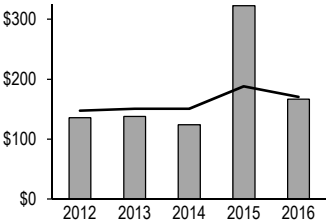
Efficiency Measures

Yard Waste and Leaf Collection Cost per Collection Point



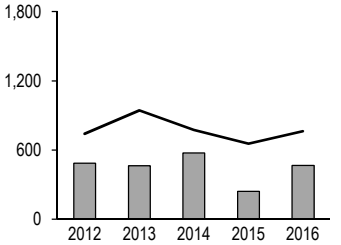
	2012	2013	2014	2015	2016
Winston-Salem	$69	$67	$75	$71	$71
Average	$60	$62	$58	$75	$68

Yard Waste and Leaf Collection Cost per Ton Collected



	2012	2013	2014	2015	2016
Winston-Salem	$136	$138	$124	$323	$167
Average	$147	$150	$151	$188	$170

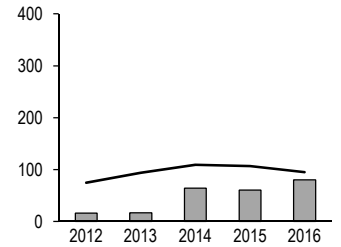
Yard Waste and Leaf Tons Collected per Collection FTE



	2012	2013	2014	2015	2016
Winston-Salem	484	464	575	241	466
Average	742	943	774	655	763

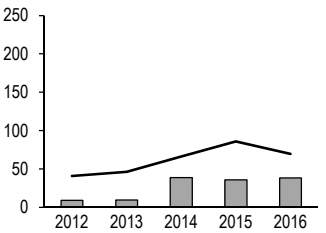
Effectiveness Measures

Collection Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	16	16	64	60	80
Average	75	94	109	107	95

Valid Complaints per 10,000 Collection Points



	2012	2013	2014	2015	2016
Winston-Salem	9	9	39	36	39
Average	41	46	66	86	70


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	Yes	70	14.5	79	IBR	41	653	694	1,398	40,494	1,025
Asheville	Yes	222	8.9	206	IBR	426	4,433	4,859	5,716	116,977	6,294
Burlington	Yes	127	10.2	155	UCR	323	2,241	2,564	3,679	70,274	3,010
Cary	Yes	187	10.7	134	IBR	123	1,966	2,089	2,650	141,344	3,301
Chapel Hill	No	119	12.2	75	UCR	98	1,453	1,551	3,372	38,009	1,966
Charlotte	Yes	1,840	12.8	1544	UCR	6,030	33,336	39,366	37,748	1,251,592	27,648
Concord	No	172.25	9.7	200	IBR	112	2,352	2,464	2,205	110,733	4,078
Greensboro	Yes	673	10.4	235	IBR	1,414	10,175	11,589	15,551	220,216	9,842
Greenville	Yes	188	12.0	175	UCR	547	3,611	4,158	4,139	86,249	4,750
Hickory	No	116	9.5	156	IBR	145	2,041	2,186	3,357	90,929	3,706
High Point	No	239	10.0	239	UCR	304	3,467	3,771	4,703	120,830	3,502
Raleigh	Yes	799	11.2	850	NIBRS	1,614	11,672	13,286	NA	407,752	27,566
Salisbury	Yes	81	9.7	92	IBR	202	1,591	1,793	2,521	41,606	1,867
Wilson	Yes	121	9.7	128	UCR	259	1,976	2,235	2,906	81,884	2,522
Winston-Salem	Yes	570	11.9	473	IBR	2,041	13,694	15,735	35,663	233,434	10,257

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

Apex Police Services

Fiscal Year 2015–16

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 seventy sworn officer positions authorized for the year, with an average length of service of over fourteen 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 284 Part I cases in FY 2015–16.

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

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Median Family Income	$97,201
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	70.0
FTE Positions—Other	6.8
Marked and Unmarked Patrol Vehicles	79
Part I Crimes Reported	
Homicide	1
Rape	3
Robbery	15
Assault	22
Burglary	94
Larceny	538
Auto Theft	20
Arson	1
TOTAL	694
Part II Crimes Reported	1,398
Part I Crimes Cleared	
Persons	29
Property	255
TOTAL	284
Reporting Format	IBR
Number of Calls Dispatched	40,494
Number of Traffic Accidents	1,025
Property Damage for Accidents	$4,514,727

Full Cost Profile

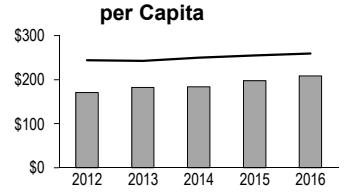
Cost Breakdown by Percentage	
Personal Services	69.3%
Operating Costs	19.9%
Capital Costs	10.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,470,185
Operating Costs	$1,861,224
Capital Costs	$1,000,751
TOTAL	$9,332,160

Apex — Police Services

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

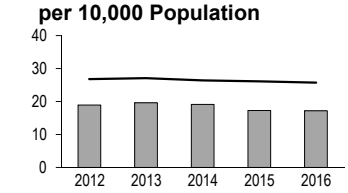
Resource Measures

Police Services Costs per Capita



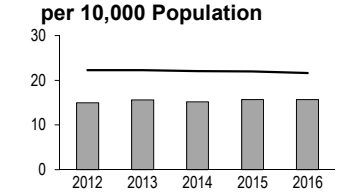
	2012	2013	2014	2015	2016
Apex	$171	$182	$184	$197	$209
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Apex	18.9	19.6	19.1	17.3	17.2
Average	26.8	27.0	26.4	26.1	25.7

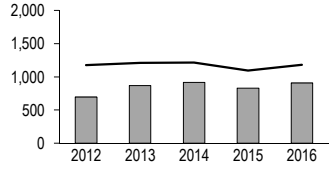
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Apex	15.0	15.6	15.1	15.7	15.6
Average	22.3	22.3	22.0	22.0	21.6

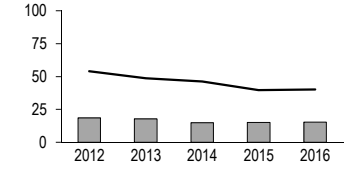
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Apex	694	866	915	830	905
Average	1,178	1,211	1,214	1,094	1,182

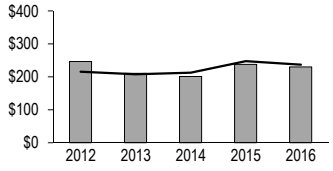
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Apex	18.5	17.9	14.8	15.2	15.5
Average	54.2	48.8	46.4	39.8	40.2

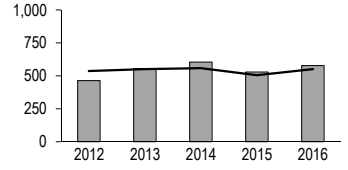
Efficiency Measures

Police Services Cost per Call Dispatched



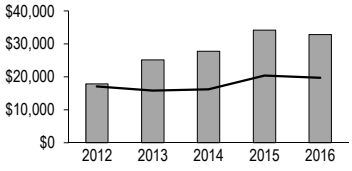
	2012	2013	2014	2015	2016
Apex	$247	$211	$201	$238	$230
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



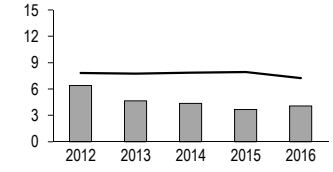
	2012	2013	2014	2015	2016
Apex	463	555	604	529	578
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Apex	$17,842	$25,093	$27,720	$34,131	$32,860
Average	$17,093	$15,771	$16,220	$20,374	$19,696

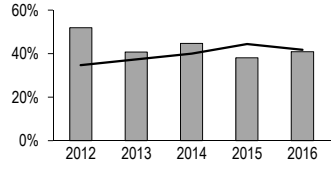
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Apex	6.4	4.7	4.4	3.7	4.1
Average	7.8	7.8	7.9	7.9	7.2

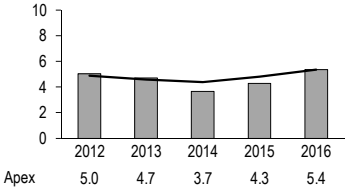
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Apex	51.9%	40.7%	44.7%	38.1%	40.9%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Apex	5.0	4.7	3.7	4.3	5.4
Average	4.9	4.6	4.4	4.8	5.4

Asheville — Police Services

Fiscal Year 2015–16

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 222 sworn officer positions authorized for the year, with an average length of service of about 8.9 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 Mondays 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 1,884 Part I cases in FY 2015–16. 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 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Median Family Income	$53,350
U.S. Census 2010	

Service Profile

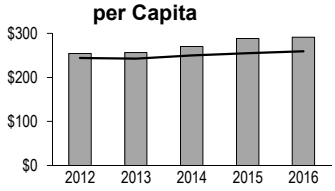
FTE Positions—Sworn	222.0
FTE Positions—Other	62.0
Marked and Unmarked Patrol Vehicles	206
Part I Crimes Reported	
Homicide	7
Rape	42
Robbery	141
Assault	236
Burglary	873
Larceny	3,323
Auto Theft	226
Arson	11
TOTAL	4,859
Part II Crimes Reported	5,716
Part I Crimes Cleared	
Persons	314
Property	1,570
TOTAL	1,884
Reporting Format	IBR
Number of Calls Dispatched	116,977
Number of Traffic Accidents	6,294
Property Damage for Accidents	$23,237,959

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	65.1%
Operating Costs	25.3%
Capital Costs	9.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,211,370
Operating Costs	$6,682,261
Capital Costs	$2,554,243
TOTAL	$26,447,874

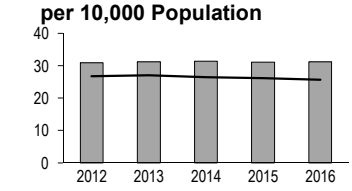
Resource Measures

Police Services Costs per Capita



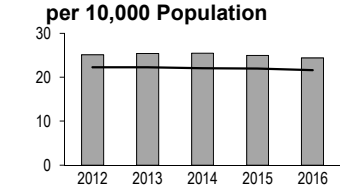
	2012	2013	2014	2015	2016
Asheville	$254	$256	$270	$288	$291
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	30.9	31.2	31.4	31.1	31.2
Average	26.8	27.0	26.4	26.1	25.7

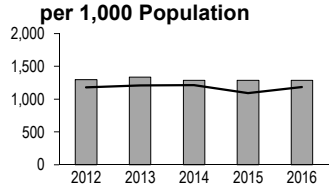
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	25.1	25.4	25.5	25.0	24.4
Average	22.3	22.3	22.0	22.0	21.6

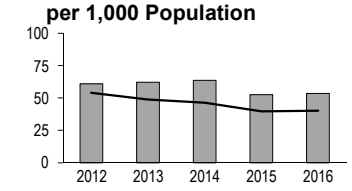
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	1,299	1,338	1,289	1,288	1,287
Average	1,178	1,211	1,214	1,094	1,182

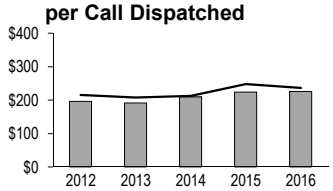
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	60.9	62.1	63.6	52.7	53.4
Average	54.2	48.8	46.4	39.8	40.2

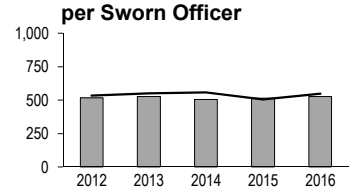
Efficiency Measures

Police Services Cost per Call Dispatched



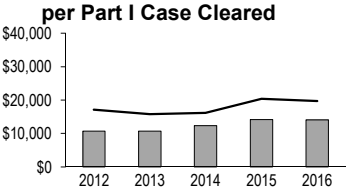
	2012	2013	2014	2015	2016
Asheville	$196	$191	$209	$224	$226
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



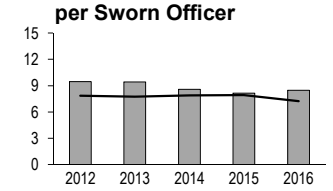
	2012	2013	2014	2015	2016
Asheville	517	527	506	515	527
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Asheville	$10,698	$10,684	$12,350	$14,133	$14,038
Average	$17,093	$15,771	$16,220	$20,374	$19,696

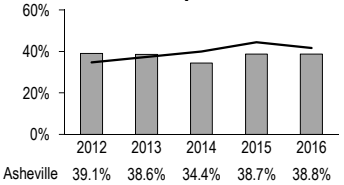
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Asheville	9.5	9.4	8.6	8.2	8.5
Average	7.8	7.8	7.9	7.9	7.2

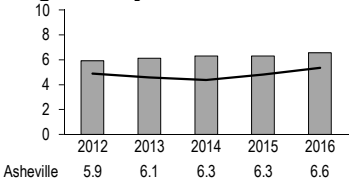
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Asheville	39.1%	38.6%	34.4%	38.7%	38.8%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Asheville	5.9	6.1	6.3	6.3	6.6
Average	4.9	4.6	4.4	4.8	5.4

Burlington Police Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Burlington Police Department provides an array of police services, including patrol, investigations, a telephone-based reporting unit, a canine unit, a traffic unit, a special response team, a drug enforcement unit, DARE and school resource officers, and other programs.

The town had 127 sworn officer positions authorized for the year, with an average length of service of 10.2 years. Police services occupies its own separate building. There are also several substations that are not regularly staffed.

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 2,093 hours per year (13 Kelly hours). The schedule includes eighty-four court hours and does not include the forty training hours that are accomplished on overtime. 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 one Assistant Chief and one Captain 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 728 Part I cases in FY 2015–16.

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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
Median Family Income U.S. Census 2010	$46,461

Service Profile

FTE Positions—Sworn	127.0
FTE Positions—Other	33.0
Marked and Unmarked Patrol Vehicles	155
Part I Crimes Reported	
Homicide	6
Rape	12
Robbery	69
Assault	236
Burglary	469
Larceny	1,667
Auto Theft	100
Arson	5
TOTAL	2,564
Part II Crimes Reported	3,679
Part I Crimes Cleared	
Persons	225
Property	503
TOTAL	728
Reporting Format	UCR
Number of Calls Dispatched	70,274
Number of Traffic Accidents	3,010
Property Damage for Accidents	$11,100,000

Full Cost Profile

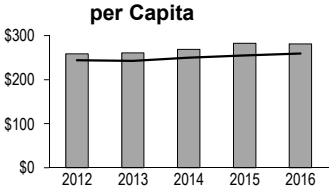
Cost Breakdown by Percentage	
Personal Services	78.4%
Operating Costs	11.5%
Capital Costs	10.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$11,505,402
Operating Costs	$1,690,332
Capital Costs	$1,487,874
TOTAL	$14,683,608

Burlington — Police Services

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

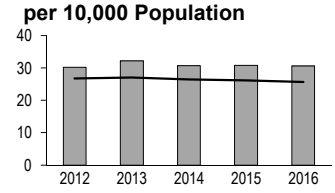
Resource Measures

Police Services Costs per Capita



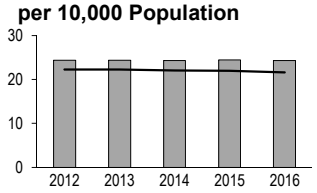
	2012	2013	2014	2015	2016
Burlington	$258	$261	$269	$283	$281
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	30.2	32.2	30.7	30.8	30.6
Average	26.8	27.0	26.4	26.1	25.7

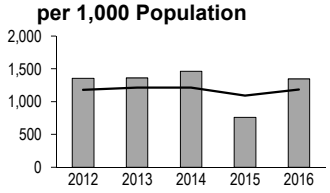
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	24.4	24.4	24.3	24.5	24.3
Average	22.3	22.3	22.0	22.0	21.6

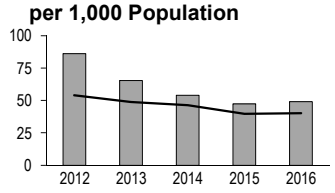
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	1,358	1,360	1,462	762	1,345
Average	1,178	1,211	1,214	1,094	1,182

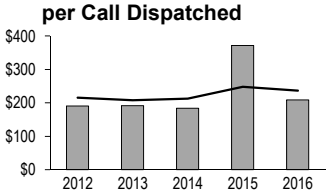
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	86.1	65.3	54.0	47.5	49.1
Average	54.2	48.8	46.4	39.8	40.2

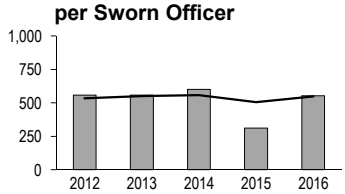
Efficiency Measures

Police Services Cost per Call Dispatched



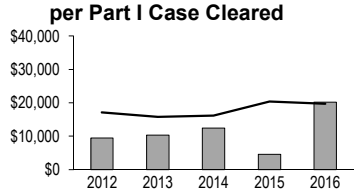
	2012	2013	2014	2015	2016
Burlington	$190	$192	$184	$371	$209
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



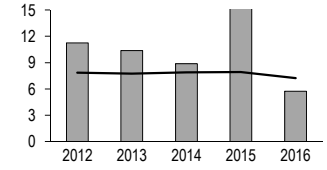
	2012	2013	2014	2015	2016
Burlington	557	557	601	311	553
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Burlington	$9,431	$10,299	$12,425	$4,615	$20,170
Average	$17,093	$15,771	$16,220	$20,374	$19,696

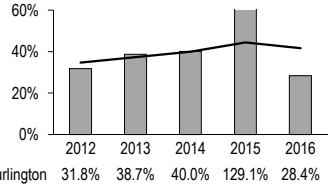
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Burlington	11.2	10.4	8.9	25.1	5.7
Average	7.8	7.8	7.9	7.9	7.2

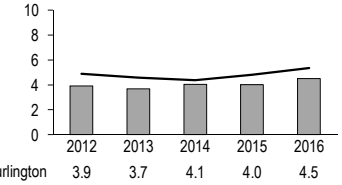
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Burlington	31.8%	38.7%	40.0%	129.1%	28.4%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Burlington	3.9	3.7	4.1	4.0	4.5
Average	4.9	4.6	4.4	4.8	5.4

Fiscal Year 2015–16

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 187 sworn officer positions authorized for the fiscal year, with an average length of service of 10.7 years. The primary police headquarters is located in a three-story building shared with the town's technology services department. The department also operates two 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 705 Part I cases in FY 2015–16.

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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Median Family Income	$108,956
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	187.0
FTE Positions—Other	15.5
Marked and Unmarked Patrol Vehicles	134
Part I Crimes Reported	
Homicide	3
Rape	18
Robbery	43
Assault	59
Burglary	319
Larceny	1,578
Auto Theft	62
Arson	7
TOTAL	2,089
Part II Crimes Reported	2,650
Part I Crimes Cleared	
Persons	85
Property	620
TOTAL	705
Reporting Format	IBR
Number of Calls Dispatched	141,344
Number of Traffic Accidents	3,301
Property Damage for Accidents	$627,925

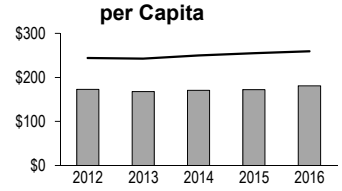
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.3%
Operating Costs	19.4%
Capital Costs	5.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$20,742,095
Operating Costs	$5,343,739
Capital Costs	$1,467,497
TOTAL	$27,553,331

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

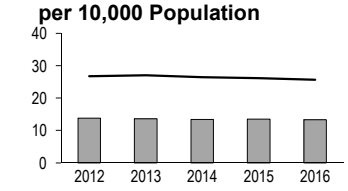
Resource Measures

Police Services Costs per Capita



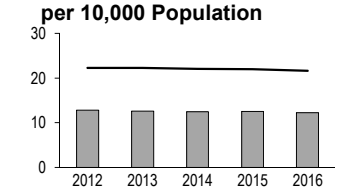
	2012	2013	2014	2015	2016
Cary	$173	$168	$171	$172	$181
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Cary	13.8	13.6	13.4	13.5	13.3
Average	26.8	27.0	26.4	26.1	25.7

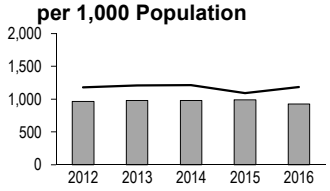
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Cary	12.8	12.6	12.4	12.5	12.3
Average	22.3	22.3	22.0	22.0	21.6

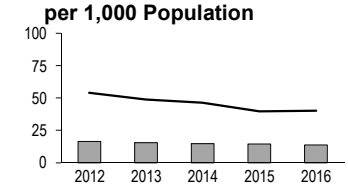
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Cary	964	979	981	990	926
Average	1,178	1,211	1,214	1,094	1,182

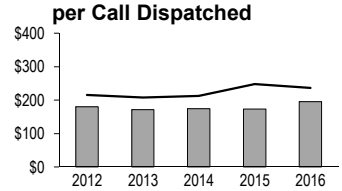
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Cary	16.5	15.6	14.7	14.4	13.7
Average	54.2	48.8	46.4	39.8	40.2

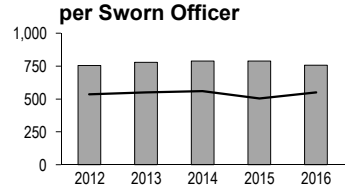
Efficiency Measures

Police Services Cost per Call Dispatched



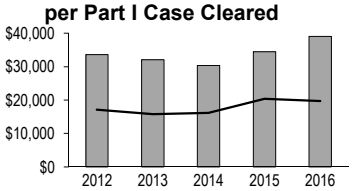
	2012	2013	2014	2015	2016
Cary	$180	$171	$174	$174	$195
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



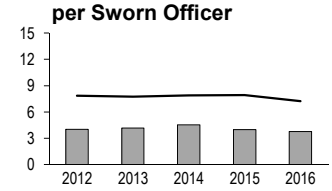
	2012	2013	2014	2015	2016
Cary	754	779	789	789	756
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Cary	$33,603	$32,099	$30,388	$34,483	$39,083
Average	$17,093	$15,771	$16,220	$20,374	$19,696

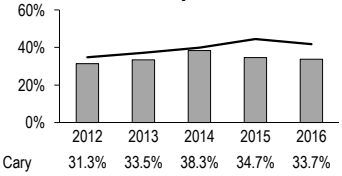
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Cary	4.0	4.2	4.5	4.0	3.8
Average	7.8	7.8	7.9	7.9	7.2

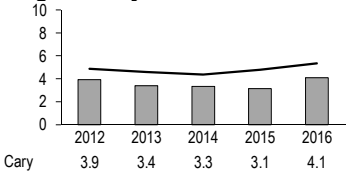
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Cary	31.3%	33.5%	38.3%	34.7%	33.7%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Cary	3.9	3.4	3.3	3.1	4.1
Average	4.9	4.6	4.4	4.8	5.4

Chapel Hill — Police Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill Police Department provides an array of police services, including patrol, investigations, a special response unit, bicycle patrol, drug enforcement, and a canine unit.

The town had 119 sworn officer positions authorized for the fiscal year, with an average length of service of 12.15 years. Police headquarters is located in a separate building. The department also operates four substations. Three of the substations function as offices for community services, and the fourth is located downtown and functions as a space for report processing but is not regularly staffed.

In order to provide continuous service to the citizens of Chapel Hill, officers work twelve hour shifts and are assigned to either day (6 a.m. to 6 p.m.) or night (6 p.m. to 6 a.m.) shifts. Each shift selects a number of officers to report 1-2 hours early to cover calls that occur leading up to shift change.

Vehicles are allocated to divisions in the department and are assigned by unit level supervisors. Individual assignments are made for certain positions, but the only officers allowed to take home vehicles are K9 units and administrative oficers and on-call investigators.

The town defines a high priority call as one that requires immediate police attention to protect persons or render emergency aid.

The police department was successful in clearing a total of 482 Part I cases in FY 2015–16.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Reported cases cleared is up 68 percent for Part I crimes over the prior year. This has been due to an improvement in data tracking.

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 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Median Family Income	$61,405
U.S. Census 2010	

Service Profile

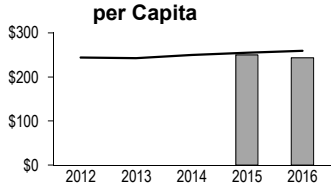
FTE Positions—Sworn	119.0
FTE Positions—Other	17.0
Marked and Unmarked Patrol Vehicles	75
Part I Crimes Reported	
Homicide	1
Rape	13
Robbery	38
Assault	46
Burglary	337
Larceny	1,044
Auto Theft	71
Arson	1
TOTAL	1,551
Part II Crimes Reported	3,372
Part I Crimes Cleared	
Persons	62
Property	420
TOTAL	482
Reporting Format	UCR
Number of Calls Dispatched	38,009
Number of Traffic Accidents	1,966
Property Damage for Accidents	$5,069,366

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.6%
Operating Costs	22.1%
Capital Costs	7.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,237,466
Operating Costs	$3,199,283
Capital Costs	$1,053,708
TOTAL	$14,490,457

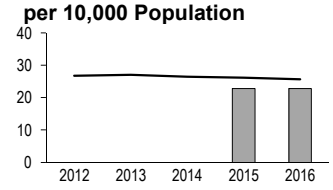
Resource Measures

Police Services Costs per Capita



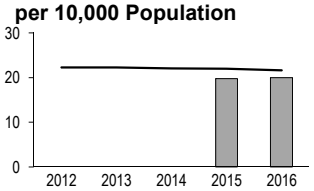
	2012	2013	2014	2015	2016
Chapel Hill				$250	$243
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				22.8	22.8
Average	26.8	27.0	26.4	26.1	25.7

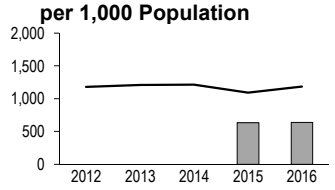
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				19.7	20.0
Average	22.3	22.3	22.0	22.0	21.6

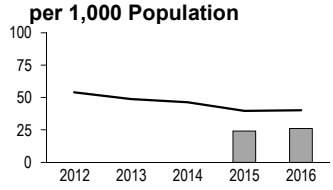
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				633	638
Average	1,178	1,211	1,214	1,094	1,182

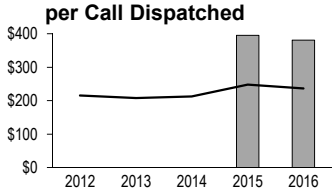
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				24.1	26.0
Average	54.2	48.8	46.4	39.8	40.2

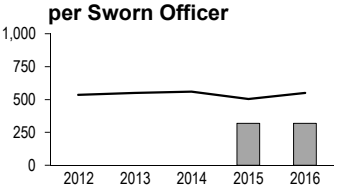
Efficiency Measures

Police Services Cost per Call Dispatched



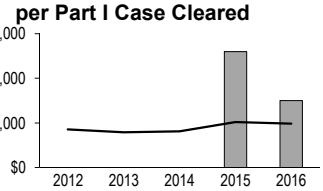
	2012	2013	2014	2015	2016
Chapel Hill				$395	$381
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



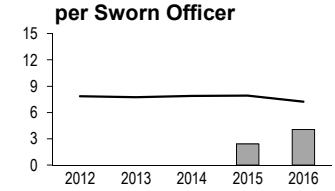
	2012	2013	2014	2015	2016
Chapel Hill				320	319
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Chapel Hill				$52,020	$30,063
Average	$17,093	$15,771	$16,220	$20,374	$19,696

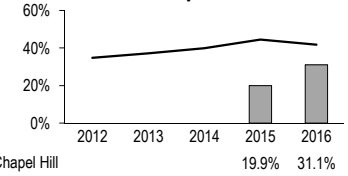
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Chapel Hill				2.4	4.1
Average	7.8	7.8	7.9	7.9	7.2

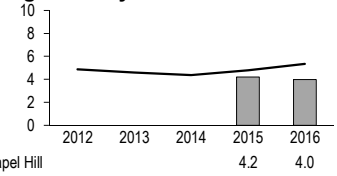
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Chapel Hill				19.9%	31.1%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Chapel Hill				4.2	4.0
Average	4.9	4.6	4.4	4.8	5.4

Charlotte — Police Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

In 1993 the Charlotte Police Department and the Mecklenburg Police Department merged to form the Charlotte-Mecklenburg Police Department (CMPD). The CMPD's law enforcement philosophy is focused on effective crime control and strong community presence which is enhanced through the integration of crime analysis and technologically advanced systems that increase the effectiveness of the Department. The CMPD serves a jurisdiction measuring 438 square miles with a 2016 jurisdictional population of 847,700 and 1,840 sworn officers. The CMPD is organized into five Groups each led by a Deputy Chief. These five groups include the Administrative Services Group, Field Services North Group, Field Services South Group, Investigative Services Group, and the Support Services Group. The CMPD provides multitude of police services, including but not limited to, Criminal Intelligence and Analysis, Vive & Narcotics, Domestic Violence, Homicide, Crimes Against Children, K-9, Youth Services, Crime Laboratory, Animal Care & Control, Property & Evidence Management, Crime Scene Search, and Electronic Monitoring.

Homicide investigators work two shifts, and other detectives are placed on a rotating callback schedule as directed by supervisors. Officers not assigned to special units are scheduled through a Managing Police Performance (MPP) system that uses models to create schedules during different time periods to best serve needs across thirteen patrol divisions for six four-hour time blocks. The system model information is then entered into a standard five-shift configuration to provide the best distribution of officers to meet needs across a full day.

The department defines high priority emergency calls as those that are life threatening, in progress, or where a suspect is on scene. Response times do not include self-initiated calls. The average response time to high priority calls reflects the response time of the first arriving unit.

Charlotte-Mecklenburg Police Department assigns vehicles on patrol as one-officer cars. The department has a take-home car policy which includes take-home vehicles issued for the purposes of after-hours recall to a crime scene or critical incident response capability. Cars are also allowed to be taken home for situations which promote greater police presence using marked patrol vehicles.

Conditions Affecting Service, Performance, and Costs

Charlotte did not participate in the Benchmarking Project for Police Services for the years before FY 2015–16. No data are available for the earlier years.

The reported data on crimes are for calendar year 2015, but the operational data are for FY 2015–16.

Municipal Profile

Population	847,700
Land Area (Square Miles)	438.00
Persons per Square Mile	1,935
Median Family Income	$61,405
U.S. Census 2010	

Service Profile

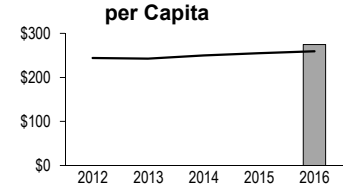
FTE Positions—Sworn	1,840.00
FTE Positions—Other	478.0
Marked and Unmarked Patrol Vehicles	1544
Part I Crimes Reported	
Homicide	60
Rape	286
Robbery	1,949
Assault	3,735
Burglary	6,798
Larceny	24,084
Auto Theft	2,230
Arson	224
TOTAL	39,366
Part II Crimes Reported	37,748
Part I Crimes Cleared	
Persons	2,681
Property	6,612
TOTAL	9,293
Reporting Format	UCR
Number of Calls Dispatched	1,251,592
Number of Traffic Accidents	27,648
Property Damage for Accidents	NA

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	87.7%
Operating Costs	11.5%
Capital Costs	0.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$204,414,526
Operating Costs	$26,721,377
Capital Costs	$1,870,917
TOTAL	$233,006,820

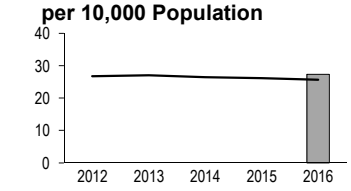
Resource Measures

Police Services Costs per Capita



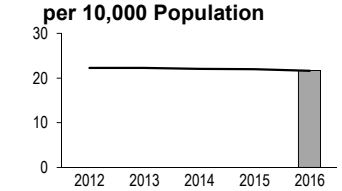
	2012	2013	2014	2015	2016
Charlotte					$275
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte					27.3
Average	26.8	27.0	26.4	26.1	25.7

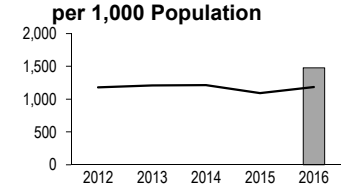
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte					21.7
Average	22.3	22.3	22.0	22.0	21.6

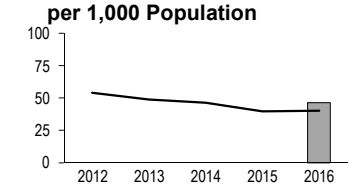
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte					1,476
Average	1,178	1,211	1,214	1,094	1,182

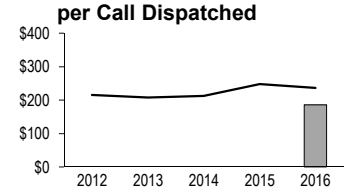
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte					46.4
Average	54.2	48.8	46.4	39.8	40.2

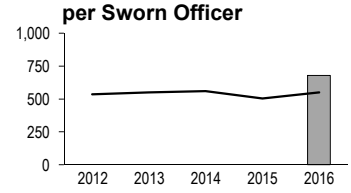
Efficiency Measures

Police Services Cost per Call Dispatched



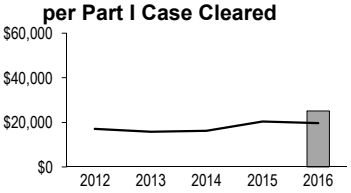
	2012	2013	2014	2015	2016
Charlotte					$186
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



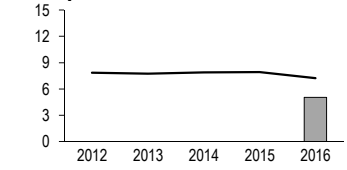
	2012	2013	2014	2015	2016
Charlotte					680
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Charlotte					$25,073
Average	$17,093	$15,771	$16,220	$20,374	$19,696

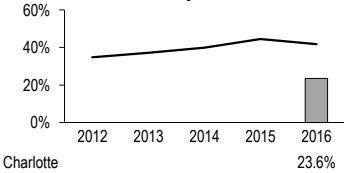
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Charlotte					5.1
Average	7.8	7.8	7.9	7.9	7.2

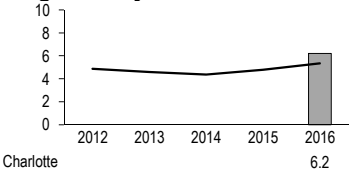
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Charlotte					23.6%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Charlotte					6.2
Average	4.9	4.6	4.4	4.8	5.4

Concord Police Services

Fiscal Year 2015–16

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 172.25 sworn officer positions authorized for the fiscal year, with an average length of service of 9.7 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 1,939 Part I cases in FY 2015–16.

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.

Concord's high clearance rate has been driven by a focus on clearing larceny cases by arrest or by exhausting leads as quickly as possible. Since larcenies are the largest category of Part I crimes, this effort has substantially improved the overall clearance rate.

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Median Family Income	$63,643
U.S. Census 2010	

Service Profile

FTE Positions—Sworn	172.25
FTE Positions—Other	20.0
Marked and Unmarked Patrol Vehicles	200
Part I Crimes Reported	
Homicide	5
Rape	18
Robbery	52
Assault	37
Burglary	309
Larceny	1,910
Auto Theft	124
Arson	9
TOTAL	2,464
Part II Crimes Reported	2,205
Part I Crimes Cleared	
Persons	122
Property	1,817
TOTAL	1,939
Reporting Format	IBR
Number of Calls Dispatched	110,733
Number of Traffic Accidents	4,078
Property Damage for Accidents	$13,571,764

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	67.1%
Operating Costs	23.0%
Capital Costs	9.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$13,013,469
Operating Costs	$4,459,917
Capital Costs	$1,914,264
TOTAL	$19,387,650

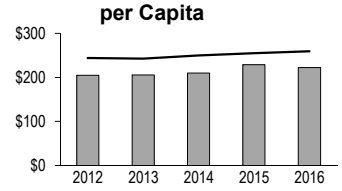
Concord

Police Services

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

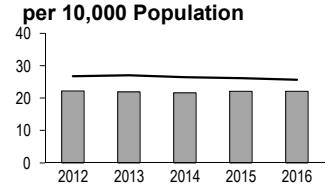
Resource Measures

Police Services Costs per Capita



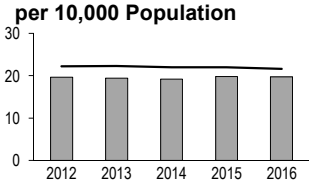
	2012	2013	2014	2015	2016
Concord	$205	$205	$210	$229	$223
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Concord	22.2	21.9	21.6	22.2	22.1
Average	26.8	27.0	26.4	26.1	25.7

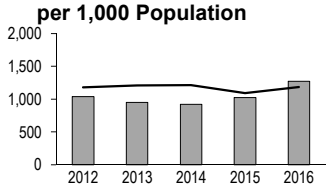
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Concord	19.7	19.4	19.2	19.8	19.8
Average	22.3	22.3	22.0	22.0	21.6

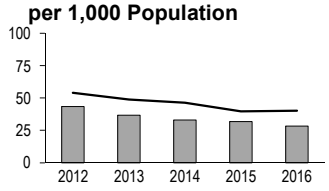
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Concord	1,038	952	923	1,024	1,271
Average	1,178	1,211	1,214	1,094	1,182

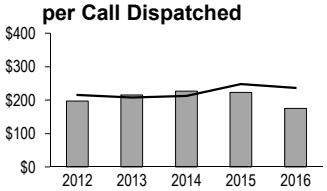
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Concord	43.4	36.7	33.0	31.8	28.3
Average	54.2	48.8	46.4	39.8	40.2

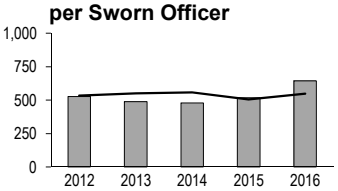
Efficiency Measures

Police Services Cost per Call Dispatched



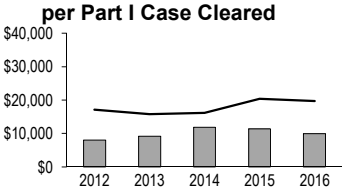
	2012	2013	2014	2015	2016
Concord	$197	$216	$227	$223	$175
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



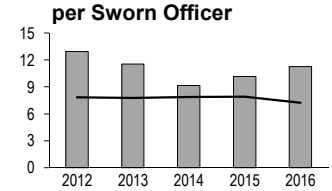
	2012	2013	2014	2015	2016
Concord	527	490	480	517	643
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Concord	$8,032	$9,161	$11,882	$11,381	$9,999
Average	$17,093	$15,771	$16,220	$20,374	$19,696

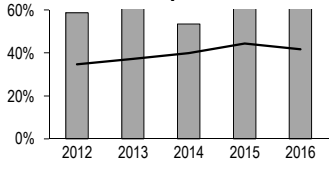
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Concord	12.9	11.5	9.2	10.1	11.3
Average	7.8	7.8	7.9	7.9	7.2

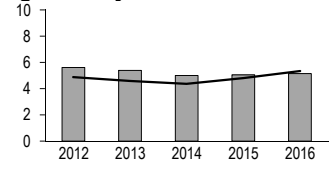
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Concord	58.7%	61.2%	53.5%	63.1%	78.7%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Concord	5.6	5.4	5.0	5.1	5.2
Average	4.9	4.6	4.4	4.8	5.4

Greensboro Police Services

Fiscal Year 2015–16

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 just over ten 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 3,408 Part I cases in FY 2015–16.

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.

Municipal Profile

Population (OSBM 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
Median Family Income U.S. Census 2010	$52,752

Service Profile

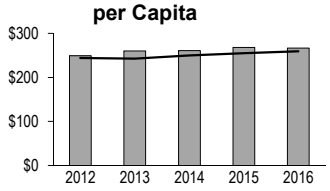
FTE Positions—Sworn	673.0
FTE Positions—Other	113.0
Marked and Unmarked Patrol Vehicles	235
Part I Crimes Reported	
Homicide	23
Rape	66
Robbery	570
Assault	755
Burglary	2,321
Larceny	7,190
Auto Theft	554
Arson	110
TOTAL	11,589
Part II Crimes Reported	15,551
Part I Crimes Cleared	
Persons	621
Property	2,787
TOTAL	3,408
Reporting Format	IBR
Number of Calls Dispatched	220,216
Number of Traffic Accidents	9,842
Property Damage for Accidents	$35,372,534

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	78.5%
Operating Costs	21.5%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$59,162,857
Operating Costs	$16,179,267
Capital Costs	$0
TOTAL	$75,342,124

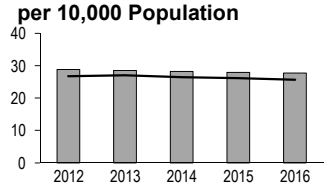
Resource Measures

Police Services Costs per Capita



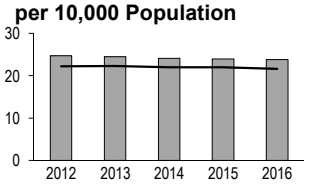
	2012	2013	2014	2015	2016
Greensboro	$249	$260	$260	$268	$266
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	28.8	28.5	28.2	28.0	27.8
Average	26.8	27.0	26.4	26.1	25.7

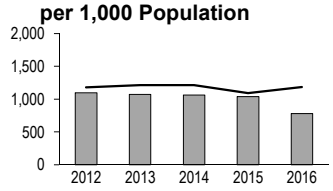
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	24.7	24.5	24.2	24.0	23.8
Average	22.3	22.3	22.0	22.0	21.6

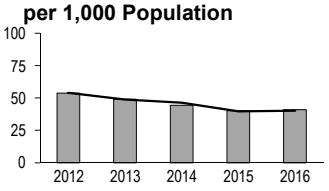
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	1,095	1,073	1,064	1,036	779
Average	1,178	1,211	1,214	1,094	1,182

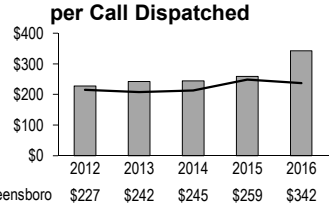
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	53.8	49.0	44.4	40.3	41.0
Average	54.2	48.8	46.4	39.8	40.2

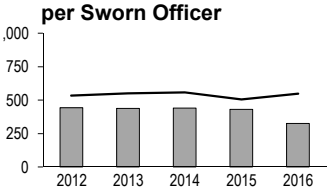
Efficiency Measures

Police Services Cost per Call Dispatched



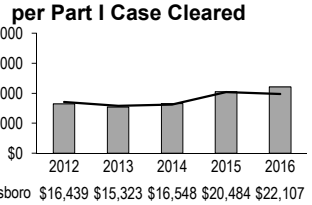
	2012	2013	2014	2015	2016
Greensboro	$227	$242	$245	$259	$342
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



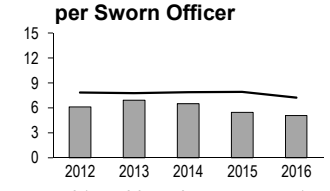
	2012	2013	2014	2015	2016
Greensboro	443	439	441	432	327
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Greensboro	$16,439	$15,323	$16,548	$20,484	$22,107
Average	$17,093	$15,771	$16,220	$20,374	$19,696

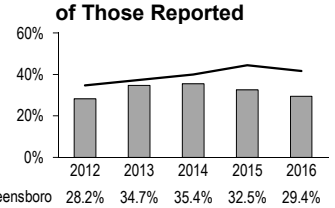
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Greensboro	6.1	6.9	6.5	5.5	5.1
Average	7.8	7.8	7.9	7.9	7.2

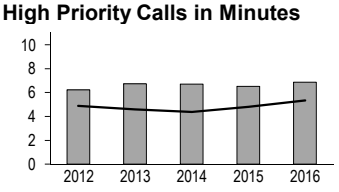
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Greensboro	28.2%	34.7%	35.4%	32.5%	29.4%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Greensboro	6.2	6.7	6.7	6.5	6.9
Average	4.9	4.6	4.4	4.8	5.4

Greenville Police Services

Fiscal Year 2015–16

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 188 sworn officer positions authorized for the fiscal year, with an average length of service of twelve 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 administative 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 1,340 Part I cases in FY 2015–16.

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 times.

Municipal Profile

Population (OSBM 2015)	87,436
Land Area (Square Miles)	34.90
Persons per Square Mile	2,505
Median Family Income U.S. Census 2010	$50,395

Service Profile

FTE Positions—Sworn	188.0
FTE Positions—Other	50.0
Marked and Unmarked Patrol Vehicles	175
Part I Crimes Reported	
Homicide	6
Rape	29
Robbery	154
Assault	358
Burglary	804
Larceny	2,697
Auto Theft	102
Arson	8
TOTAL	4,158
Part II Crimes Reported	4,139
Part I Crimes Cleared	
Persons	238
Property	1,102
TOTAL	1,340
Reporting Format	UCR
Number of Calls Dispatched	86,249
Number of Traffic Accidents	4,750
Property Damage for Accidents	$13,700,000

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	64.2%
Operating Costs	27.4%
Capital Costs	8.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,190,228
Operating Costs	$7,331,026
Capital Costs	$2,268,673
TOTAL	$26,789,927

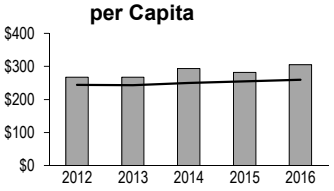
Greenville

Police Services

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

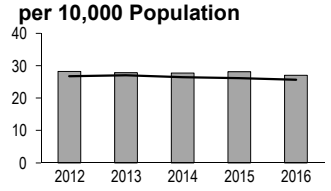
Resource Measures

Police Services Costs per Capita



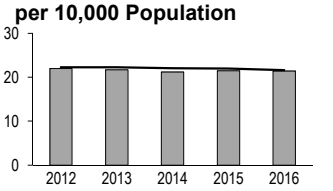
	2012	2013	2014	2015	2016
Greenville	$267	$267	$293	$281	$305
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	28.2	27.9	27.7	28.1	27.1
Average	26.8	27.0	26.4	26.1	25.7

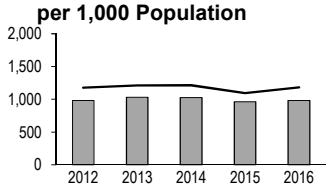
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	22.0	21.7	21.2	21.5	21.4
Average	22.3	22.3	22.0	22.0	21.6

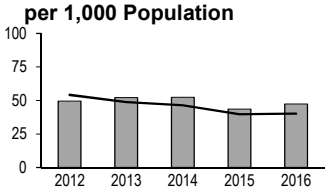
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	983	1,031	1,023	964	981
Average	1,178	1,211	1,214	1,094	1,182

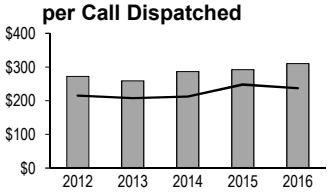
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	49.5	52.2	52.3	43.6	47.3
Average	54.2	48.8	46.4	39.8	40.2

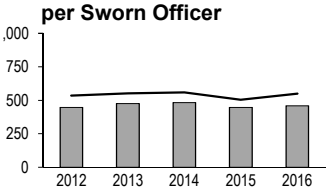
Efficiency Measures

Police Services Cost per Call Dispatched



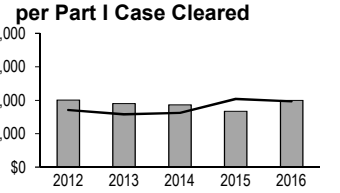
	2012	2013	2014	2015	2016
Greenville	$272	$259	$287	$292	$311
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



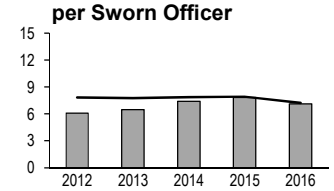
	2012	2013	2014	2015	2016
Greenville	447	475	482	448	459
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Greenville	$20,020	$18,963	$18,646	$16,689	$19,992
Average	$17,093	$15,771	$16,220	$20,374	$19,696

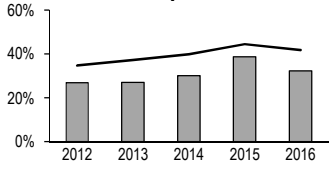
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Greenville	6.1	6.5	7.4	7.8	7.1
Average	7.8	7.8	7.9	7.9	7.2

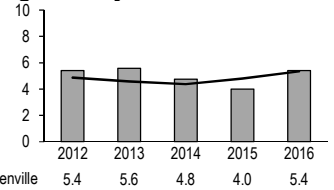
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Greenville	26.9%	27.0%	30.1%	38.7%	32.2%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Greenville	5.4	5.6	4.8	4.0	5.4
Average	4.9	4.6	4.4	4.8	5.4

Hickory Police Services

Fiscal Year 2015–16

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 116 sworn officer positions authorized for the fiscal year, with an average length of service of 9.5 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 893 Part I cases in FY 2015–16.

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 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Median Family Income	$54,093
U.S. Census 2010	

Service Profile

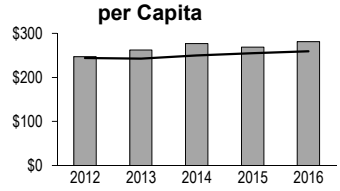
FTE Positions—Sworn	116.0
FTE Positions—Other	36.0
Marked and Unmarked Patrol Vehicles	156
Part I Crimes Reported	
Homicide	6
Rape	18
Robbery	49
Assault	72
Burglary	368
Larceny	1,556
Auto Theft	112
Arson	5
TOTAL	2,186
Part II Crimes Reported	3,357
Part I Crimes Cleared	
Persons	91
Property	802
TOTAL	893
Reporting Format	IBR
Number of Calls Dispatched	90,929
Number of Traffic Accidents	3,706
Property Damage for Accidents	$10,555,300

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	69.4%
Operating Costs	22.6%
Capital Costs	8.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,865,997
Operating Costs	$2,564,746
Capital Costs	$907,504
TOTAL	$11,338,247

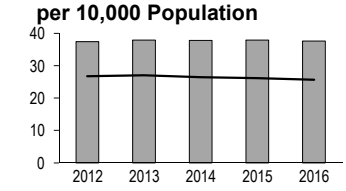
Resource Measures

Police Services Costs per Capita



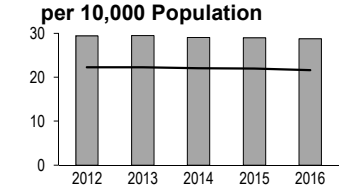
	2012	2013	2014	2015	2016
Hickory	$247	$262	$277	$269	$281
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	37.4	38.0	37.8	37.9	37.7
Average	26.8	27.0	26.4	26.1	25.7

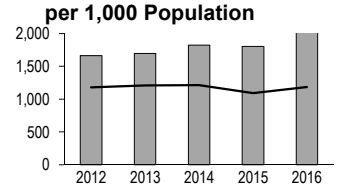
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	29.4	29.5	29.1	29.0	28.7
Average	22.3	22.3	22.0	22.0	21.6

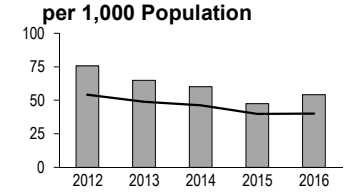
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	1,664	1,697	1,825	1,805	2,253
Average	1,178	1,211	1,214	1,094	1,182

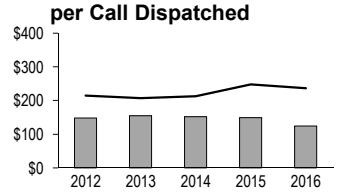
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	75.8	64.9	60.0	47.5	54.2
Average	54.2	48.8	46.4	39.8	40.2

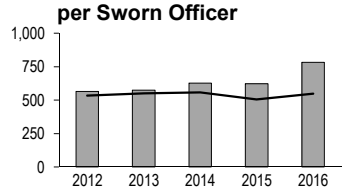
Efficiency Measures

Police Services Cost per Call Dispatched



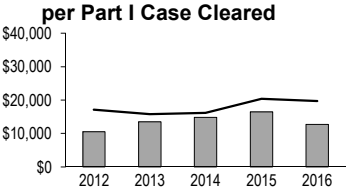
	2012	2013	2014	2015	2016
Hickory	$148	$155	$152	$149	$125
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



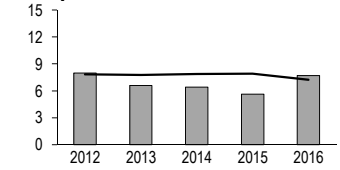
	2012	2013	2014	2015	2016
Hickory	565	576	627	622	784
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Hickory	$10,524	$13,517	$14,836	$16,472	$12,697
Average	$17,093	$15,771	$16,220	$20,374	$19,696

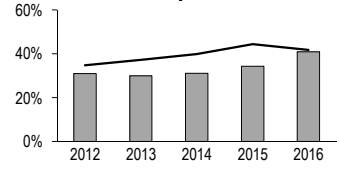
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Hickory	8.0	6.6	6.4	5.6	7.7
Average	7.8	7.8	7.9	7.9	7.2

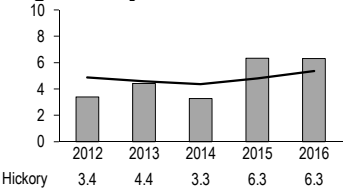
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Hickory	31.0%	29.9%	31.1%	34.4%	40.9%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Hickory	3.4	4.4	3.3	6.3	6.3
Average	4.9	4.6	4.4	4.8	5.4

High Point — Police Services

Fiscal Year 2015–16

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 239 sworn officer positions authorized for the fiscal year, with an average length of service of ten 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 quick response.

The police department was successful in clearing a total of 3,450 Part I cases in FY 2015–16.

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.

High Point conducted a large audit of open cases in FY 2013–14 and then again in FY 2015–16. A large number of open cases were discovered which had not been cleared going back over a decade before the implementation of the current case management software system. An effort was made to go back through these older open cases. Many were found to have been resolved but not recorded in prior years, and some others were cleared as inactive. As a result of this auditing work, the number of cleared cases for High Point jumped noticeably for the fiscal year. These are likely to be special jumps and not long-term patterns.

Municipal Profile

Population (OSBM 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Sworn	239.0
FTE Positions—Other	41.0
Marked and Unmarked Patrol Vehicles	239
Part I Crimes Reported	
Homicide	7
Rape	35
Robbery	179
Assault	83
Burglary	321
Larceny	2,962
Auto Theft	173
Arson	11
TOTAL	3,771
Part II Crimes Reported	4,703
Part I Crimes Cleared	
Persons	672
Property	2,778
TOTAL	3,450
Reporting Format	UCR
Number of Calls Dispatched	120,830
Number of Traffic Accidents	3,502
Property Damage for Accidents	$15,650,145

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	73.2%
Operating Costs	23.0%
Capital Costs	3.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$21,548,702
Operating Costs	$6,777,046
Capital Costs	$1,131,331
TOTAL	$29,457,079

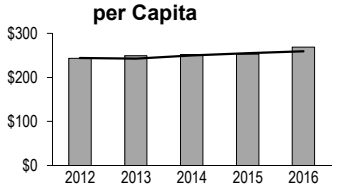
High Point

Police Services

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

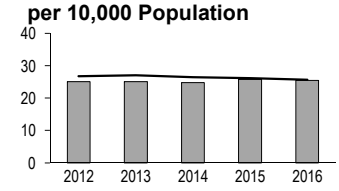
Resource Measures

Police Services Costs per Capita



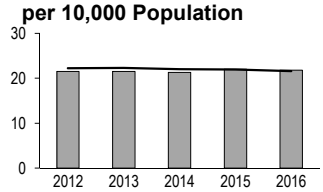
	2012	2013	2014	2015	2016
High Point	$244	$249	$252	$253	$268
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
High Point	25.1	25.1	24.8	25.8	25.5
Average	26.8	27.0	26.4	26.1	25.7

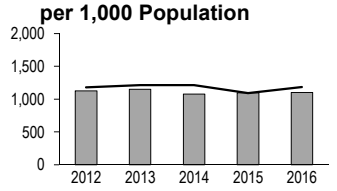
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
High Point	21.5	21.5	21.3	22.0	21.8
Average	22.3	22.3	22.0	22.0	21.6

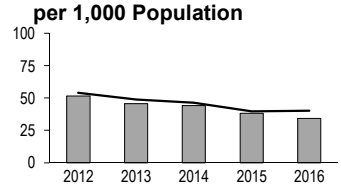
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
High Point	1,124	1,150	1,075	1,099	1,101
Average	1,178	1,211	1,214	1,094	1,182

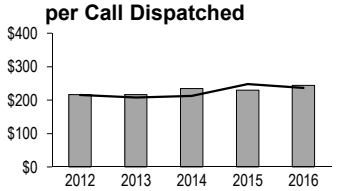
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
High Point	51.6	45.7	44.1	38.2	34.4
Average	54.2	48.8	46.4	39.8	40.2

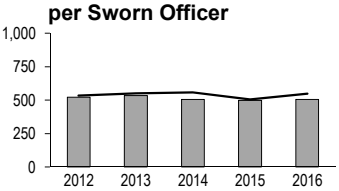
Efficiency Measures

Police Services Cost per Call Dispatched



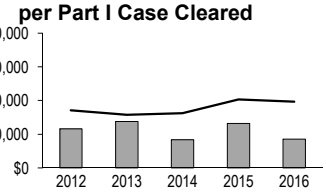
	2012	2013	2014	2015	2016
High Point	$217	$217	$234	$230	$244
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



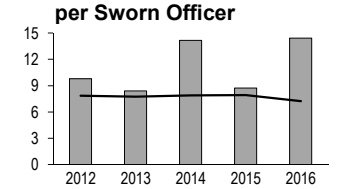
	2012	2013	2014	2015	2016
High Point	522	535	505	499	506
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
High Point	$11,557	$13,798	$8,357	$13,172	$8,538
Average	$17,093	$15,771	$16,220	$20,374	$19,696

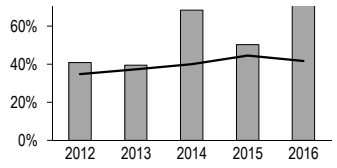
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
High Point	9.8	8.4	14.2	8.7	14.4
Average	7.8	7.8	7.9	7.9	7.2

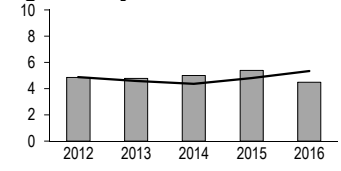
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
High Point	40.9%	39.5%	68.2%	50.3%	91.5%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
High Point	4.9	4.8	5.0	5.4	4.5
Average	4.9	4.6	4.4	4.8	5.4

Raleigh Police Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Raleigh's police department provides an array of police services, including patrol, investigations, canine unit, special response unit, bicycle patrol, mounted equine unit, motorcycle unit, drug enforcement units, and other programs.

The city had 799 sworn officer positions authorized for the fiscal year, with an average length of service of 11.2 years. The police department has ten substations around the city.

Patrol officers work a twelve-hour schedule rotating between days and nights every twenty-eight days. Detectives work an 8.4 hour schedule each weekday rotating between a day shift and an evening shift. Most detectives are in a pool that shares responsibilities to cover weekend duty and midnight shifts.

Field Operations Division has a take-home vehicle program for officers with two years of service and living inside the city limits with a safe driving record. Detectives and Special Operation Divisions have take-home vehicles for units on call or call-back status.

The police department was successful in clearing a total of 7,690 Part I cases in FY 2015–16.

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

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

The average response time to high priority calls reflects the response time of each arriving unit. Self-initiated calls are not included in the average response time to high priority calls.

Municipal Profile

Population (OSBM 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Median Family Income	$68,678
U.S. Census 2010	

Service Profile

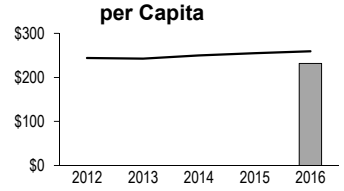
FTE Positions—Sworn	799.0
FTE Positions—Other	101.0
Marked and Unmarked Patrol Vehicles	850
Part I Crimes Reported	
Homicide	15
Rape	111
Robbery	641
Assault	847
Burglary	2,159
Larceny	8,577
Auto Theft	894
Arson	42
TOTAL	13,286
Part II Crimes Reported	NA
Part I Crimes Cleared	
Persons	934
Property	6,756
TOTAL	7,690
Reporting Format	NIBRS
Number of Calls Dispatched	407,752
Number of Traffic Accidents	27,566
Property Damage for Accidents	$2,978,167

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.0%
Operating Costs	16.3%
Capital Costs	11.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$73,587,060
Operating Costs	$16,671,188
Capital Costs	$11,949,653
TOTAL	$102,207,901

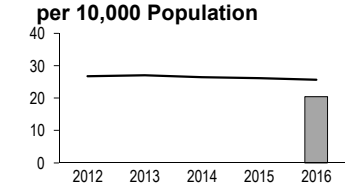
Resource Measures

Police Services Costs per Capita



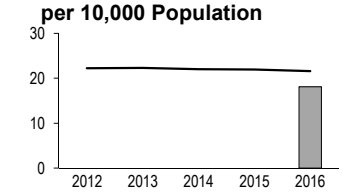
	2012	2013	2014	2015	2016
Raleigh					$232
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					20.4
Average	26.8	27.0	26.4	26.1	25.7

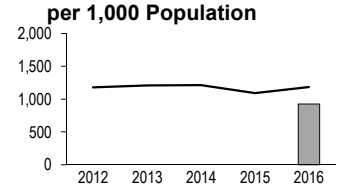
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					18.1
Average	22.3	22.3	22.0	22.0	21.6

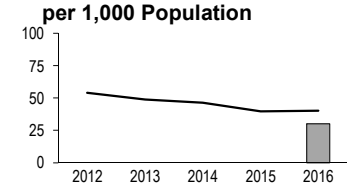
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					925
Average	1,178	1,211	1,214	1,094	1,182

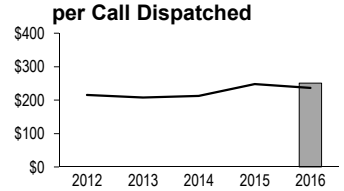
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					30.1
Average	54.2	48.8	46.4	39.8	40.2

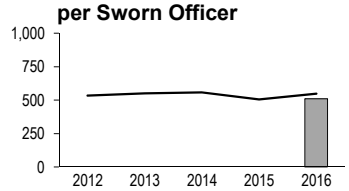
Efficiency Measures

Police Services Cost per Call Dispatched



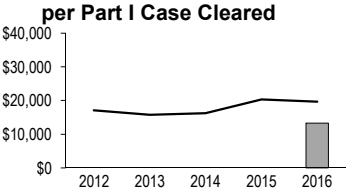
	2012	2013	2014	2015	2016
Raleigh					$251
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



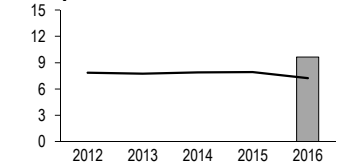
	2012	2013	2014	2015	2016
Raleigh					510
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Raleigh					$13,291
Average	$17,093	$15,771	$16,220	$20,374	$19,696

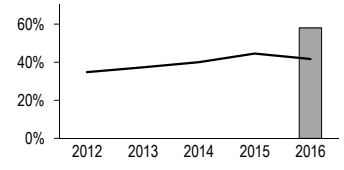
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Raleigh					9.6
Average	7.8	7.8	7.9	7.9	7.2

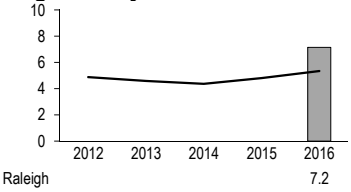
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Raleigh					57.9%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Raleigh					7.2
Average	4.9	4.6	4.4	4.8	5.4

Salisbury Police Services

Fiscal Year 2015–16

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, a school program, and other programs.

The city had eighty-one sworn officer positions authorized for the fiscal year, with an average length of service of 9.7 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.

Sworn officers who serve in an on-call capacity are permitted to take their assigned vehicles to their residence up to a maximum of a thirty-mile radius from the police department. Sworn officers not serving in an on-call capacity who reside anywhere within Rowan County or those who live outside of Rowan County but within fifteen miles are able to have the benefit without charge of driving their assigned vehicle to their residence.

The police department was successful in clearing a total of 553 Part I cases in FY 2015–16.

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 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Median Family Income	$40,192
U.S. Census 2010	

Service Profile

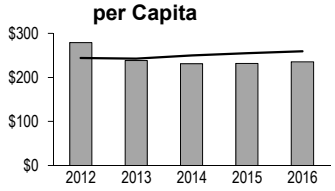
FTE Positions—Sworn	81.0
FTE Positions—Other	8.0
Marked and Unmarked Patrol Vehicles	92
Part I Crimes Reported	
Homicide	7
Rape	10
Robbery	75
Assault	110
Burglary	344
Larceny	1,184
Auto Theft	57
Arson	6
TOTAL	1,793
Part II Crimes Reported	2,521
Part I Crimes Cleared	
Persons	77
Property	476
TOTAL	553
Reporting Format	IBR
Number of Calls Dispatched	41,606
Number of Traffic Accidents	1,867
Property Damage for Accidents	NA

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	69.0%
Operating Costs	19.5%
Capital Costs	11.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,571,270
Operating Costs	$1,571,067
Capital Costs	$928,651
TOTAL	$8,070,988

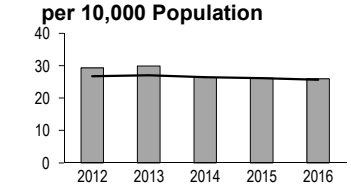
Resource Measures

Police Services Costs per Capita



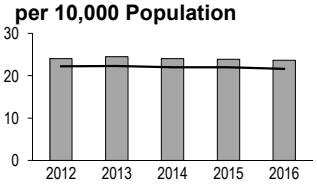
	2012	2013	2014	2015	2016
Salisbury	$279	$238	$231	$232	$235
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	29.4	29.9	26.4	26.2	26.0
Average	26.8	27.0	26.4	26.1	25.7

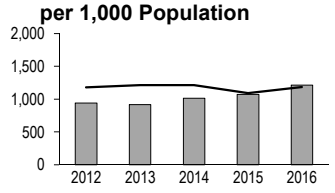
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	24.0	24.5	24.0	23.9	23.6
Average	22.3	22.3	22.0	22.0	21.6

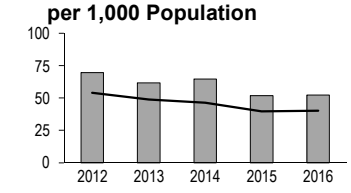
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	940	915	1,012	1,074	1,214
Average	1,178	1,211	1,214	1,094	1,182

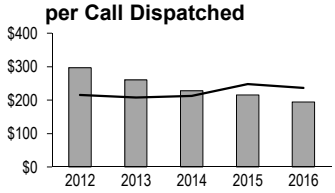
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	69.6	61.7	64.7	51.9	52.3
Average	54.2	48.8	46.4	39.8	40.2

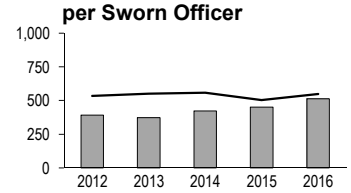
Efficiency Measures

Police Services Cost per Call Dispatched



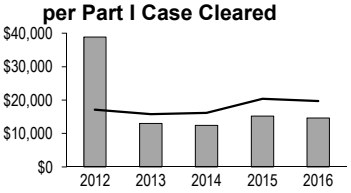
	2012	2013	2014	2015	2016
Salisbury	$297	$260	$228	$216	$194
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



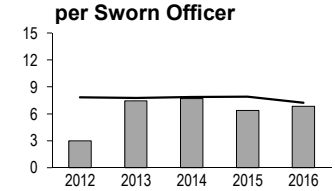
	2012	2013	2014	2015	2016
Salisbury	391	373	422	450	514
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Salisbury	$38,821	$13,023	$12,483	$15,211	$14,595
Average	$17,093	$15,771	$16,220	$20,374	$19,696

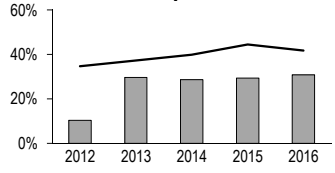
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Salisbury	3.0	7.5	7.7	6.4	6.8
Average	7.8	7.8	7.9	7.9	7.2

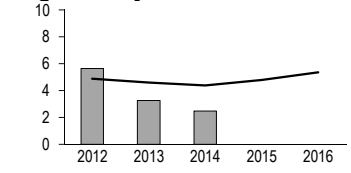
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Salisbury	10.3%	29.6%	28.6%	29.3%	30.8%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Salisbury	5.7	3.3	2.5		
Average	4.9	4.6	4.4	4.8	5.4

Wilson — Police Services

Fiscal Year 2015–16

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 121 sworn officer positions authorized for the fiscal year, with an average length of service of 9.7 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 844 Part I cases in FY 2015–16.

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 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Median Family Income	$43,442
U.S. Census 2010	

Service Profile

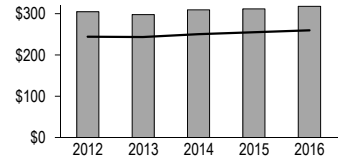
FTE Positions—Sworn	121.0
FTE Positions—Other	16.0
Marked and Unmarked Patrol Vehicles	128
Part I Crimes Reported	
Homicide	8
Rape	6
Robbery	97
Assault	148
Burglary	547
Larceny	1,305
Auto Theft	110
Arson	14
TOTAL	2,235
Part II Crimes Reported	2,906
Part I Crimes Cleared	
Persons	179
Property	665
TOTAL	844
Reporting Format	UCR
Number of Calls Dispatched	81,884
Number of Traffic Accidents	2,252
Property Damage for Accidents	NA

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	67.4%
Operating Costs	25.6%
Capital Costs	7.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,561,623
Operating Costs	$4,003,119
Capital Costs	$1,095,290
TOTAL	$15,660,032

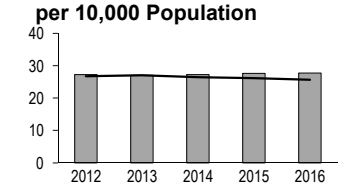
Resource Measures

Police Services Costs per Capita



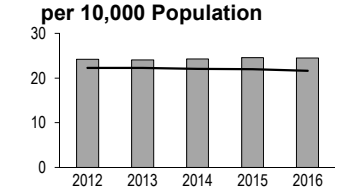
	2012	2013	2014	2015	2016
Wilson	$305	$297	$309	$311	$317
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	27.3	27.1	27.3	27.6	27.8
Average	26.8	27.0	26.4	26.1	25.7

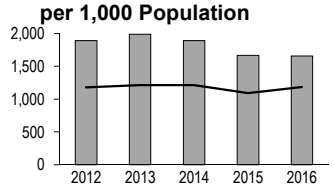
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	24.2	24.1	24.2	24.6	24.5
Average	22.3	22.3	22.0	22.0	21.6

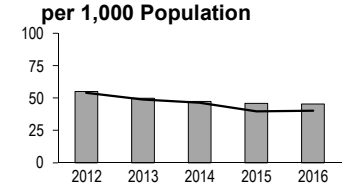
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	1,892	1,988	1,891	1,666	1,659
Average	1,178	1,211	1,214	1,094	1,182

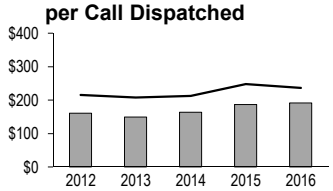
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	55.0	50.0	47.4	45.8	45.3
Average	54.2	48.8	46.4	39.8	40.2

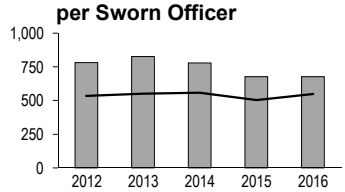
Efficiency Measures

Police Services Cost per Call Dispatched



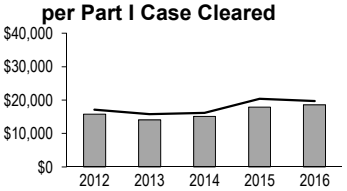
	2012	2013	2014	2015	2016
Wilson	$161	$150	$164	$187	$191
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



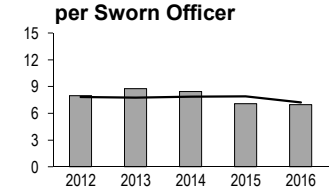
	2012	2013	2014	2015	2016
Wilson	781	826	780	678	677
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Wilson	$15,751	$14,100	$15,136	$17,910	$18,555
Average	$17,093	$15,771	$16,220	$20,374	$19,696

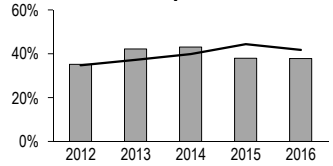
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Wilson	8.0	8.8	8.4	7.1	7.0
Average	7.8	7.8	7.9	7.9	7.2

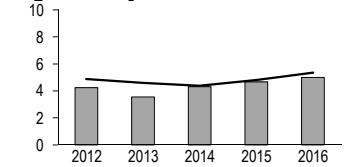
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Wilson	35.2%	42.2%	43.1%	37.9%	37.8%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Wilson	4.2	3.6	4.3	4.7	5.0
Average	4.9	4.6	4.4	4.8	5.4

Winston-Salem Police Services

Fiscal Year 2015–16

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 560 sworn officer positions authorized for the fiscal year, with an average length of service of 11.9 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 4,719 Part I crimes in FY 2015–16.

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 have 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 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491

Service Profile

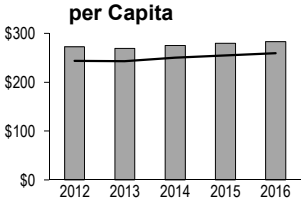
FTE Positions—Sworn	570.0
FTE Positions—Other	117.0
Marked and Unmarked Patrol Vehicles	473
Part I Crimes Reported	
Homicide	25
Rape	121
Robbery	449
Assault	1,446
Burglary	3,704
Larceny	9,219
Auto Theft	771
Arson	na
TOTAL	15,735
Part II Crimes Reported	35,663
Part I Crimes Cleared	
Persons	890
Property	3,829
TOTAL	4,719
Reporting Format	IBR
Number of Calls Dispatched	233,434
Number of Traffic Accidents	10,257
Property Damage for Accidents	$31,117,514

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	75.8%
Operating Costs	15.1%
Capital Costs	9.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$51,226,417
Operating Costs	$10,229,614
Capital Costs	$6,134,351
TOTAL	$67,590,382

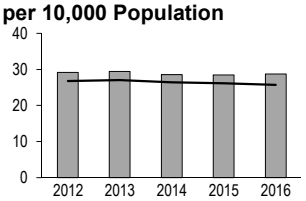
Resource Measures

Police Services Costs per Capita



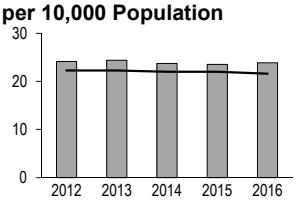
	2012	2013	2014	2015	2016
Winston-Salem	$272	$269	$275	$280	$283
Average	$244	$243	$250	$255	$259

Total Police Services Personnel per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	29.2	29.4	28.6	28.5	28.8
Average	26.8	27.0	26.4	26.1	25.7

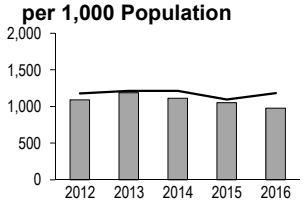
Sworn Police Officers per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	24.2	24.4	23.7	23.5	23.9
Average	22.3	22.3	22.0	22.0	21.6

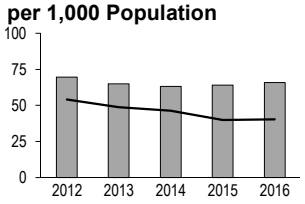
Workload Measures

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	1,092	1,188	1,113	1,053	977
Average	1,178	1,211	1,214	1,094	1,182

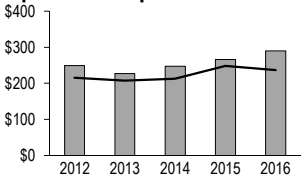
Part I Crimes per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	69.5	64.9	63.2	63.9	65.9
Average	54.2	48.8	46.4	39.8	40.2

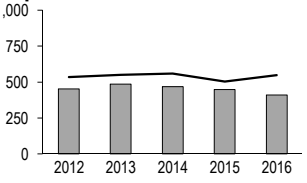
Efficiency Measures

Police Services Cost per Call Dispatched



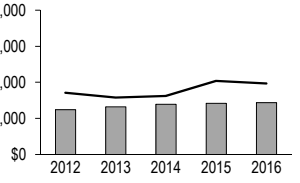
	2012	2013	2014	2015	2016
Winston-Salem	$249	$226	$247	$266	$290
Average	$215	$207	$213	$248	$237

Calls Dispatched per Sworn Officer



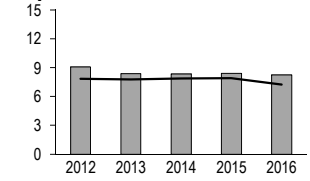
	2012	2013	2014	2015	2016
Winston-Salem	452	487	469	447	410
Average	535	551	559	505	550

Police Services Cost per Part I Case Cleared



	2012	2013	2014	2015	2016
Winston-Salem	$12,401	$13,193	$13,868	$14,160	$14,381
Average	$17,093	$15,771	$16,220	$20,374	$19,696

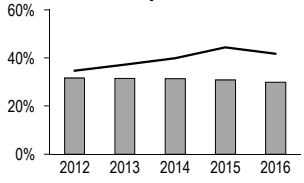
Part I Cases Cleared per Sworn Officer



	2012	2013	2014	2015	2016
Winston-Salem	9.1	8.4	8.3	8.4	8.2
Average	7.8	7.8	7.9	7.9	7.2

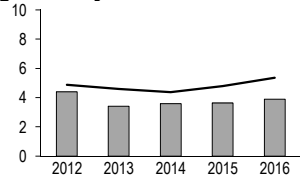
Effectiveness Measures

Percentage of Part I Cases Cleared of Those Reported



	2012	2013	2014	2015	2016
Winston-Salem	31.6%	31.5%	31.3%	30.9%	29.9%
Average	34.7%	37.3%	39.9%	44.4%	41.7%

Response Time to High Priority Calls in Minutes



	2012	2013	2014	2015	2016
Winston-Salem	4.4	3.4	3.6	3.6	3.9
Average	4.9	4.6	4.4	4.8	5.4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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 in 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 life-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	44,745	11.3	14.3	41,747	3,594	40,495	13,280
Asheville	90,918	25.0	6.0	180,990	33,756	96,762	36,131
Burlington	52,240	14.0	7.4	132,158	23,245	91,435	20,727
Cary	152,627	23.0	10.0	159,148	61,970	148,054	33,244
Concord	87,130	22.5	8.3	102,526	27,691	130,221	32,077
Greensboro	517,124	104.0	10.5	624,281	356,555	429,942	172,584
Greenville	87,960	17.0	11.8	110,736	28,663	87,339	21,315
Hickory	40,351	12.0	8.5	na	10,326	102,299	na
High Point	109,749	33.0	10.2	302,385	94,868	142,406	na
Raleigh	1,007,631	118.0	4.3	899,464	611,047	749,034	328,263
Winston-Salem	238,899	49.0	8.4	541,839	248,148	260,564	74,826

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

Apex Emergency Communications

Fiscal Year 2015–16

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 (CAD) 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 41,747 incoming calls in the fiscal year and dispatched 40,495 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

CAD entry for Apex does not begin immediately but is activated by operators.

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,594
Median Family Income U.S. Census 2010	$97,201
County	Wake

Service Profile

Primary or Secondary Answering Point	Secondary
Calls Dispatched	
Police	Yes
Fire	No
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	10.40
Other	0.85
Total Positions	11.25
Average Length of Service for Call-Takers	14.3 years
Total Incoming Calls	41,747
Total 911 Calls	3,594
Total Calls Dispatched	40,495
Outgoing Calls Other than Dispatch	13,280
Revenue from E-911 Fees	None

Full Cost Profile

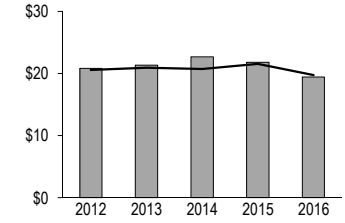
Cost Breakdown by Percentage	
Personal Services	76.0%
Operating Costs	20.0%
Capital Costs	4.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$660,957
Operating Costs	$174,151
Capital Costs	$34,486
TOTAL	$869,594

Apex Emergency Communications

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

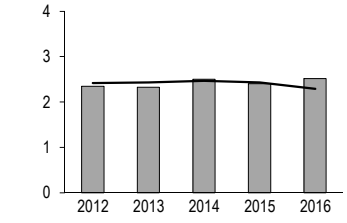
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Apex	$20.82	$21.32	$22.69	$21.77	$19.43
Average	$20.55	$20.90	$20.70	$21.52	$19.74

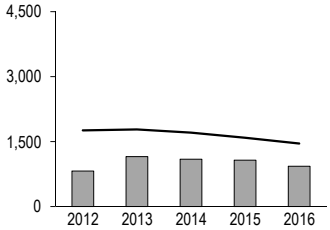
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	2.35	2.33	2.50	2.40	2.51
Average	2.42	2.43	2.46	2.43	2.29

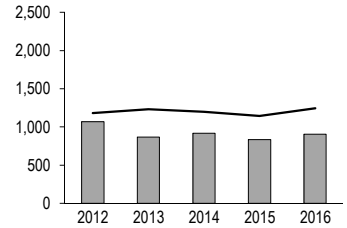
Workload Measures

Total Calls Answered per 1,000 Population



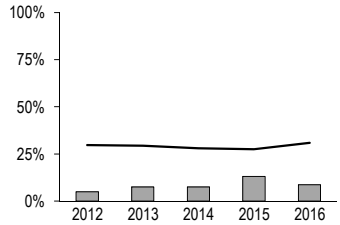
	2012	2013	2014	2015	2016
Apex	822	1,156	1,097	1,073	933
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Apex	1,070	868	917	834	905
Average	1,183	1,233	1,200	1,142	1,243

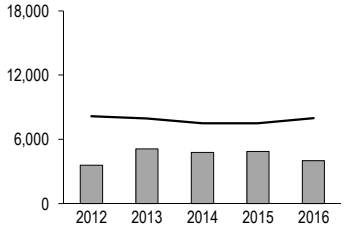
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Apex	5.0%	7.5%	7.5%	13.0%	8.6%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

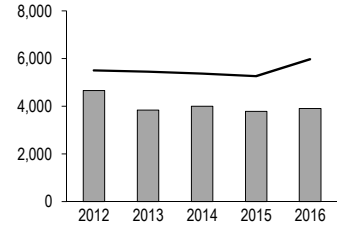
Efficiency Measures

Calls Answered per Telecommunicator



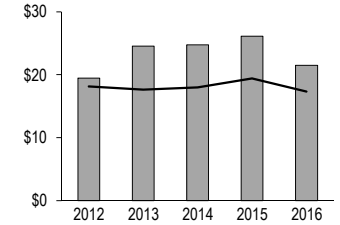
	2012	2013	2014	2015	2016
Apex	3,576	5,107	4,776	4,874	4,014
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Apex	4,657	3,837	3,992	3,786	3,894
Average	5,502	5,445	5,358	5,258	5,970

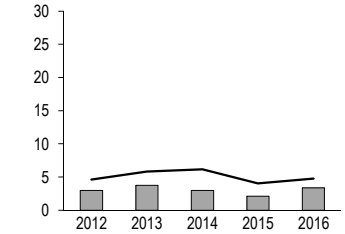
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Apex	$19.47	$24.55	$24.75	$26.11	$21.47
Average	$18.15	$17.63	$17.96	$19.40	$17.34

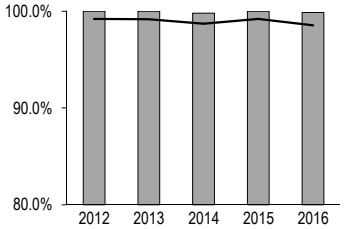
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



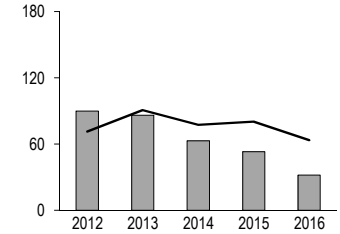
	2012	2013	2014	2015	2016
Apex	3	4	3	2	3
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Apex	100.0%	100.0%	99.8%	100.0%	99.9%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Apex	90	86	63	53	32
Average	71	91	77	80	63

Asheville Emergency Communications

Fiscal Year 2015–16

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 communications 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 180,990 incoming calls in the fiscal year and dispatched 96,762 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

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 and dispatch.

Municipal Profile

Population (OSBM 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
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	24.0
Other	1.0
Total Positions	25.0
Average Length of Service for Call-Takers	6.0 years
Total Incoming Calls	180,990
Total 911 Calls	33,756
Total Calls Dispatched	96,762
Outgoing Calls Other than Dispatch	36,131
Revenue from E-911 Fees	None

Full Cost Profile

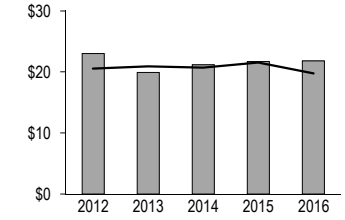
Cost Breakdown by Percentage	
Personal Services	58.1%
Operating Costs	40.2%
Capital Costs	1.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,150,294
Operating Costs	$796,108
Capital Costs	$33,823
TOTAL	$1,980,225

Asheville Emergency Communications

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

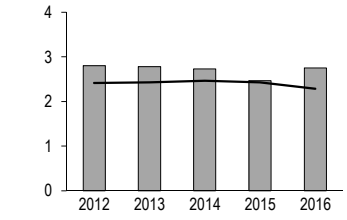
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Asheville	$23.01	$19.94	$21.16	$21.68	$21.78
Average	$20.55	$20.90	$20.70	$21.52	$19.74

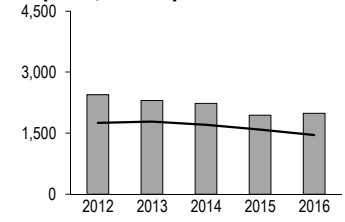
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	2.80	2.78	2.73	2.47	2.75
Average	2.42	2.43	2.46	2.43	2.29

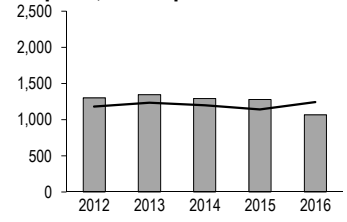
Workload Measures

Total Calls Answered per 1,000 Population



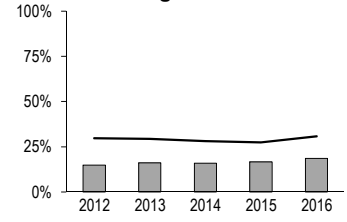
	2012	2013	2014	2015	2016
Asheville	2,448	2,301	2,236	1,945	1,991
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	1,299	1,344	1,289	1,278	1,064
Average	1,183	1,233	1,200	1,142	1,243

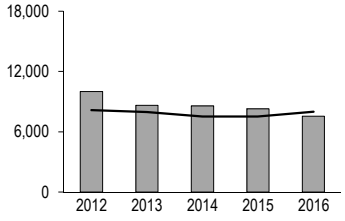
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Asheville	14.9%	16.1%	16.0%	16.6%	18.7%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

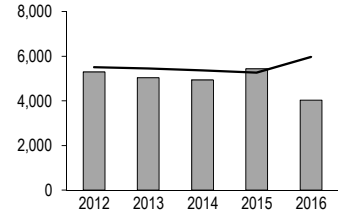
Efficiency Measures

Calls Answered per Telecommunicator



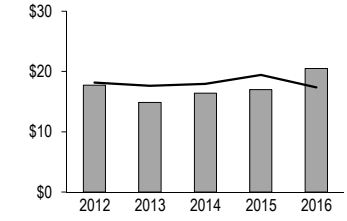
	2012	2013	2014	2015	2016
Asheville	9,983	8,623	8,555	8,265	7,541
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Asheville	5,297	5,036	4,933	5,432	4,032
Average	5,502	5,445	5,358	5,258	5,970

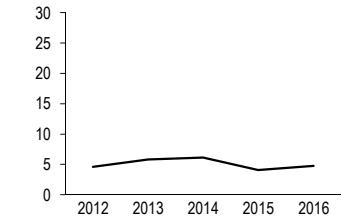
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Asheville	$17.72	$14.84	$16.42	$16.96	$20.46
Average	$18.15	$17.63	$17.96	$19.40	$17.34

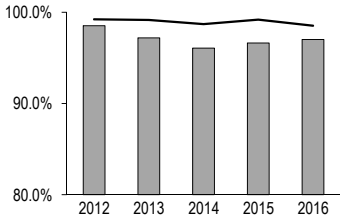
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



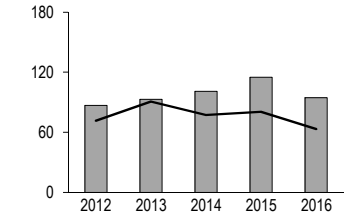
	2012	2013	2014	2015	2016
Asheville					
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Asheville	98.5%	97.2%	96.1%	96.6%	97.0%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Asheville	87	93	101	115	94
Average	71	91	77	80	63

Burlington Emergency Communications

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The emergency 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 communications center answered 132,158 incoming calls and dispatched 91,435 calls during the fiscal year. 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

Computer-aided dispatch (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 are a more accurate reflection, as they only include 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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,712
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	7.4 years
Total Incoming Calls	132,158
Total 911 Calls	23,245
Total Calls Dispatched	91,435
Outgoing Calls Other than Dispatch	20,727
Revenue from E-911 Fees	$109,700

Full Cost Profile

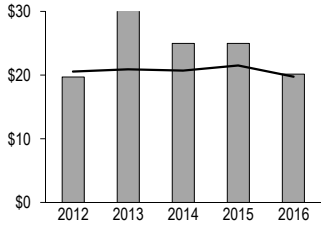
Cost Breakdown by Percentage	
Personal Services	72.6%
Operating Costs	20.6%
Capital Costs	6.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$764,690
Operating Costs	$217,361
Capital Costs	$70,936
TOTAL	$1,052,987

Burlington Emergency Communications

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

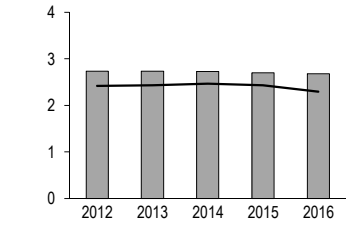
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Burlington	$19.68	$30.23	$24.94	$24.95	$20.16
Average	$20.55	$20.90	$20.70	$21.52	$19.74

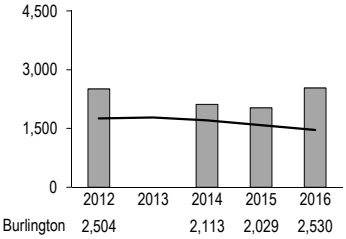
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	2.73	2.73	2.72	2.70	2.68
Average	2.42	2.43	2.46	2.43	2.29

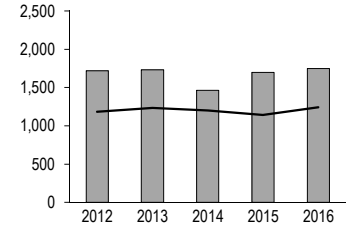
Workload Measures

Total Calls Answered per 1,000 Population



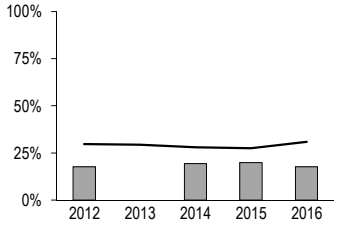
	2012	2013	2014	2015	2016
Burlington	2,504		2,113	2,029	2,530
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	1,717	1,732	1,462	1,696	1,750
Average	1,183	1,233	1,200	1,142	1,243

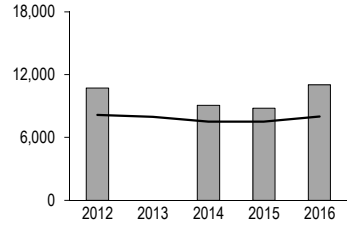
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Burlington	17.7%		19.4%	19.9%	17.6%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

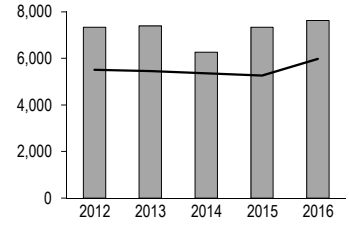
Efficiency Measures

Calls Answered per Telecommunicator



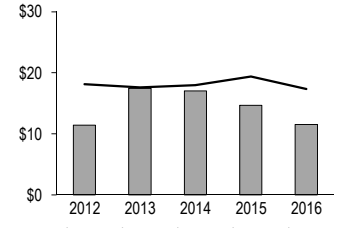
	2012	2013	2014	2015	2016
Burlington	10,699		9,049	8,778	11,013
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Burlington	7,335	7,390	6,262	7,339	7,620
Average	5,502	5,445	5,358	5,258	5,970

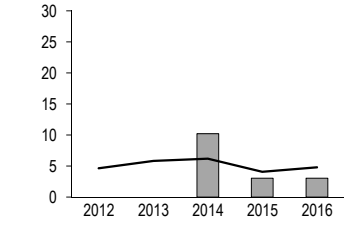
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Burlington	$11.46	$17.45	$17.06	$14.71	$11.52
Average	$18.15	$17.63	$17.96	$19.40	$17.34

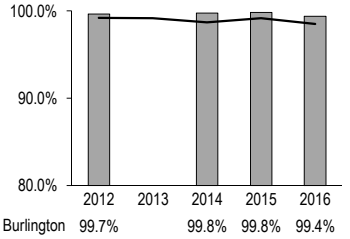
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



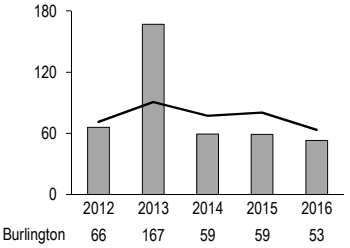
	2012	2013	2014	2015	2016
Burlington			10	3	3
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Burlington	99.7%		99.8%	99.8%	99.4%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One



	2012	2013	2014	2015	2016
Burlington	66	167	59	59	53
Average	71	91	77	80	63

Cary Emergency Communications

Fiscal Year 2015–16

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 159,148 incoming calls in the fiscal year, dispatching 148,054 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 $524,281 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
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	20.0
Other	3.0
Total Positions	23.0
Average Length of Service for Call-Takers	10.0 years
Total Incoming Calls	159,148
Total 911 Calls	61,970
Total Calls Dispatched	148,054
Outgoing Calls Other than Dispatch	33,244
Revenue from E-911 Fees	$524,281

Full Cost Profile

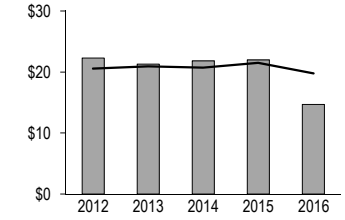
Cost Breakdown by Percentage	
Personal Services	72.6%
Operating Costs	20.9%
Capital Costs	6.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,626,244
Operating Costs	$468,482
Capital Costs	$144,915
TOTAL	$2,239,641

Cary Emergency Communications

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

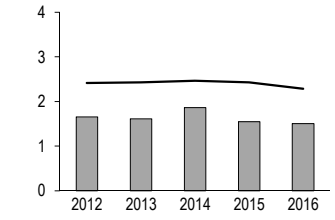
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Cary	$22.29	$21.29	$21.80	$21.97	$14.67
Average	$20.55	$20.90	$20.70	$21.52	$19.74

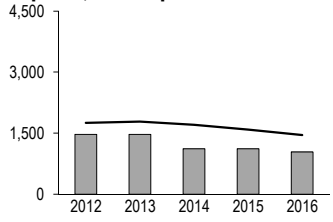
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	1.65	1.62	1.87	1.55	1.51
Average	2.42	2.43	2.46	2.43	2.29

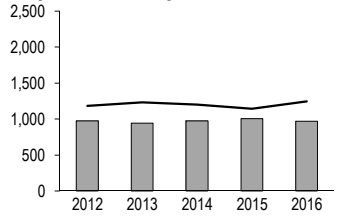
Workload Measures

Total Calls Answered per 1,000 Population



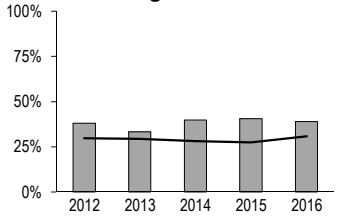
	2012	2013	2014	2015	2016
Cary	1,472	1,474	1,118	1,119	1,043
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Cary	972	942	975	1,005	970
Average	1,183	1,233	1,200	1,142	1,243

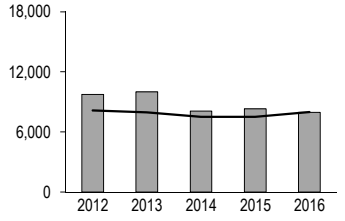
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Cary	38.1%	33.4%	39.9%	40.6%	38.9%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

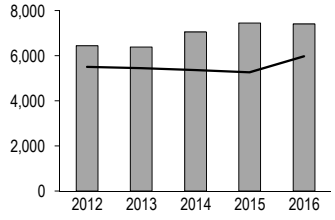
Efficiency Measures

Calls Answered per Telecommunicator



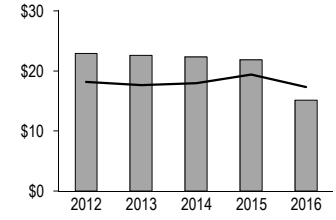
	2012	2013	2014	2015	2016
Cary	9,752	9,994	8,085	8,299	7,957
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Cary	6,443	6,390	7,055	7,453	7,403
Average	5,502	5,445	5,358	5,258	5,970

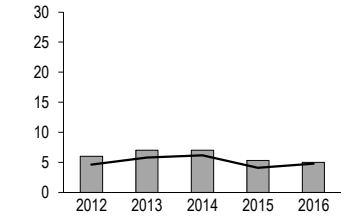
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Cary	$22.93	$22.59	$22.35	$21.87	$15.13
Average	$18.15	$17.63	$17.96	$19.40	$17.34

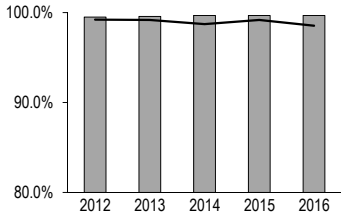
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



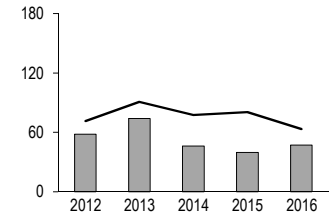
	2012	2013	2014	2015	2016
Cary	6	7	7	5	5
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Cary	99.5%	99.6%	99.7%	99.7%	99.7%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Cary	58	74	46	40	47
Average	71	91	77	80	63

Concord Emergency Communications

Fiscal Year 2015–16

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 102,526 calls in the fiscal year, dispatching 130,221 calls.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
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	21.5
Other	1.0
Total Positions	22.5
Average Length of Service for Call-Takers	8.3 years
Total Incoming Calls	102,526
Total 911 Calls	27,691
Total Calls Dispatched	130,221
Outgoing Calls Other than Dispatch	32,077
Revenue from E-911 Fees	None

Full Cost Profile

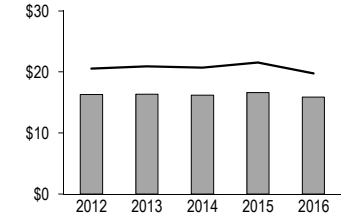
Cost Breakdown by Percentage	
Personal Services	83.1%
Operating Costs	16.2%
Capital Costs	0.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,151,265
Operating Costs	$223,867
Capital Costs	$10,776
TOTAL	$1,385,908

Concord Emergency Communications

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

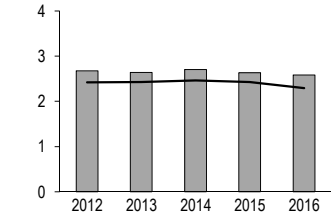
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Concord	$16.30	$16.37	$16.20	$16.62	$15.91
Average	$20.55	$20.90	$20.70	$21.52	$19.74

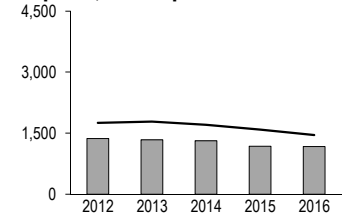
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	2.67	2.64	2.70	2.63	2.58
Average	2.42	2.43	2.46	2.43	2.29

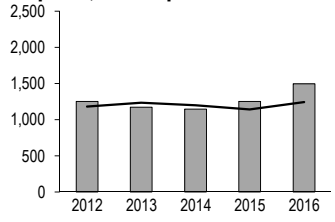
Workload Measures

Total Calls Answered per 1,000 Population



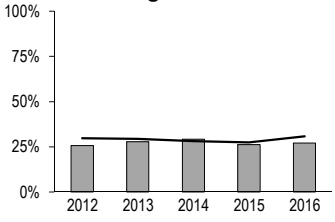
	2012	2013	2014	2015	2016
Concord	1,367	1,336	1,313	1,181	1,177
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Concord	1,249	1,171	1,144	1,250	1,495
Average	1,183	1,233	1,200	1,142	1,243

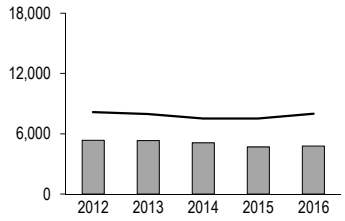
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Concord	25.7%	27.8%	29.2%	26.2%	27.0%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

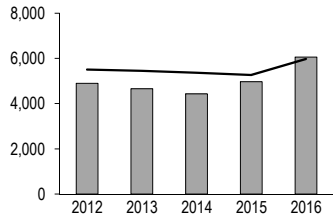
Efficiency Measures

Calls Answered per Telecommunicator



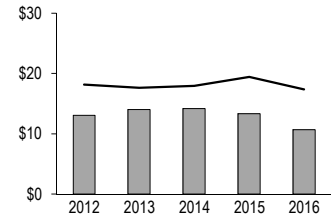
	2012	2013	2014	2015	2016
Concord	5,359	5,309	5,088	4,691	4,769
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Concord	4,900	4,652	4,430	4,968	6,057
Average	5,502	5,445	5,358	5,258	5,970

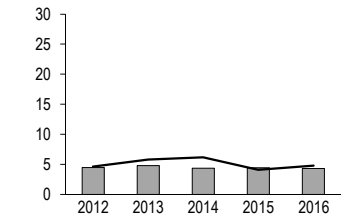
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Concord	$13.05	$13.98	$14.17	$13.30	$10.64
Average	$18.15	$17.63	$17.96	$19.40	$17.34

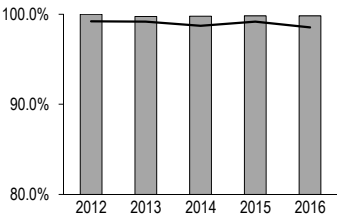
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



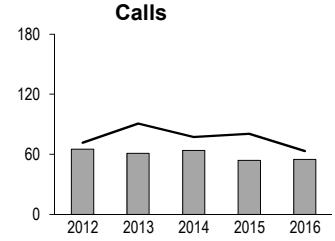
	2012	2013	2014	2015	2016
Concord	4	5	4	4	4
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Concord	100.0%	99.7%	99.8%	99.8%	99.8%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Concord	65	61	64	54	55
Average	71	91	77	80	63

Greensboro Emergency Communications

Fiscal Year 2015–16

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 624,281 incoming calls in the fiscal year, dispatching 429,942 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 $1,424,454 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)–Guilford County	517,124
Land Area (Square Miles)	649.42
Persons per Square Mile	796
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	10.5 years
Total Incoming Calls	624,281
Total 911 Calls	356,555
Total Calls Dispatched	429,942
Outgoing Calls Other than Dispatch	172,584
Revenue from E-911 Fees	$1,424,454

Full Cost Profile

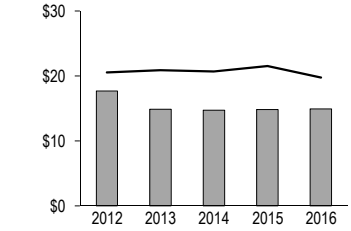
Cost Breakdown by Percentage	
Personal Services	80.4%
Operating Costs	19.6%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,202,531
Operating Costs	$1,508,775
Capital Costs	$0
TOTAL	$7,711,306

Greensboro Emergency Communications

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

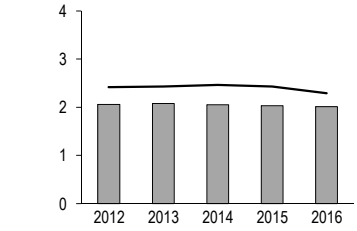
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Greensboro	$17.69	$14.89	$14.71	$14.82	$14.91
Average	$20.55	$20.90	$20.70	$21.52	$19.74

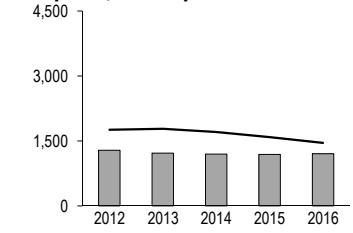
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	2.06	2.08	2.05	2.03	2.01
Average	2.42	2.43	2.46	2.43	2.29

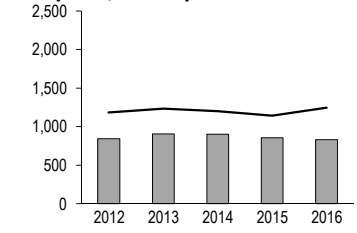
Workload Measures

Total Calls Answered per 1,000 Population



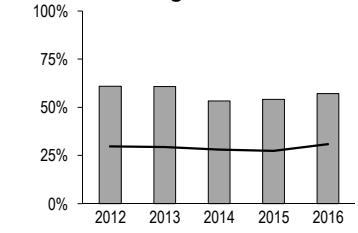
	2012	2013	2014	2015	2016
Greensboro	1,287	1,217	1,199	1,187	1,207
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	842	906	900	856	831
Average	1,183	1,233	1,200	1,142	1,243

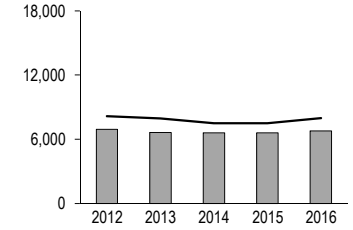
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Greensboro	60.9%	60.8%	53.3%	54.1%	57.1%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

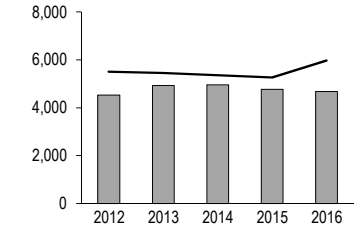
Efficiency Measures

Calls Answered per Telecommunicator



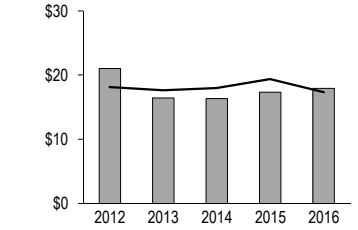
	2012	2013	2014	2015	2016
Greensboro	6,926	6,630	6,613	6,609	6,786
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Greensboro	4,534	4,935	4,962	4,767	4,673
Average	5,502	5,445	5,358	5,258	5,970

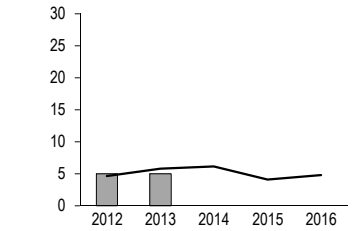
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Greensboro	$21.00	$16.43	$16.36	$17.31	$17.94
Average	$18.15	$17.63	$17.96	$19.40	$17.34

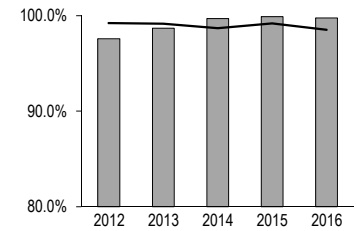
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



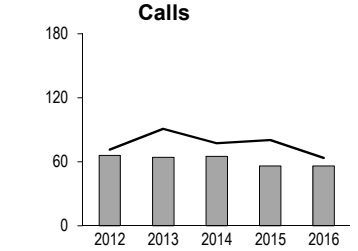
	2012	2013	2014	2015	2016
Greensboro	5	5			
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Greensboro	97.6%	98.7%	99.7%	99.9%	99.7%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Greensboro	66	64	65	56	56
Average	71	91	77	80	63

Greenville Emergency Communications

Fiscal Year 2015–16

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 made directly 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 is 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 110,736 incoming calls in the fiscal year and dispatched 87,339 calls.

Conditions Affecting Service, Performance, and Costs

The emegency phone systems in Greenville and Pitt County were both changed during FY 2013–14. The city's tracking system lost two months of data on incoming calls which could not be retrieved. The drop in calls answered is a data issue rather than a change in service over the prior year. The problem did not affect calls dispatched. The new system will be able to more accurately track calls, particularly 911 calls.

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 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
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	Yes
FTE Positions	
Telecommunicators/Call-Takers	16.0
Other	1.0
Total Positions	17.0
Average Length of Service for Call-Takers	11.8 years
Total Incoming Calls	110,736
Total 911 Calls	28,663
Total Calls Dispatched	87,339
Outgoing Calls Other than Dispatch	21,315
Revenue from E-911 Fees	None

Full Cost Profile

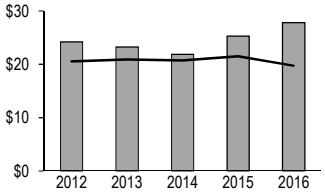
Cost Breakdown by Percentage	
Personal Services	52.3%
Operating Costs	21.9%
Capital Costs	25.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,279,879
Operating Costs	$535,018
Capital Costs	$631,086
TOTAL	$2,445,983

Greenville Emergency Communications

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

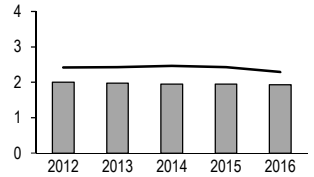
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Greenville	$24.20	$23.23	$21.86	$25.30	$27.81
Average	$20.55	$20.90	$20.70	$21.52	$19.74

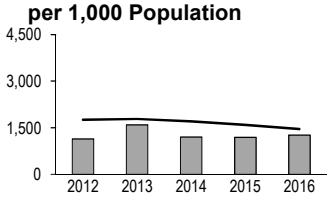
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	2.00	1.97	1.95	1.94	1.93
Average	2.42	2.43	2.46	2.43	2.29

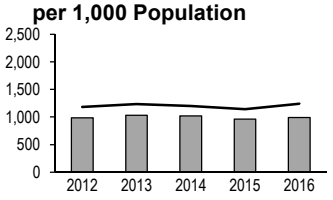
Workload Measures

Total Calls Answered per 1,000 Population



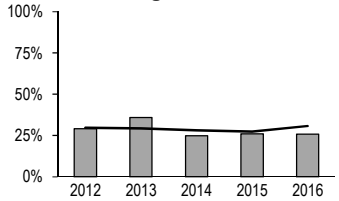
	2012	2013	2014	2015	2016
Greenville	1,133	1,589	1,196	1,191	1,259
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	983	1,031	1,023	964	993
Average	1,183	1,233	1,200	1,142	1,243

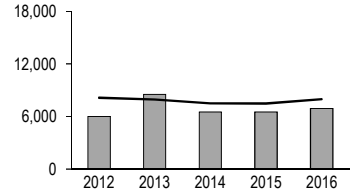
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Greenville	29.1%	35.8%	24.8%	26.0%	25.9%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

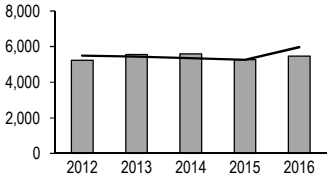
Efficiency Measures

Calls Answered per Telecommunicator



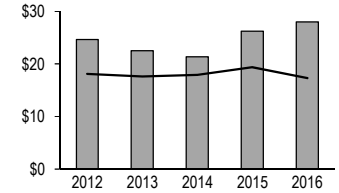
	2012	2013	2014	2015	2016
Greenville	6,021	8,555	6,522	6,510	6,921
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Greenville	5,223	5,552	5,577	5,266	5,459
Average	5,502	5,445	5,358	5,258	5,970

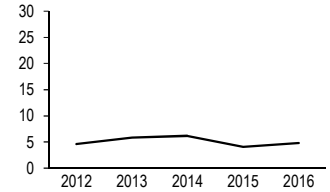
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Greenville	$24.63	$22.53	$21.37	$26.25	$28.01
Average	$18.15	$17.63	$17.96	$19.40	$17.34

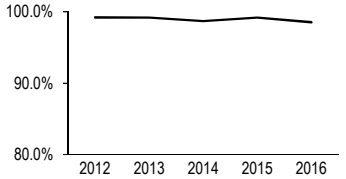
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



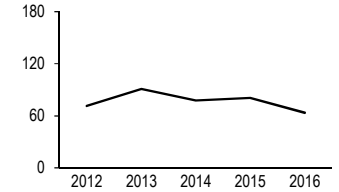
	2012	2013	2014	2015	2016
Greenville					
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Greenville					
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Greenville					
Average	71	91	77	80	63

Hickory Emergency Communications

Fiscal Year 2015–16

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.

Hickory's communications center dispathed 102,299 calls during the year. The number of incoming calls was not available.

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.

Incoming calls in Hickory are down over time 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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
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	12.0
Other	0.0
Total Positions	12.0
Average Length of Service for Call-Takers	8.5 years
Total Incoming Calls	NA
Total 911 Calls	10,326
Total Calls Dispatched	102,299
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	$52,421

Full Cost Profile

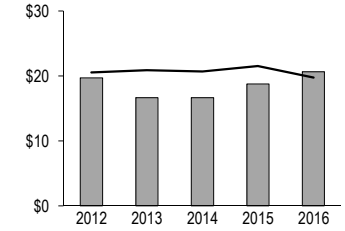
Cost Breakdown by Percentage	
Personal Services	77.1%
Operating Costs	21.1%
Capital Costs	1.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$641,268
Operating Costs	$175,308
Capital Costs	$15,453
TOTAL	$832,029

Hickory Emergency Communications

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

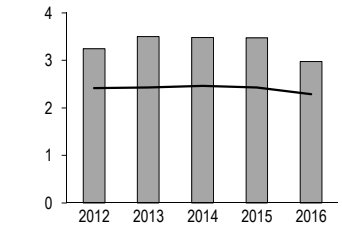
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Hickory	$19.71	$16.67	$16.67	$18.77	$20.62
Average	$20.55	$20.90	$20.70	$21.52	$19.74

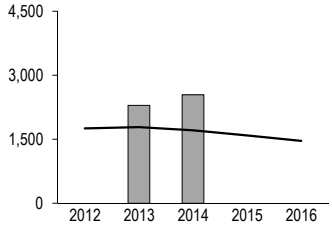
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	3.24	3.50	3.48	3.47	2.97
Average	2.42	2.43	2.46	2.43	2.29

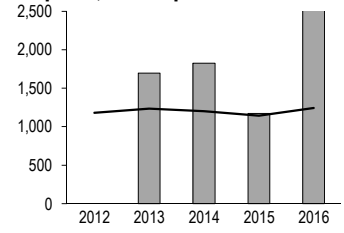
Workload Measures

Total Calls Answered per 1,000 Population



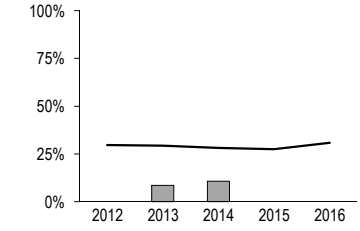
	2012	2013	2014	2015	2016
Hickory		2,291	2,543		0
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Hickory		1,697	1,825	1,172	2,535
Average	1,183	1,233	1,200	1,142	1,243

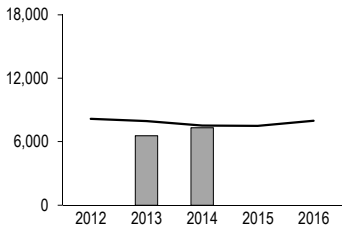
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Hickory		8.5%	10.7%	0.0%	0.0%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

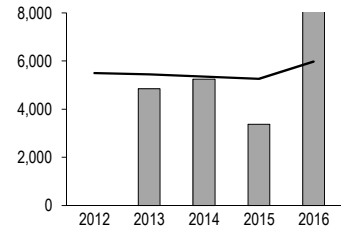
Efficiency Measures

Calls Answered per Telecommunicator



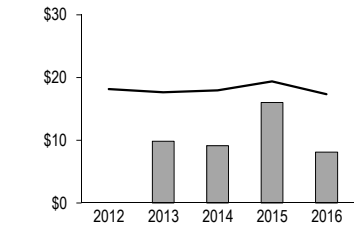
	2012	2013	2014	2015	2016
Hickory		6,553	7,306		
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Hickory		4,852	5,243	3,377	8,525
Average	5,502	5,445	5,358	5,258	5,970

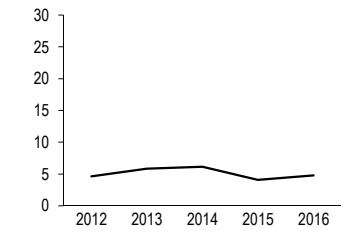
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Hickory		$9.82	$9.13	$16.01	$8.13
Average	$18.15	$17.63	$17.96	$19.40	$17.34

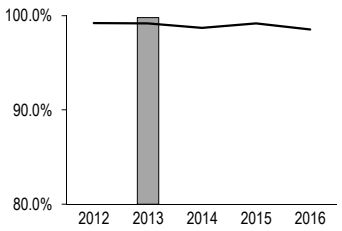
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



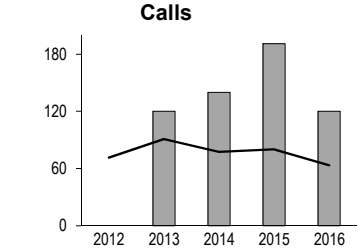
	2012	2013	2014	2015	2016
Hickory					
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Hickory		99.8%			
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Hickory		120	140	191	120
Average	71	91	77	80	63

High Point Emergency Communications

Fiscal Year 2015–16

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 302,385 calls in the fiscal year, dispatching 142,406 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 $537,177 in E-911 revenues to support system operations.

Conditions Affecting Service, Performance, and Costs

High Point was unable to provide data on certain measures, given a change in technology.

Municipal Profile

Population (OSBM 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,994
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	30.0
Other	3.0
Total Positions	33.0
Average Length of Service for Call-Takers	10.2 years
Total Incoming Calls	302,385
Total 911 Calls	94,868
Total Calls Dispatched	142,406
Outgoing Calls Other than Dispatch	NA
Revenue from E-911 Fees	$537,177

Full Cost Profile

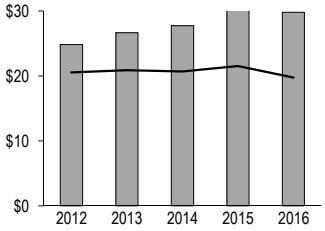
Cost Breakdown by Percentage	
Personal Services	68.2%
Operating Costs	21.6%
Capital Costs	10.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,229,676
Operating Costs	$705,522
Capital Costs	$332,382
TOTAL	$3,267,580

High Point Emergency Communications

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

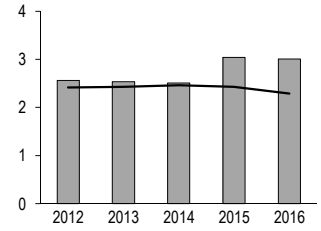
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
High Point	$24.81	$26.62	$27.71	$30.22	$29.77
Average	$20.55	$20.90	$20.70	$21.52	$19.74

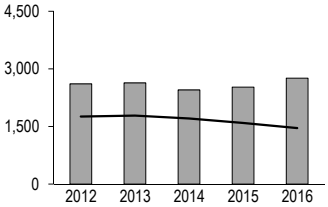
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	2.56	2.54	2.51	3.04	3.01
Average	2.42	2.43	2.46	2.43	2.29

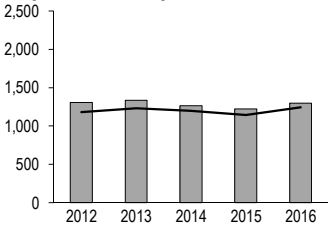
Workload Measures

Total Calls Answered per 1,000 Population



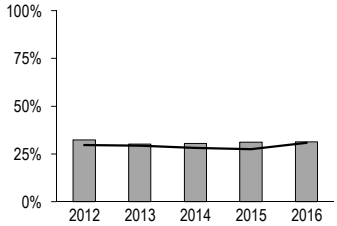
	2012	2013	2014	2015	2016
High Point	2,603	2,630	2,449	2,522	2,755
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
High Point	1,305	1,334	1,264	1,224	1,298
Average	1,183	1,233	1,200	1,142	1,243

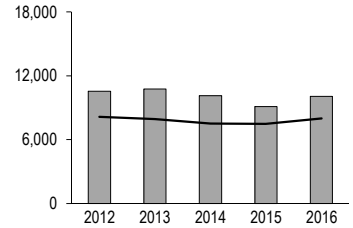
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
High Point	32.3%	30.2%	30.5%	31.2%	31.4%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

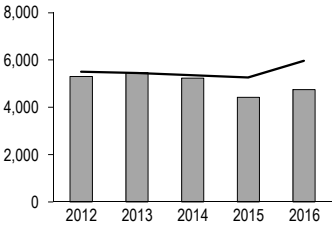
Efficiency Measures

Calls Answered per Telecommunicator



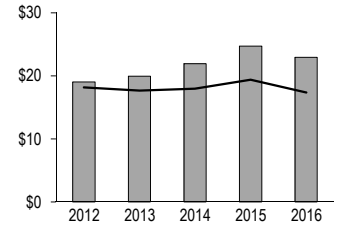
	2012	2013	2014	2015	2016
High Point	10,563	10,763	10,140	9,125	10,080
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
High Point	5,296	5,460	5,232	4,428	4,747
Average	5,502	5,445	5,358	5,258	5,970

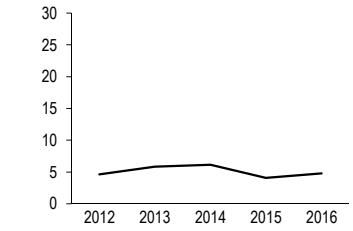
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
High Point	$19.01	$19.95	$21.93	$24.70	$22.95
Average	$18.15	$17.63	$17.96	$19.40	$17.34

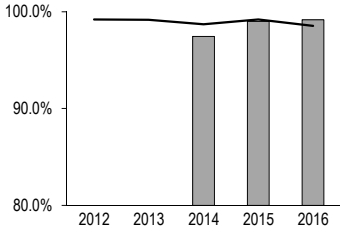
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



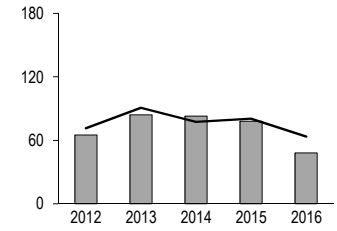
	2012	2013	2014	2015	2016
High Point					
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
High Point			97.5%	99.0%	99.2%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
High Point	65	84	83	78	48
Average	71	91	77	80	63

Raleigh Emergency Communications

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Emergency Communications Center (ECC) is the answering and dispatch agency for all of Wake County. It provides dispatch services for forty-four law enforcement, fire, EMS, rescue, and public service agencies. The ECC takes 911 calls for the Wake County Sheriff's Department, but these calls are transferred to the Sheriff's telecommunicators.

The Town of Cary provides its own services for fire and police, but the ECC provides EMS call service for Cary.

The ECC uses a combination of city-owned and leased tower and transmitter sites. The system uses an 800 MHz system. Over 7,000 mobile and portable radios have been issued to public safety and non-public safety users within Wake County for use of the system.

The ECC handled a total of 899,464 calls in the fiscal year, dispatching 749,034 calls. The ECC defines highest priority emergency calls as all fire and EMS calls and also police calls with a priority of "0" or "1" as defined by the police agency being dispatched.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

At the start of FY 2015–16 the ECC switched from all positions being on automatic call distribution to specific positions utilizing the automatic system. This decreased answering efficiency, but it helped increase responder safety issues that were identified when all positions used the automatic system. Additionally during this year, the ECC had a one-fourth attrition rate which impacted answering efficiencies as well.

Municipal Profile

Population (OSBM 2015)	1,007,631
Land Area (Square Miles)	831.92
Persons per Square Mile	1,211
Median Family Income U.S. Census 2010	$68,678
County	Wake

Service Profile

Primary or Secondary Answering Point	Primary
Calls Dispatched	
Police	Yes
Fire	Yes
Other	Yes
FTE Positions	
Telecommunicators/Call-Takers	97.0
Other	21.0
Total Positions	118.0
Average Length of Service for Call-Takers	4.3 years
Total Incoming Calls	899,464
Total 911 Calls	611,047
Total Calls Dispatched	749,034
Outgoing Calls Other than Dispatch	328,263
Revenue from E-911 Fees	$2,861,093

Full Cost Profile

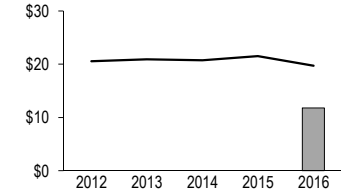
Cost Breakdown by Percentage	
Personal Services	60.6%
Operating Costs	37.6%
Capital Costs	1.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,208,424
Operating Costs	$4,467,481
Capital Costs	$216,616
TOTAL	$11,892,521

Raleigh Emergency Communications

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

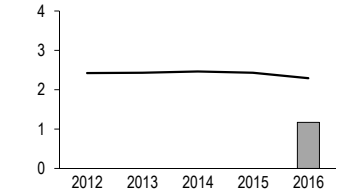
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Raleigh					$11.80
Average	$20.55	$20.90	$20.70	$21.52	$19.74

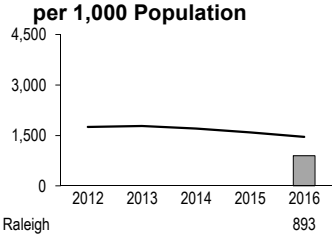
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					1.17
Average	2.42	2.43	2.46	2.43	2.29

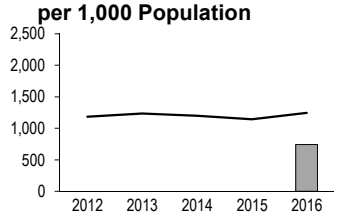
Workload Measures

Total Calls Answered per 1,000 Population



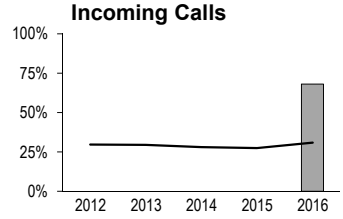
	2012	2013	2014	2015	2016
Raleigh					893
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					743
Average	1,183	1,233	1,200	1,142	1,243

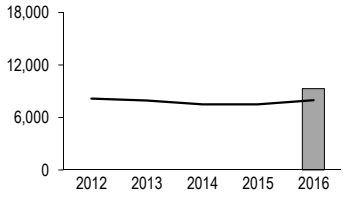
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Raleigh					67.9%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

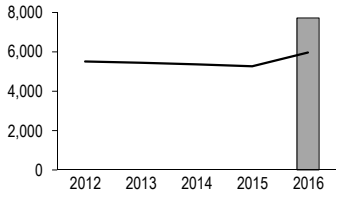
Efficiency Measures

Calls Answered per Telecommunicator



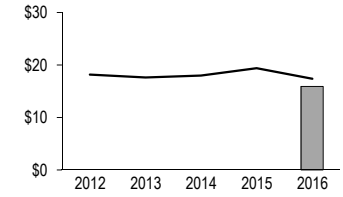
	2012	2013	2014	2015	2016
Raleigh					9,273
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Raleigh					7,722
Average	5,502	5,445	5,358	5,258	5,970

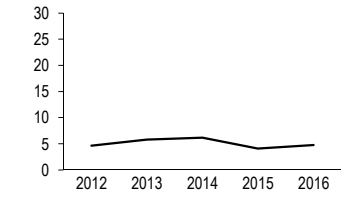
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Raleigh					$15.88
Average	$18.15	$17.63	$17.96	$19.40	$17.34

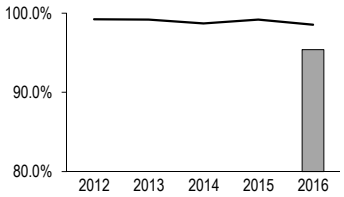
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



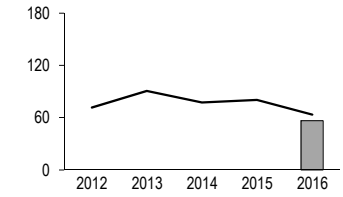
	2012	2013	2014	2015	2016
Raleigh					
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Raleigh					95.4%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Raleigh					56
Average	71	91	77	80	63

Winston-Salem Emergency Communications

Fiscal Year 2015–16

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 Motorola 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 541,839 calls in the fiscal year, dispatching 260,564 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 have just occurred and the suspect is still there.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	232,143
Land Area (Square Miles)	132.45
Persons per Square Mile	1,753
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	47.0
Other	2.0
Total Positions	49.0
Average Length of Service for Call-Takers	8.4 years
Total Incoming Calls	541,839
Total 911 Calls	248,148
Total Calls Dispatched	260,564
Outgoing Calls Other than Dispatch	74,826
Revenue from E-911 Fees	$490,716

Full Cost Profile

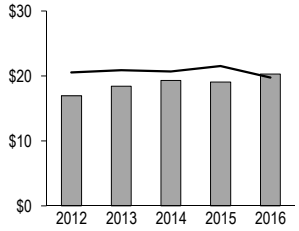
Cost Breakdown by Percentage	
Personal Services	71.5%
Operating Costs	24.6%
Capital Costs	4.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,464,083
Operating Costs	$1,191,065
Capital Costs	$191,869
TOTAL	$4,847,017

Winston-Salem Emergency Communications

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

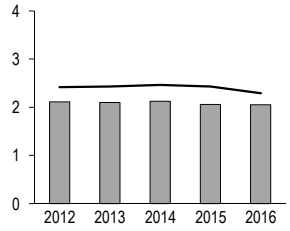
Resource Measures

Emergency Communications Services Costs per Capita



	2012	2013	2014	2015	2016
Winston-Salem	$16.96	$18.44	$19.30	$19.07	$20.29
Average	$20.55	$20.90	$20.70	$21.52	$19.74

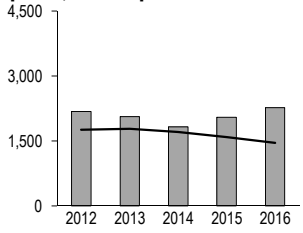
Emergency Communications FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	2.11	2.10	2.12	2.06	2.05
Average	2.42	2.43	2.46	2.43	2.29

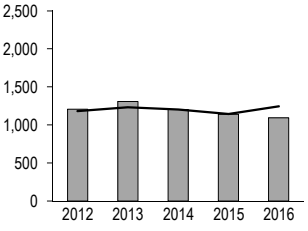
Workload Measures

Total Calls Answered per 1,000 Population



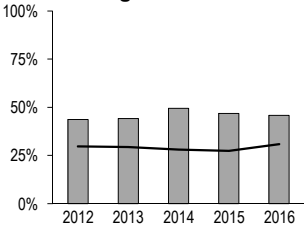
	2012	2013	2014	2015	2016
Winston-Salem	2,179	2,061	1,824	2,045	2,268
Average	1,757	1,784	1,709	1,588	1,460

Calls Dispatched per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	1,207	1,307	1,201	1,138	1,091
Average	1,183	1,233	1,200	1,142	1,243

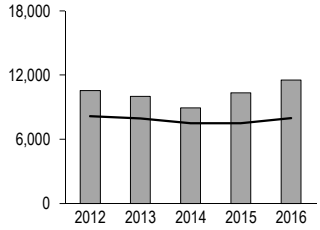
E-911 Calls as a Percentage of All Incoming Calls



	2012	2013	2014	2015	2016
Winston-Salem	43.6%	44.2%	49.5%	46.9%	45.8%
Average	29.7%	29.4%	28.1%	27.5%	30.8%

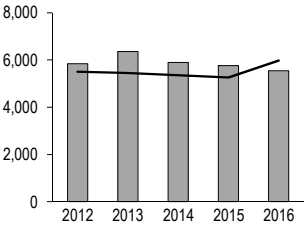
Efficiency Measures

Calls Answered per Telecommunicator



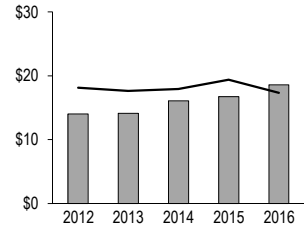
	2012	2013	2014	2015	2016
Winston-Salem	10,536	10,014	8,948	10,353	11,528
Average	8,157	7,950	7,508	7,500	7,988

Calls Dispatched per Telecommunicator



	2012	2013	2014	2015	2016
Winston-Salem	5,836	6,350	5,893	5,763	5,544
Average	5,502	5,445	5,358	5,258	5,970

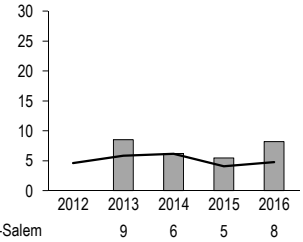
Emergency Communications Cost per Call Dispatched



	2012	2013	2014	2015	2016
Winston-Salem	$14.06	$14.11	$16.07	$16.75	$18.60
Average	$18.15	$17.63	$17.96	$19.40	$17.34

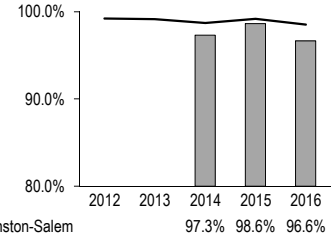
Effectiveness Measures

Number of Seconds from Initial Ring to Answer



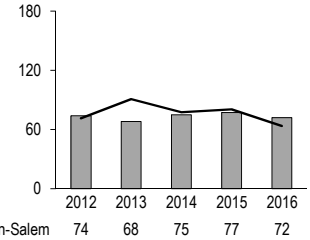
	2012	2013	2014	2015	2016
Winston-Salem		9	6	5	8
Average	5	6	6	4	5

Percent of E-911 Calls Answered within Twenty Seconds



	2012	2013	2014	2015	2016
Winston-Slem			97.3%	98.6%	96.6%
Average	99.2%	99.2%	98.7%	99.2%	98.5%

Average Time in Seconds from CAD Entry to Dispatch for Priority One Calls



	2012	2013	2014	2015	2016
Winston-Salem	74	68	75	77	72
Average	71	91	77	80	63


UNC
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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	Preservation	Resurfacing	Rehabilitation	Preservation	Resurfacing	Rehabilitation	FTE Positions for City Staff
Apex	302.08	0.0	0.0	3.5	0.0%	0.0%	1.2%	10.0
Asheville	714.40	0.0	0.0	4.7	0.0%	0.0%	0.7%	17.1
Burlington	496.87	6.1	0.0	0.0	1.2%	0.0%	0.0%	4.0
Cary	953.44	0.0	25.0	5.0	0.0%	2.6%	0.5%	10.4
Chapel Hill	333.40	0.0	0.0	0.0	0.0%	0.0%	0.0%	6.5
Charlotte	5,284.24	10.9	6.5	255.8	0.2%	0.1%	4.8%	123.0
Concord	702.01	0.0	0.0	0.0	0.0%	0.0%	0.0%	9.2
Greensboro	3,357.00	22.7	32.2	0.0	0.7%	1.0%	0.0%	51.0
Greenville	674.70	0.0	0.0	17.2	0.0%	0.0%	2.6%	9.0
Hickory	719.79	0.0	17.9	0.0	0.0%	2.5%	0.0%	7.0
High Point	1,319.00	0.0	8.4	30.3	0.0%	0.6%	2.3%	15.3
Raleigh	2,350.00	0.0	36.0	0.0	0.0%	1.5%	0.0%	48.0
Salisbury	345.20	0.0	0.0	6.7	0.0%	0.0%	1.9%	4.3
Wilson	695.37	6.3	3.3	0.0	0.9%	0.5%	0.0%	5.5
Winston-Salem	2,218.54	23.7	3.5	110.7	1.1%	0.2%	5.0%	43.5

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

Apex — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Apex's Streets Department was responsible for maintaining approximately 302 lane miles during the fiscal year. The Streets Department is part of the Public Works and Utilities Division for the town.

The town rehabilitated 3.5 lane miles during the year which involves milling and resurfacing. This represented treatment of about 1.6 percent of total lane miles maintained.

The city reported that 72 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 surveying in 2015.

The number of potholes reported for the fiscal year was fifty-five. The percentage of potholes repaired within twenty-four hours was one hundred 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 forty-five utility cuts and fifty-two maintenance patches.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	7.00
FTE Positions—Other	3.00
Lane Miles Maintained	302.1
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	3.5
TOTAL	3.5
Total Costs for All Treatment Types	$615,154
Potholes Repaired	55
Number of Utility Cuts	45
Number of Maintenance Patches (exclusive of potholes and utility cuts)	52
Average Cost per Ton of Hot Asphalt during Year	$82.10

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	27.2%
Operating Costs	66.9%
Capital Costs	5.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$316,931
Operating Costs	$780,628
Capital Costs	$69,390
TOTAL	$1,166,949

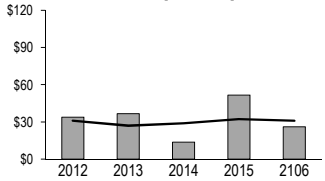
Apex

Asphalt Maintenance and Repair

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

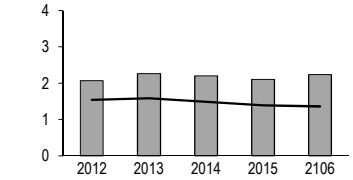
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



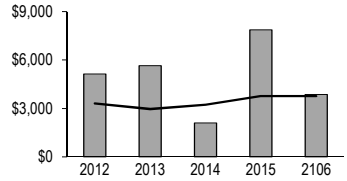
	2012	2013	2014	2015	2106
Apex	$33.70	$36.72	$13.65	$51.70	$26.08
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Apex	2.07	2.26	2.20	2.11	2.23
Average	1.54	1.58	1.49	1.39	1.36

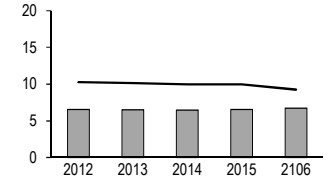
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Apex	$5,130	$5,643	$2,107	$7,868	$3,863
Average	$3,309	$2,960	$3,234	$3,765	$3,764

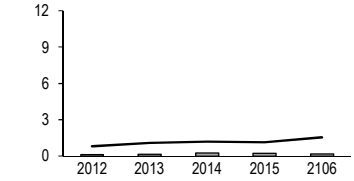
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



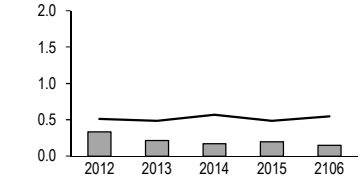
	2012	2013	2014	2015	2106
Apex	6.6	6.5	6.5	6.6	6.8
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Apex	0.12	0.16	0.26	0.23	0.18
Average	0.80	1.08	1.17	1.12	1.54

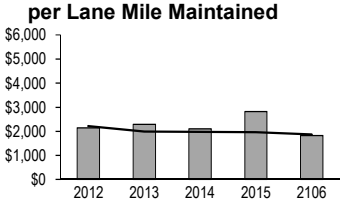
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Apex	0.33	0.21	0.17	0.20	0.15
Average	0.51	0.48	0.57	0.48	0.55

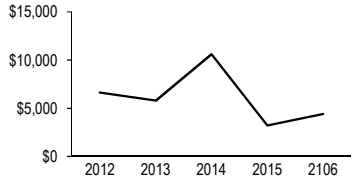
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



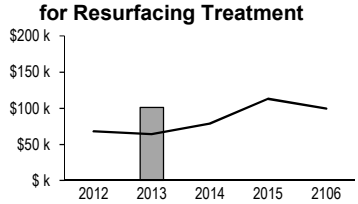
	2012	2013	2014	2015	2106
Apex	$2,150	$2,287	$2,107	$2,827	$1,827
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



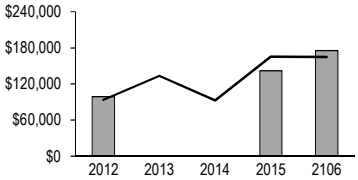
	2012	2013	2014	2015	2106
Apex					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



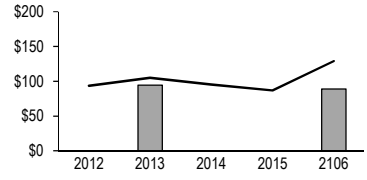
	2012	2013	2014	2015	2106
Apex		$101 k			
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Apex	$99 k			$142 k	$176 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

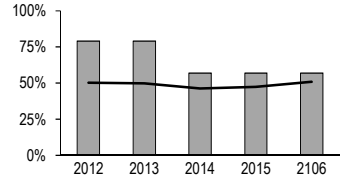
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Apex		$94			$89
Average	$94	$105	$95	$87	$129

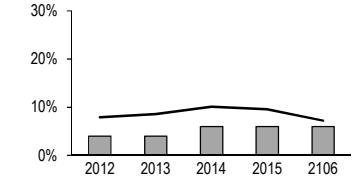
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



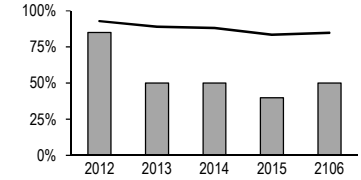
	2012	2013	2014	2015	2106
Apex	79%	79%	57%	57%	57%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Apex	4.0%	4.0%	6.0%	6.0%	6.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Apex	85%	50%	50%	40%	50%
Average	93%	89%	88%	84%	85%

Asheville — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Asheville was responsible for maintaining approximately 714 lane miles during the fiscal year. The city treated 4.7 lane miles during the year, equating to approximately 0.7 percent of total lane miles.

The work done was rehabilitation which includes milling and resurfacing. Most of the work was done by contractor crews covering 4.47 lane miles at an average depth of 1.5 inches and using 8,793 tons of asphalt. City crews rehabilitated 0.21 lane miles at an average depth of two inches and using 612 tons of asphalt.

The city reported that eight 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.

The number of potholes reported for the year was 6,231. 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 2,152 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.

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 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Topography	Hill, mountains
Climate	Moderate; ice and snow

Service Profile

FTE Positions—Crews	15.00
FTE Positions—Other	2.09
Lane Miles Maintained	714.4
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	4.7
TOTAL	4.7
Total Costs for All Treatment Types	$1,947,124
Potholes Repaired	6,231
Number of Utility Cuts	2,152
Number of Maintenance Patches (exclusive of potholes and utility cuts)	18
Average Cost per Ton of Hot Asphalt during Year	$90.00

Full Cost Profile

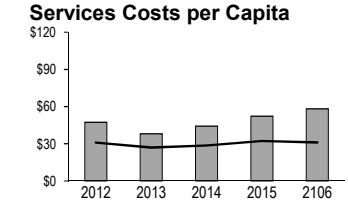
Cost Breakdown by Percentage	
Personal Services	24.8%
Operating Costs	67.7%
Capital Costs	7.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,309,154
Operating Costs	$3,576,645
Capital Costs	$393,391
TOTAL	$5,279,190

Asheville — Asphalt Maintenance and Repair

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

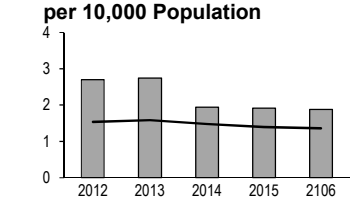
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



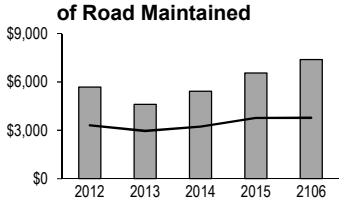
	2012	2013	2014	2015	2106
Asheville	$47.23	$38.09	$44.15	$52.27	$58.07
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Asheville	2.70	2.74	1.94	1.91	1.88
Average	1.54	1.58	1.49	1.39	1.36

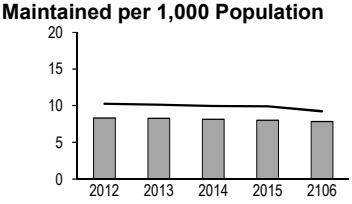
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Asheville	$5,684	$4,605	$5,426	$6,540	$7,390
Average	$3,309	$2,960	$3,234	$3,765	$3,764

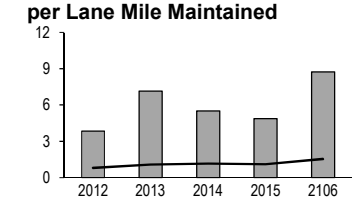
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



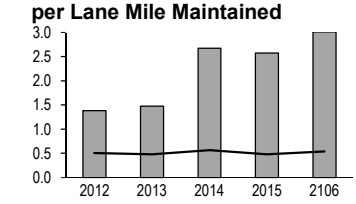
	2012	2013	2014	2015	2106
Asheville	8.3	8.3	8.1	8.0	7.9
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Asheville	3.84	7.14	5.52	4.88	8.72
Average	0.80	1.08	1.17	1.12	1.54

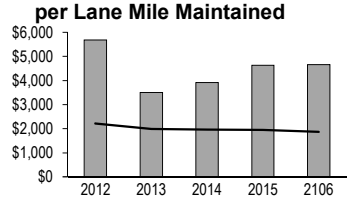
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Asheville	1.39	1.47	2.67	2.57	3.01
Average	0.51	0.48	0.57	0.48	0.55

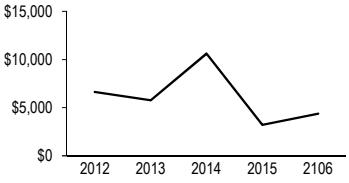
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



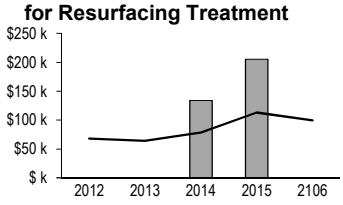
	2012	2013	2014	2015	2106
Asheville	$5,684	$3,506	$3,911	$4,635	$4,664
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



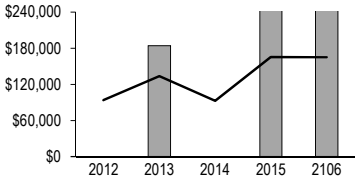
	2012	2013	2014	2015	2106
Asheville					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



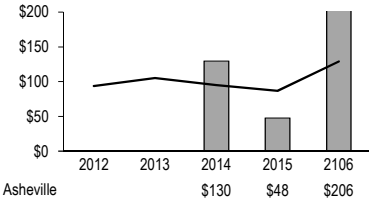
	2012	2013	2014	2015	2106
Asheville			$134 k	$205 k	
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Asheville		$184 k		$313 k	$416 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

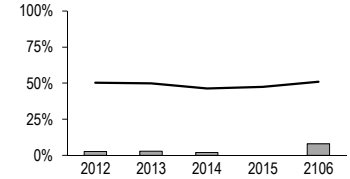
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Asheville			$130	$48	$206
Average	$94	$105	$95	$87	$129

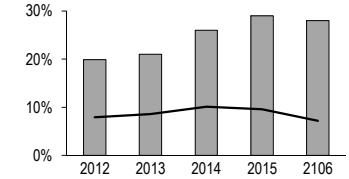
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



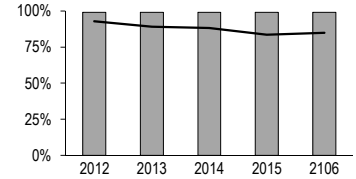
	2012	2013	2014	2015	2106
Asheville	3%	3%	2%	0%	8%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Asheville	19.9%	21.0%	26.0%	29.0%	28.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Asheville	99%	99%	99%	99%	99%
Average	93%	89%	88%	84%	85%

Burlington Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Burlington was responsible for maintaining 497 lane miles during the fiscal year. The city treated a total of 6.1 lane miles, equating to approximately 1.2 percent of total lane miles.

Of the street work done, all the 6.1 lane miles were given preservation treatment such as crack sealing or thin overlays. The preservation work was done by contractor crews.

The city reported that 72 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 2015.

The city reported a total of 141 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 139 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

Municipal Profile

Population (OSBM 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	4.00
FTE Positions—Other	0.00
Lane Miles Maintained	496.9
Lane Miles Treated	
Preservation	6.1
Resurfacing	0.0
Rehabilitation	0.0
TOTAL	6.1
Total Costs for All Treatment Types	$20,453
Potholes Repaired	141
Number of Utility Cuts	139
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Average Cost per Ton of Hot Asphalt during Year	$65.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	16.8%
Operating Costs	33.5%
Capital Costs	49.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$192,007
Operating Costs	$381,626
Capital Costs	$566,388
TOTAL	$1,140,021

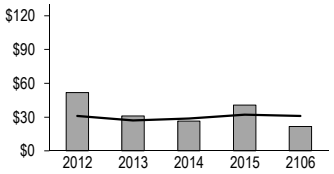
Burlington

Asphalt Maintenance and Repair

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

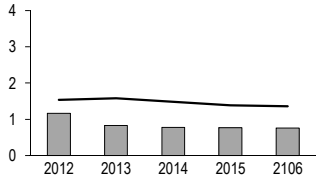
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



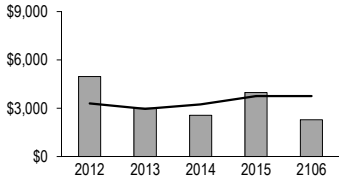
	2012	2013	2014	2015	2106
Burlington	$51.74	$31.14	$26.64	$40.69	$21.82
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Burlington	1.17	0.83	0.78	0.77	0.77
Average	1.54	1.58	1.49	1.39	1.36

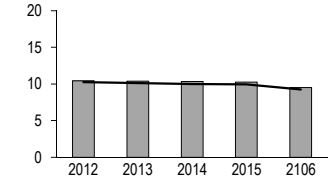
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Burlington	$4,973	$2,999	$2,576	$3,974	$2,294
Average	$3,309	$2,960	$3,234	$3,765	$3,764

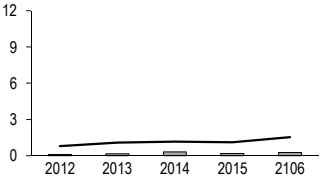
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



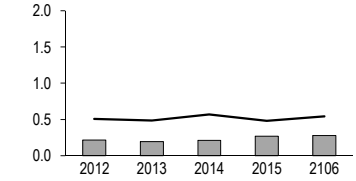
	2012	2013	2014	2015	2106
Burlington	10.4	10.4	10.3	10.2	9.5
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Burlington	0.12	0.17	0.32	0.20	0.28
Average	0.80	1.08	1.17	1.12	1.54

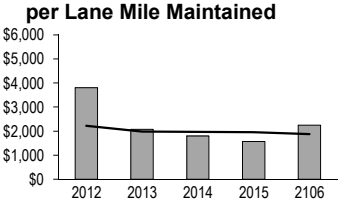
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Burlington	0.22	0.20	0.21	0.27	0.28
Average	0.51	0.48	0.57	0.48	0.55

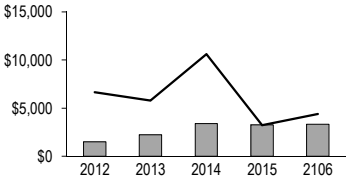
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



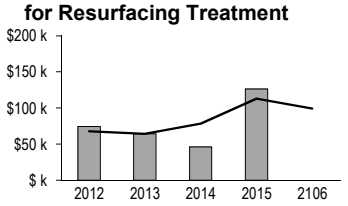
	2012	2013	2014	2015	2106
Burlington	$3,796	$2,080	$1,795	$1,574	$2,253
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



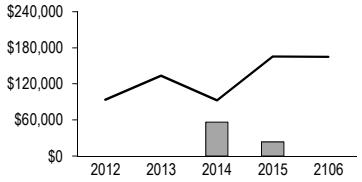
	2012	2013	2014	2015	2106
Burlington	$1,515	$2,229	$3,399	$3,250	$3,337
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



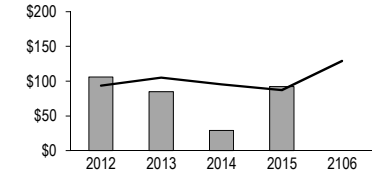
	2012	2013	2014	2015	2106
Burlington	$74 k	$64 k	$46 k	$126 k	
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Burlington			$56 k	$23 k	
Average	$94 k	$134 k	$93 k	$165 k	$165 k

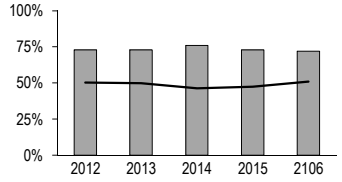
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Burlington	$106	$85	$29	$92	
Average	$94	$105	$95	$87	$129

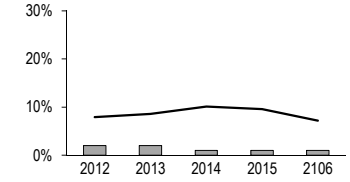
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



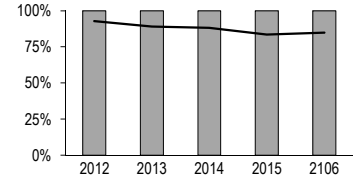
	2012	2013	2014	2015	2106
Burlington	73%	73%	76%	73%	72%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Burlington	2.0%	2.0%	1.0%	1.0%	1.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Burlington	100%	100%	100%	100%	100%
Average	93%	89%	88%	84%	85%

Cary — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Cary was responsible for maintaining approximately 953 lane miles during the fiscal year. A total of 30 lane miles received some form of repair work, equating to approximately 3.1 percent of total lane miles. For repair work done, 25 lane miles were resurfaced by contract crews and an additional five miles were given rehabilitation which involves milling followed by resurfacing.

The number of potholes reported for the year was 137. The percentage of potholes repaired within twenty-four hours was 81 percent.

A total of 151 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 fifty maintenance patches were also made during the year to fix problems other than utility cuts and potholes.

Conditions Affecting Service, Performance, and Costs

The number of potholes was up in FY 2013–14. The year had harsher winter weather with below freezing temperatures. The town made greater use of salt and brine to treat streets, which aggravated conditions leading to more potholes.

Municipal Profile

Population (OSBM 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	10.00
FTE Positions—Other	0.41
Lane Miles Maintained	953.4
Lane Miles Treated	
Preservation	0.0
Resurfacing	25.0
Rehabilitation	5.0
TOTAL	30.0
Total Costs for All Treatment Types	$5,493,817
Potholes Repaired	137
Number of Utility Cuts	151
Number of Maintenance Patches (exclusive of potholes and utility cuts)	50
Average Cost per Ton of Hot Asphalt during Year	$55.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	9.1%
Operating Costs	89.9%
Capital Costs	1.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$603,225
Operating Costs	$5,947,848
Capital Costs	$66,867
TOTAL	$6,617,940

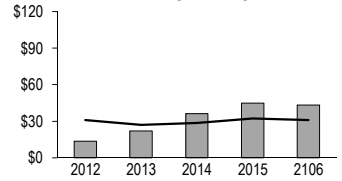
Cary

Asphalt Maintenance and Repair

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

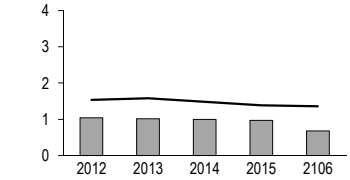
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



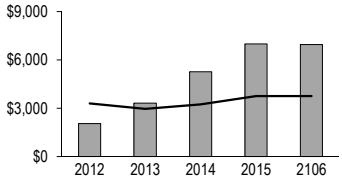
	2012	2013	2014	2015	2106
Cary	$13.84	$22.16	$36.36	$44.95	$43.36
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Cary	1.04	1.02	1.00	0.98	0.68
Average	1.54	1.58	1.49	1.39	1.36

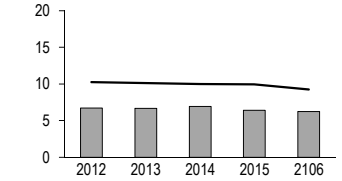
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Cary	$2,058	$3,326	$5,256	$6,993	$6,941
Average	$3,309	$2,960	$3,234	$3,765	$3,764

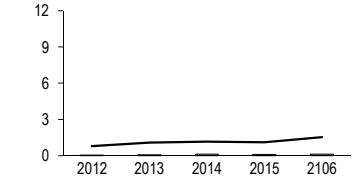
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



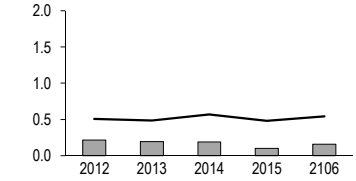
	2012	2013	2014	2015	2106
Cary	6.7	6.7	6.9	6.4	6.2
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Cary	0.07	0.09	0.13	0.11	0.14
Average	0.80	1.08	1.17	1.12	1.54

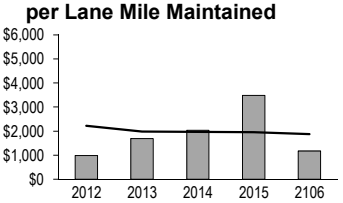
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Cary	0.22	0.20	0.19	0.10	0.16
Average	0.51	0.48	0.57	0.48	0.55

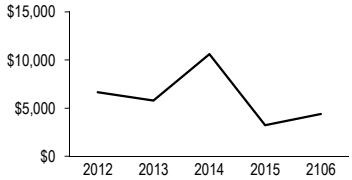
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



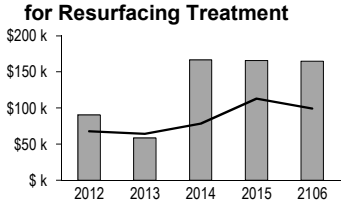
	2012	2013	2014	2015	2106
Cary	$987	$1,685	$2,030	$3,483	$1,179
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



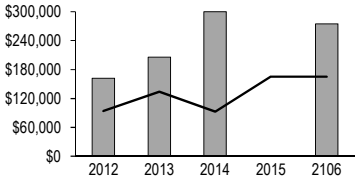
	2012	2013	2014	2015	2106
Cary					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



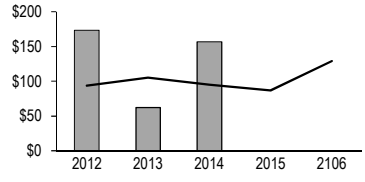
	2012	2013	2014	2015	2106
Cary	$90 k	$59 k	$166 k	$166 k	$165 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Cary	$162 k	$205 k	$300 k		$275 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

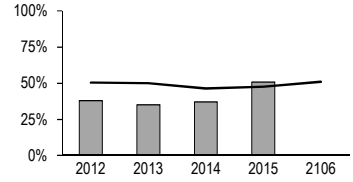
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Cary	$173	$62	$157		
Average	$94	$105	$95	$87	$129

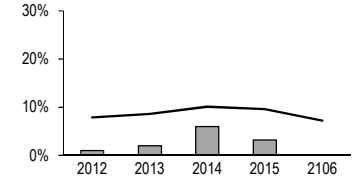
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



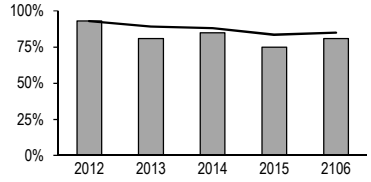
	2012	2013	2014	2015	2106
Cary	38%	35%	37%	51%	
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Cary	1.0%	2.0%	6.0%	3.2%	
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Cary	93%	81%	85%	75%	81%
Average	93%	89%	88%	84%	85%

Chapel Hill — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Asphalt maintenance is performed by the Town of Chapel Hill Streets and Construction Services Division of the Public Works Department. The Town provides services in asphalt maintenance, sidewalk maintenance, storm debris cleanup, gravel road maintenance, snow and ice removal, and cleanup following special events. During the fiscal year the town was responsible for maintaining approximately 333 lane miles. No treatment work was done in the fiscal year.

The town reported that 50 percent of its lane miles rated 85 or above on its most recent pavement condition rating conducted in 2014. The roads were rated by US Infrastructure of Carolina using the system relying on the Institute for Transportation Research and Education (ITRE) degradation curves.

The number of potholes reported for the year was forty-five. Permit holders repaired thirty-nine utility cuts during the year. A permit is required for any non-town entity cutting inside the right-of-way. The permit holder is responsible for all repairs. Because one permit can involve multiple cuts, the actual number of cuts is higher than the number listed. The Streets Inspector monitors the work and bills the responsible party. Public Works Engineering Division inspects larger projects involving a water or sewer line replacement.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Though the FY 2015–16 Chapel Hill budget included $585,222 for annual resurfacing work, this funding was encumbered and carried forward into FY 2016–17 and is not reflected in the costs for this service area for the report year. A total of 5.5 lane miles were resurfaced using FY 2015–16 funds but at the beginning of FY 2016–17. These costs will be reported in next yea'rs benchmarking report.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	5.00
FTE Positions—Other	1.50
Lane Miles Maintained	333.4
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	0.0
TOTAL	0.0
Total Costs for All Treatment Types	$0
Potholes Repaired	45
Number of Utility Cuts	39
Number of Maintenance Patches (exclusive of potholes and utility cuts)	na
Registered Vehicles	
Registered Vehicles/Square Mile	
Average Cost per Ton of Hot Asphalt during Year	$67.00

Full Cost Profile

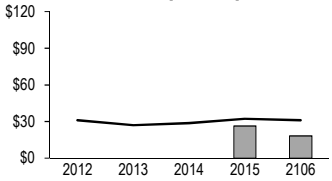
Cost Breakdown by Percentage	
Personal Services	35.1%
Operating Costs	42.2%
Capital Costs	22.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$379,460
Operating Costs	$456,153
Capital Costs	$245,414
TOTAL	$1,081,027

Chapel Hill — Asphalt Maintenance and Repair

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

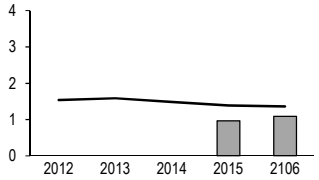
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



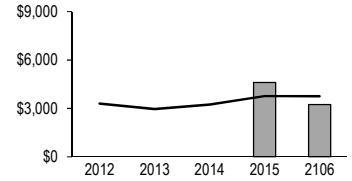
	2012	2013	2014	2015	2106
Chapel Hill				$26.21	$18.14
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Chapel Hill				0.96	1.09
Average	1.54	1.58	1.49	1.39	1.36

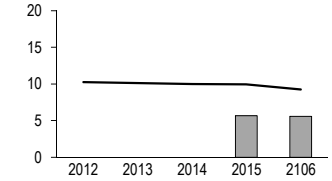
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Chapel Hill				$4,615	$3,242
Average	$3,309	$2,960	$3,234	$3,765	$3,764

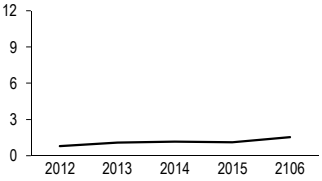
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



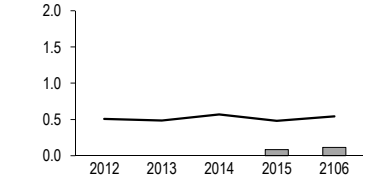
	2012	2013	2014	2015	2106
Chapel Hill				5.7	5.6
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Chapel Hill					
Average	0.80	1.08	1.17	1.12	1.54

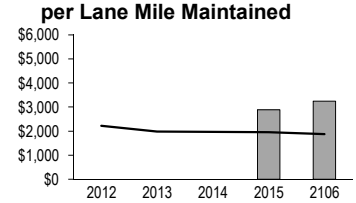
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Chapel Hill				0.09	0.12
Average	0.51	0.48	0.57	0.48	0.55

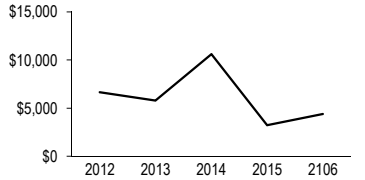
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



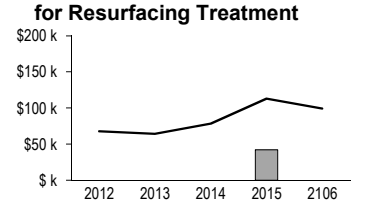
	2012	2013	2014	2015	2106
Chapel Hill				$2,886	$3,242
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



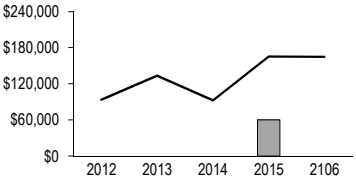
	2012	2013	2014	2015	2106
Chapel Hill					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



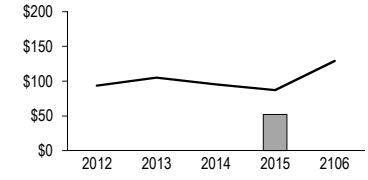
	2012	2013	2014	2015	2106
Chapel Hill				$42 k	
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Chapel Hill				$60 k	
Average	$94 k	$134 k	$93 k	$165 k	$165 k

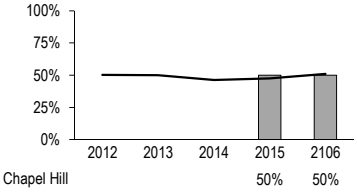
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Chapel Hill				$52	
Average	$94	$105	$95	$87	$129

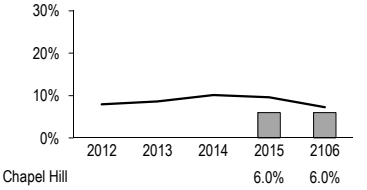
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



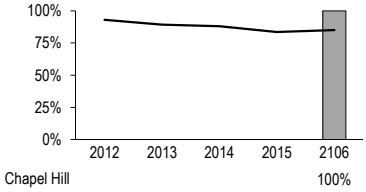
	2012	2013	2014	2015	2106
Chapel Hill				50%	50%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Chapel Hill				6.0%	6.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Chapel Hill					100%
Average	93%	89%	88%	84%	85%

Charlotte — Asphalt Maintenance

Fiscal Year 2015–16

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 specialty repair items such as brick walls, decorative pavers, fences, and guardrails. During the fiscal year, the city was responsible for maintaining approximately 5,284 lane miles and treated 273.2 lane miles, equating to approximately 5.2 percent of total lane miles.

Of the treatment work done during the year, 10.9 lane miles received preservation work, completed by city crews, such as crack sealing or thin overlays. Resurfacing work covered 6.5 lane miles and was done by contractors. Additionally, 255.8 lane miles were rehabilitated by contractors with milling followed by resurfacing. Contractors used a total of 169,674 tons of asphalt applied at an average depth of 1.11 inches.

The city reported that 53.5 percent of its lane miles rated 85 or above on its most recent pavement condition rating conducted in 2016.

The number of potholes reported for the fiscal year was 1,173. The percentage of potholes repaired within twenty-four hours was 87 percent. A total of 3,648 utility cuts were also repaired during the year by contractors and the Street Maintenance Division.

Conditions Affecting Service, Performance, and Costs

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

Municipal Profile

Population (OSBM 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	105.00
FTE Positions—Other	18.00
Lane Miles Maintained	5,284.2
Lane Miles Treated	
Preservation	10.9
Resurfacing	6.5
Rehabilitation	255.8
TOTAL	273.2
Total Costs for All Treatment Types	$15,651,974
Potholes Repaired	1,173
Number of Utility Cuts	3,648
Number of Maintenance Patches (exclusive of potholes and utility cuts)	na
Registered Vehicles	
Registered Vehicles/Square Mile	
Average Cost per Ton of Hot Asphalt during Year	$39.76

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	20.6%
Operating Costs	68.2%
Capital Costs	11.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,740,428
Operating Costs	$22,328,442
Capital Costs	$3,690,156
TOTAL	$32,759,026

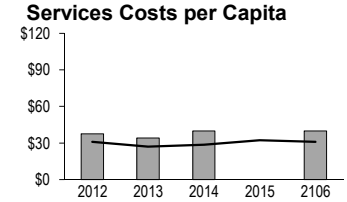
Charlotte

Asphalt Maintenance and Repair

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

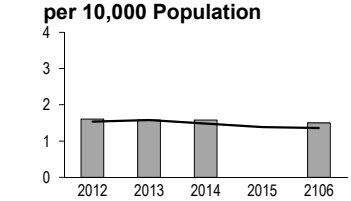
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



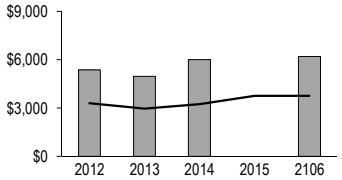
	2012	2013	2014	2015	2106
Charlotte	$37.45	$34.07	$39.98		$40.02
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Charlotte	1.61	1.58	1.58		1.50
Average	1.54	1.58	1.49	1.39	1.36

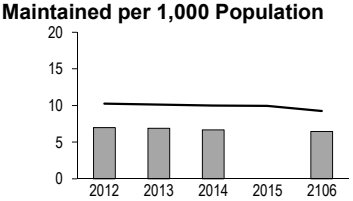
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Charlotte	$5,369	$4,957	$5,993		$6,199
Average	$3,309	$2,960	$3,234	$3,765	$3,764

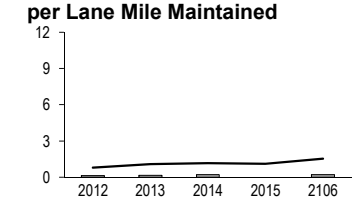
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



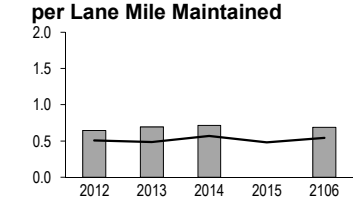
	2012	2013	2014	2015	2106
Charlotte	7.0	6.9	6.7		6.5
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Charlotte	0.15	0.16	0.23		0.22
Average	0.80	1.08	1.17	1.12	1.54

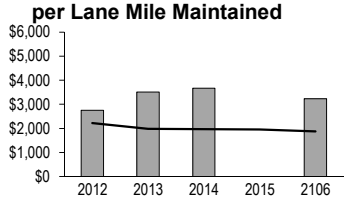
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Charlotte	0.65	0.69	0.72		0.69
Average	0.51	0.48	0.57	0.48	0.55

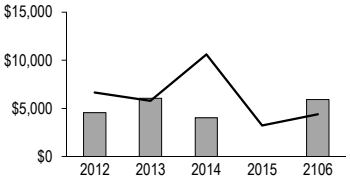
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



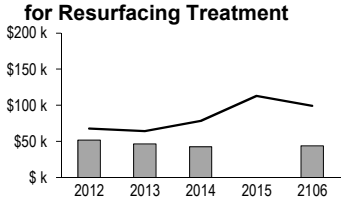
	2012	2013	2014	2015	2106
Charlotte	$2,757	$3,517	$3,664		$3,237
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



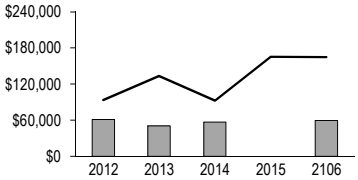
	2012	2013	2014	2015	2106
Charlotte	$4,557	$6,042	$4,024		$5,915
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



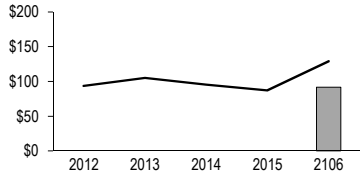
	2012	2013	2014	2015	2106
Charlotte	$52 k	$47 k	$43 k		$44 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Charlotte	$61 k	$51 k	$57 k		$60 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

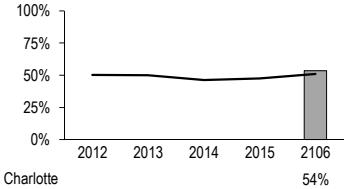
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Charlotte					$92
Average	$94	$105	$95	$87	$129

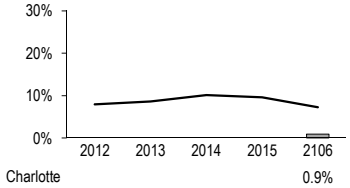
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



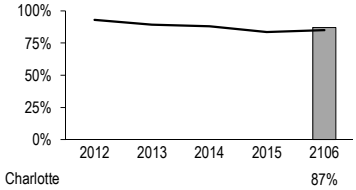
	2012	2013	2014	2015	2106
Charlotte					54%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Charlotte					0.9%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Charlotte					87%
Average	93%	89%	88%	84%	85%

Concord Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Concord was responsible for maintaining approximately 702 lane miles during the fiscal year. No lane miles were treated during the year.

The city reported that 46 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2014 using a city system based on North Carolina Department of Transportation ratings.

The number of potholes reported for the year was ninety-two, including those reported by citizens and the city. The percentage of potholes repaired within twenty-four hours was 95 percent. Concord also reported 428 utility cuts that were repaired and 60 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.

The increase in roads rated below 45 percent increased in FY 2013–14 as a result of significant adverse winter weather taking a toll on streets around the city.

The drop in utility cuts with the rise in potholes in FY 2013–14 is due in part to better tracking and classification of repair work. Some repairs had previously been reported as utility cut repairs but were actually pothole repairs.

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	7.50
FTE Positions—Other	1.65
Lane Miles Maintained	702.0
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	0.0
TOTAL	0.0
Total Costs for All Treatment Types	$0
Potholes Repaired	92
Number of Utility Cuts	428
Number of Maintenance Patches (exclusive of potholes and utility cuts)	60
Registered Vehicles	
Registered Vehicles/Square Mile	
Average Cost per Ton of Hot Asphalt during Year	$65.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	51.4%
Operating Costs	34.0%
Capital Costs	14.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$547,009
Operating Costs	$361,341
Capital Costs	$155,265
TOTAL	$1,063,615

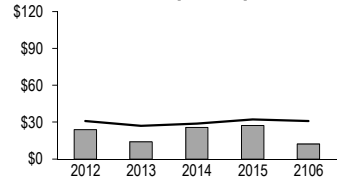
Concord

Asphalt Maintenance and Repair

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

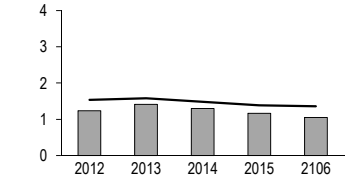
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



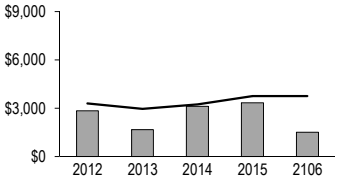
	2012	2013	2014	2015	2106
Concord	$23.73	$13.86	$25.64	$27.24	$12.21
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Concord	1.24	1.42	1.30	1.17	1.05
Average	1.54	1.58	1.49	1.39	1.36

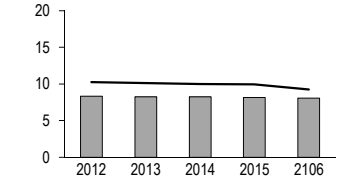
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Concord	$2,846	$1,677	$3,113	$3,331	$1,515
Average	$3,309	$2,960	$3,234	$3,765	$3,764

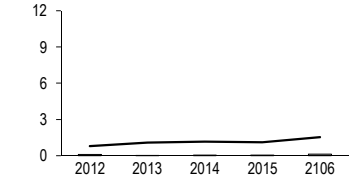
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



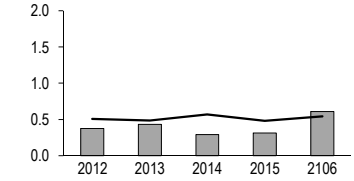
	2012	2013	2014	2015	2106
Concord	8.3	8.3	8.2	8.2	8.1
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Concord	0.11	0.04	0.06	0.07	0.13
Average	0.80	1.08	1.17	1.12	1.54

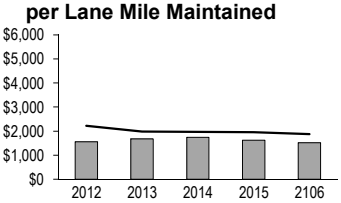
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Concord	0.38	0.43	0.29	0.31	0.61
Average	0.51	0.48	0.57	0.48	0.55

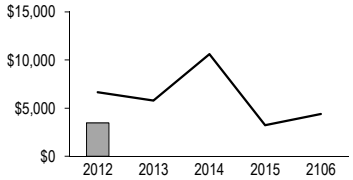
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



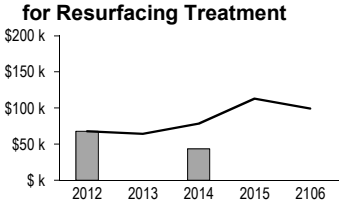
	2012	2013	2014	2015	2106
Concord	$1,562	$1,677	$1,747	$1,620	$1,515
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



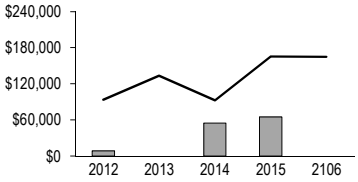
	2012	2013	2014	2015	2106
Concord	$3,469				
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



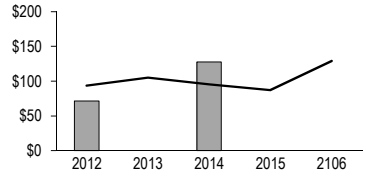
	2012	2013	2014	2015	2106
Concord	$68 k		$44 k		
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Concord	$9 k		$55 k	$65 k	
Average	$94 k	$134 k	$93 k	$165 k	$165 k

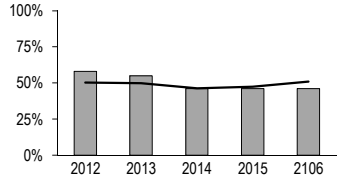
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Concord	$72		$127		
Average	$94	$105	$95	$87	$129

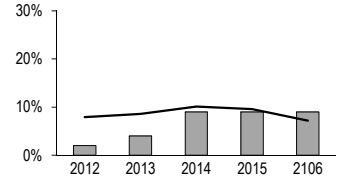
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



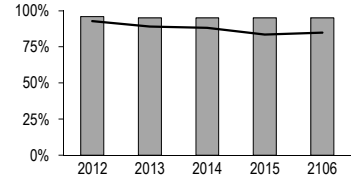
	2012	2013	2014	2015	2106
Concord	58%	55%	46%	46%	46%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Concord	2.0%	4.0%	9.0%	9.0%	9.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Concord	96%	95%	95%	95%	95%
Average	93%	89%	88%	84%	85%

Greensboro — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Greensboro was responsible for maintaining 3,357 lane miles during the fiscal year. This includes 925 lane miles of state roads. Greensboro treated a total of 54.9 lane miles during the year, equating to about 1.6 percent of total lane miles.

Of the treatment work done on Greensboro's streets, 22.7 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 32.2 lane miles by contract crews. This resurfacing work required a total of 17,697 tons of asphalt and used an average resurfacing depth of 1.25 inches.

The number of potholes reported for the year was 6,468. The percentage of potholes repaired within twenty-four hours was 72 percent. A total of 359 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-eight 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.

Municipal Profile

Population (OSBM 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
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	3,357.0
Lane Miles Treated	
Preservation	22.7
Resurfacing	32.2
Rehabilitation	0.0
TOTAL	54.9
Total Costs for All Treatment Types	$2,824,500
Potholes Repaired	6,468
Number of Utility Cuts	359
Number of Maintenance Patches (exclusive of potholes and utility cuts)	98
Registered Vehicles	
Registered Vehicles/Square Mile	
Average Cost per Ton of Hot Asphalt during Year	$51.98

Full Cost Profile

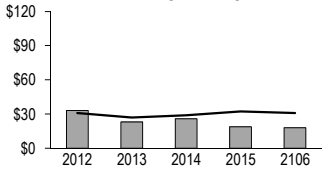
Cost Breakdown by Percentage	
Personal Services	44.5%
Operating Costs	55.5%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,239,204
Operating Costs	$2,790,022
Capital Costs	$0
TOTAL	$5,029,226

Greensboro — Asphalt Maintenance and Repair

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

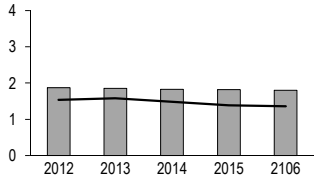
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



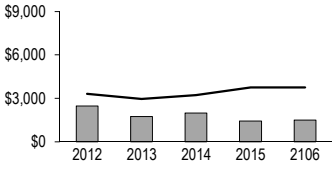
	2012	2013	2014	2015	2106
Greensboro	$33.09	$22.98	$25.82	$18.73	$17.78
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Greensboro	1.87	1.85	1.83	1.82	1.80
Average	1.54	1.58	1.49	1.39	1.36

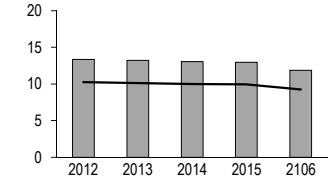
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Greensboro	$2,482	$1,740	$1,981	$1,447	$1,498
Average	$3,309	$2,960	$3,234	$3,765	$3,764

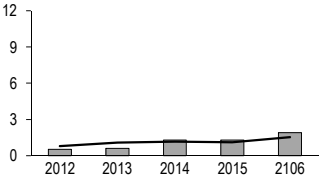
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



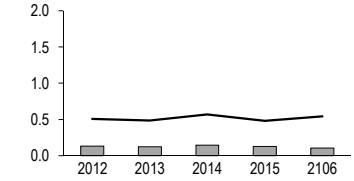
	2012	2013	2014	2015	2106
Greensboro	13.3	13.2	13.0	12.9	11.9
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Greensboro	0.53	0.61	1.32	1.30	1.93
Average	0.80	1.08	1.17	1.12	1.54

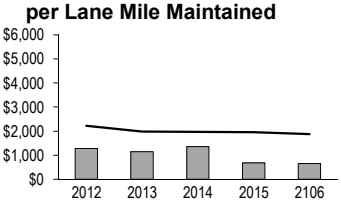
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Greensboro	0.14	0.12	0.15	0.13	0.11
Average	0.51	0.48	0.57	0.48	0.55

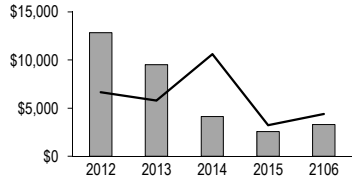
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



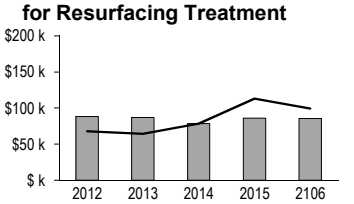
	2012	2013	2014	2015	2106
Greensboro	$1,280	$1,142	$1,359	$676	$657
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



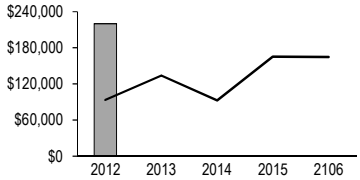
	2012	2013	2014	2015	2106
Greensboro	$12,843	$9,519	$4,123	$2,560	$3,282
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



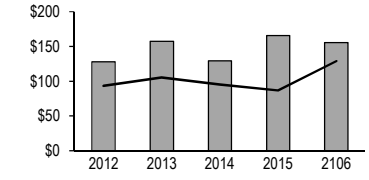
	2012	2013	2014	2015	2106
Greensboro	$88 k	$87 k	$79 k	$86 k	$85 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Greensboro	$220 k				
Average	$94 k	$134 k	$93 k	$165 k	$165 k

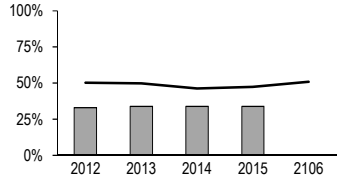
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Greensboro	$128	$157	$129	$166	$155
Average	$94	$105	$95	$87	$129

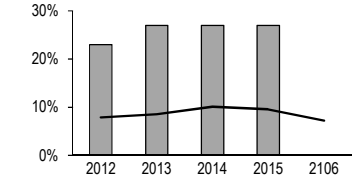
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



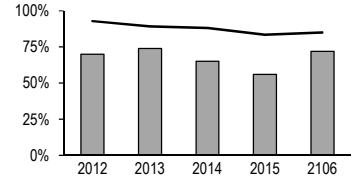
	2012	2013	2014	2015	2106
Greensboro	33%	34%	34%	34%	
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Greensboro	23.0%	27.0%	27.0%	27.0%	
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Greensboro	70%	74%	65%	56%	72%
Average	93%	89%	88%	84%	85%

Greenville — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Greenville was responsible for maintaining approximately 675 lane miles during the fiscal year, all city streets. During the year, Greenville reported that 17.2 lane miles were given some form of treatment, equating to 2.6 percent of total lane miles. Contract crews treated 17.2 lane miles with rehabilitation which includes milling along with resurfacing. .

Greenville reported that 46 percent of lane miles were rated 85 or better on its most recent pavement condition rating, conducted in 2014 by a consultant.

Conditions Affecting Service, Performance, and Costs

Greenville did a special pilot project using a proprietary material for lane preservation work during FY 2013–14. This material is applied at a high rate over the asphalt service to be treated resulting in higher costs per lane mile for preservation work. The project will be evaluated over time to determine if the higher cost produces improved performance.

The number of potholes, utility cuts, and maintenance patching was not available for the last two year.

Municipal Profile

Population (OSBM 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	8.00
FTE Positions—Other	1.00
Lane Miles Maintained	674.7
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	17.2
TOTAL	17.2
Total Costs for All Treatment Types	$1,167,906
Potholes Repaired	NA
Number of Utility Cuts	NA
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Average Cost per Ton of Hot Asphalt during Year	NA

Full Cost Profile

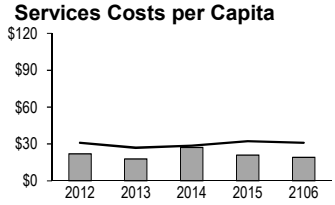
Cost Breakdown by Percentage	
Personal Services	26.1%
Operating Costs	29.9%
Capital Costs	44.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$437,125
Operating Costs	$499,968
Capital Costs	$735,186
TOTAL	$1,672,279

Greenville — Asphalt Maintenance and Repair

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

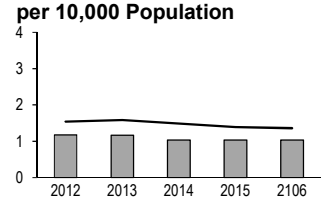
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



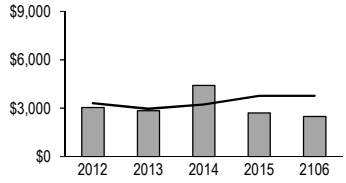
	2012	2013	2014	2015	2106
Greenville	$21.85	$17.64	$27.08	$20.77	$19.01
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Greenville	1.18	1.16	1.03	1.03	1.03
Average	1.54	1.58	1.49	1.39	1.36

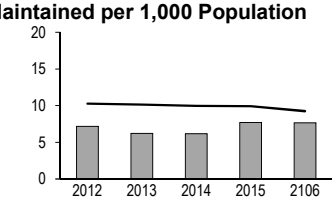
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Greenville	$3,042	$2,828	$4,397	$2,691	$2,479
Average	$3,309	$2,960	$3,234	$3,765	$3,764

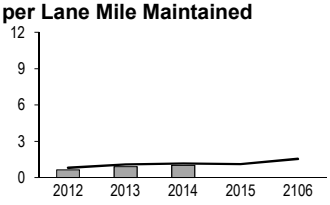
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



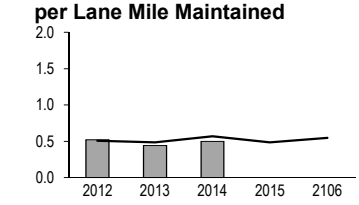
	2012	2013	2014	2015	2106
Greenville	7.2	6.2	6.2	7.7	7.7
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Greenville	0.64	0.90	1.02		
Average	0.80	1.08	1.17	1.12	1.54

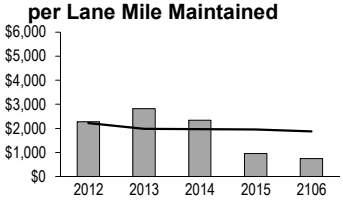
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Greenville	0.52	0.44	0.50		
Average	0.51	0.48	0.57	0.48	0.55

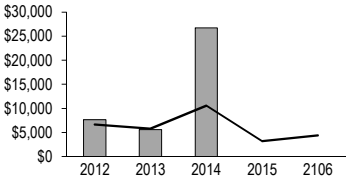
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



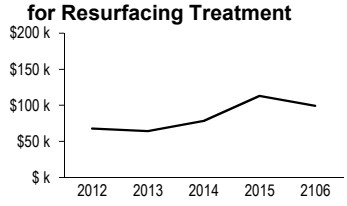
	2012	2013	2014	2015	2106
Greenville	$2,276	$2,821	$2,338	$960	$748
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



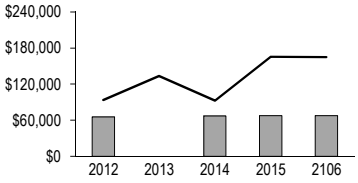
	2012	2013	2014	2015	2106
Greenville	$7,627	$5,597	$26,693		
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



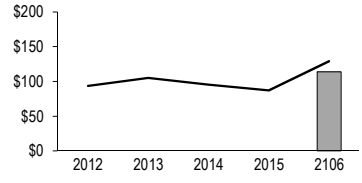
	2012	2013	2014	2015	2106
Greenville					
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Greenville	$66 k		$67 k	$68 k	$68 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

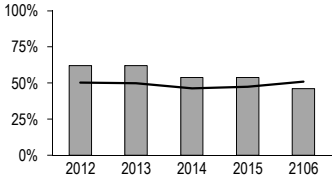
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Greenville					$114
Average	$94	$105	$95	$87	$129

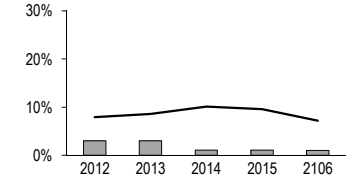
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



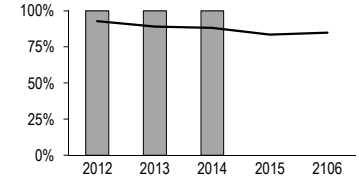
	2012	2013	2014	2015	2106
Greenville	62%	62%	54%	54%	46%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Greenville	3.0%	3.0%	1.1%	1.1%	1.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Greenville	100%	100%	100%		
Average	93%	89%	88%	84%	85%

Hickory — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Hickory was responsible for maintaining approximately 720 lane miles during the fiscal year, including 238.8 lane miles of state roads. The city treated a total of 17.9 lane miles with resurfacing, equating to 2.9 percent of total lane miles.

The city resurfaced 17.9 lane miles using contractors. A total of 7,750 tons of asphalt were used by the contractors. The average resurfacing depth used was 1.5 inches and required 10,361 tons of asphalt.

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 the year was 275, including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was 94 percent.

Conditions Affecting Service, Performance, and Costs

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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

FTE Positions—Crews	6.00
FTE Positions—Other	1.00
Lane Miles Maintained	719.8
Lane Miles Treated	
Preservation	0.0
Resurfacing	17.9
Rehabilitation	0.0
TOTAL	17.9
Total Costs for All Treatment Types	$948,081
Potholes Repaired	275
Number of Utility Cuts	NA
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Registered Vehicles	
Registered Vehicles/Square Mile	
Average Cost per Ton of Hot Asphalt during Year	$76.50

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	20.0%
Operating Costs	78.1%
Capital Costs	2.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$267,763
Operating Costs	$1,046,440
Capital Costs	$26,319
TOTAL	$1,340,522

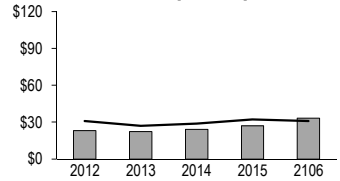
Hickory

Asphalt Maintenance and Repair

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

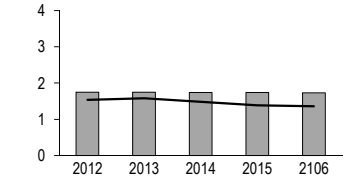
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



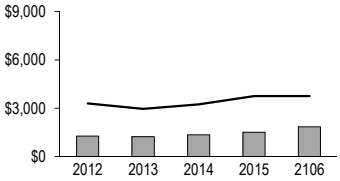
	2012	2013	2014	2015	2106
Hickory	$22.94	$22.16	$24.18	$27.01	$33.22
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Hickory	1.75	1.75	1.74	1.74	1.73
Average	1.54	1.58	1.49	1.39	1.36

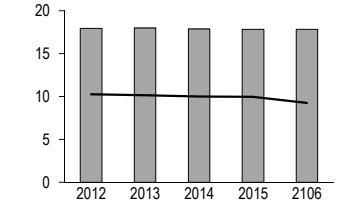
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Hickory	$1,279	$1,234	$1,353	$1,515	$1,862
Average	$3,309	$2,960	$3,234	$3,765	$3,764

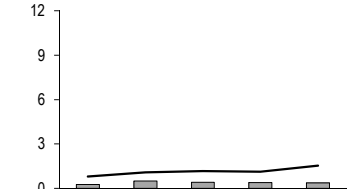
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



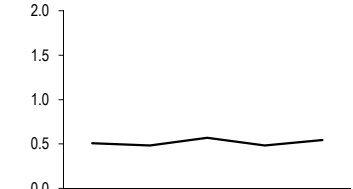
	2012	2013	2014	2015	2106
Hickory	17.9	18.0	17.9	17.8	17.8
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Hickory	0.27	0.51	0.41	0.41	0.38
Average	0.80	1.08	1.17	1.12	1.54

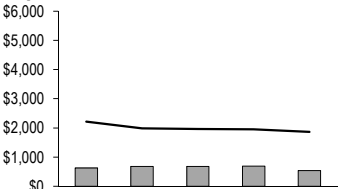
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Hickory					
Average	0.51	0.48	0.57	0.48	0.55

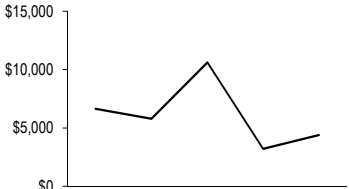
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



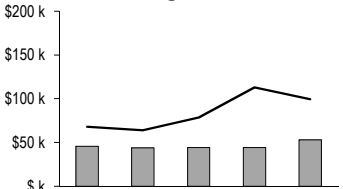
	2012	2013	2014	2015	2106
Hickory	$629	$678	$685	$690	$545
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



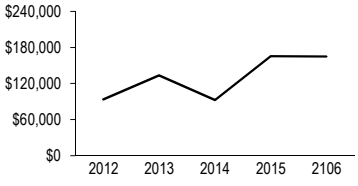
	2012	2013	2014	2015	2106
Hickory					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



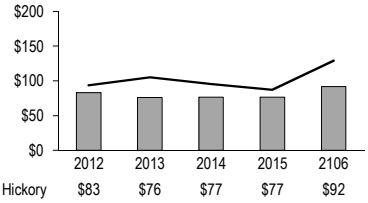
	2012	2013	2014	2015	2106
Hickory	$46 k	$44 k	$44 k	$44 k	$53 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Hickory					
Average	$94 k	$134 k	$93 k	$165 k	$165 k

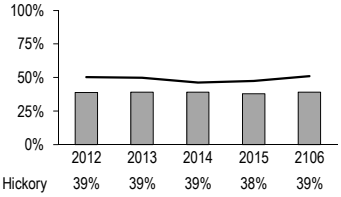
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Hickory	$83	$76	$77	$77	$92
Average	$94	$105	$95	$87	$129

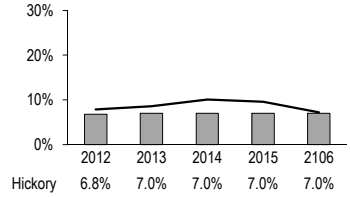
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



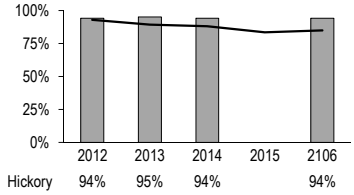
	2012	2013	2014	2015	2106
Hickory	39%	39%	39%	38%	39%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Hickory	6.8%	7.0%	7.0%	7.0%	7.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Hickory	94%	95%	94%		94%
Average	93%	89%	88%	84%	85%

High Point — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of High Point was responsible for maintaining 1,319 lane miles during the fiscal year, which includes 340 lane miles of state roads. The city treated 38.7 lane miles by various methods, equating to 2.9 percent of total lane miles.

City crews resurfaced 8.4 lane miles using 5,813 tons of asphalt. Contract crews rehabilitated 30.3 lane miles which includes resurfacing preceded by milling work. A total of 26,151 tons of asphalt were used by the contracting crews. The average resurfacing depth was two inches for the city and contract crew work.

The city reported that 47 percent of its street segments rated 85 or above on its most recent pavement condition rating, conducted in 2014. The rating was done by a consultant using the Institute for Transportation Research and Education (ITRE) rating system.

The number of potholes reported for the year was 1,599, including self-reported and citizen-reported potholes. The percentage of potholes repaired within twenty-four hours was 94 percent.

A total of 291 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

Improvements in FY 2013–14 in the measurement and tracking of road segments in High Point have produced an estimate of fewer lane miles than in prior years. Rather than an actual drop in lane miles, the lower reported mileage reflects a more accurate tracking. The relative decrease in reported lane miles means that some of the performance measures saw an increase, which was due to this improvement in measurement rather than actual changes.

Municipal Profile

Population (OSBM 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
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	1,319.0
Lane Miles Treated	
Preservation	0.0
Resurfacing	8.4
Rehabilitation	30.3
TOTAL	38.7
Total Costs for All Treatment Types	$3,229,859
Potholes Repaired	1,599
Number of Utility Cuts	291
Number of Maintenance Patches (exclusive of potholes and utility cuts)	41
Average Cost per Ton of Hot Asphalt during Year	$55.00

Full Cost Profile

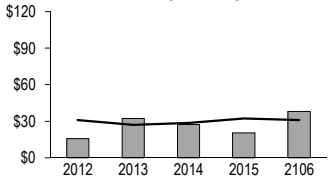
Cost Breakdown by Percentage	
Personal Services	17.1%
Operating Costs	77.5%
Capital Costs	5.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$714,649
Operating Costs	$3,236,871
Capital Costs	$223,513
TOTAL	$4,175,033

High Point — Asphalt Maintenance and Repair

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

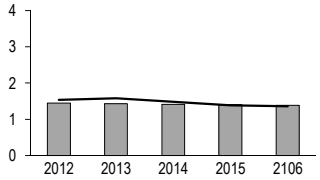
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



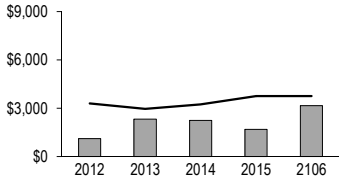
	2012	2013	2014	2015	2106
High Point	$15.75	$32.28	$27.31	$20.61	$38.04
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
High Point	1.45	1.43	1.42	1.40	1.39
Average	1.54	1.58	1.49	1.39	1.36

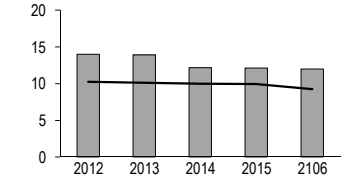
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
High Point	$1,125	$2,323	$2,244	$1,697	$3,165
Average	$3,309	$2,960	$3,234	$3,765	$3,764

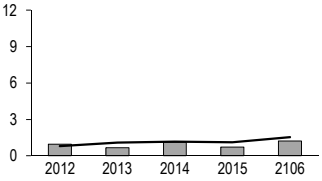
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



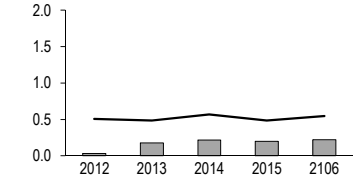
	2012	2013	2014	2015	2106
High Point	14.0	13.9	12.2	12.1	12.0
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
High Point	0.96	0.66	1.13	0.73	1.21
Average	0.80	1.08	1.17	1.12	1.54

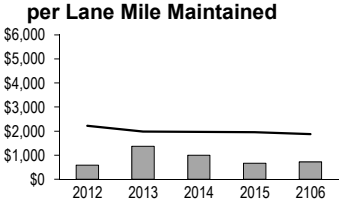
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
High Point	0.03	0.18	0.22	0.20	0.22
Average	0.51	0.48	0.57	0.48	0.55

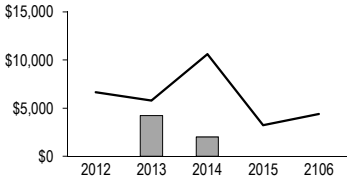
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



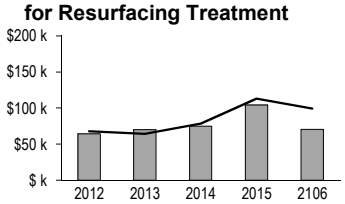
	2012	2013	2014	2015	2106
High Point	$589	$1,375	$1,004	$667	$717
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



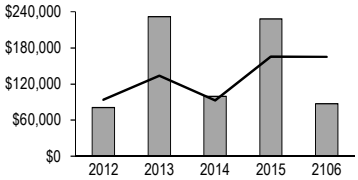
	2012	2013	2014	2015	2106
High Point		$4,243	$2,016		
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



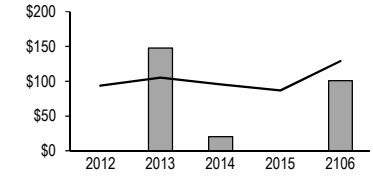
	2012	2013	2014	2015	2106
High Point	$64 k	$70 k	$75 k	$104 k	$70 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
High Point	$81 k	$232 k	$100 k	$228 k	$87 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

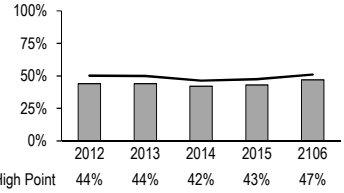
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
High Point		$148	$20		$101
Average	$94	$105	$95	$87	$129

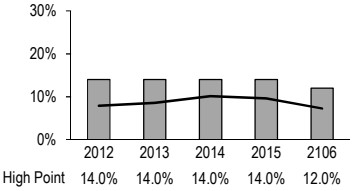
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



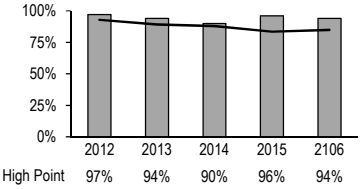
	2012	2013	2014	2015	2106
High Point	44%	44%	42%	43%	47%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
High Point	14.0%	14.0%	14.0%	14.0%	12.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
High Point	97%	94%	90%	96%	94%
Average	93%	89%	88%	84%	85%

Raleigh — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Raleigh's Department of Transportation has the responsibility for street maintenance. During the year the city was responsible for maintaining approximately 2,350 lane miles.

The city used contractors to resurface 36 lane miles (1.5 percent of total lane miles). The contractors used a total of 42,292 tons of asphalt laid to an average depth of 1.5 to 2 inches.

The city reported that 70 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2016. The city used city staff conducting a windshield survey following the Institute for Transportation Research and Education (ITRE) rating system.

The number of potholes reported for the year was 6,831. The percentage of potholes repaired within twenty-four hours was 75 percent. A total of 755 utility cuts were also made, with the city repairing all of these.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	40.00
FTE Positions—Other	8.00
Lane Miles Maintained	2,350.0
Lane Miles Treated	
Preservation	0.0
Resurfacing	36.0
Rehabilitation	0.0
TOTAL	36.0
Total Costs for All Treatment Types	$7,402,461
Potholes Repaired	6,831
Number of Utility Cuts	755
Number of Maintenance Patches (exclusive of potholes and utility cuts)	NA
Average Cost per Ton of Hot Asphalt during Year	$61.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	22.3%
Operating Costs	72.3%
Capital Costs	5.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,241,809
Operating Costs	$10,496,314
Capital Costs	$786,005
TOTAL	$14,524,128

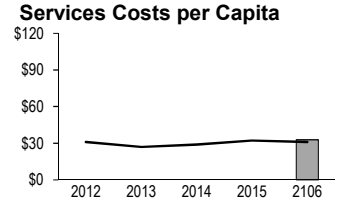
Raleigh

Asphalt Maintenance and Repair

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

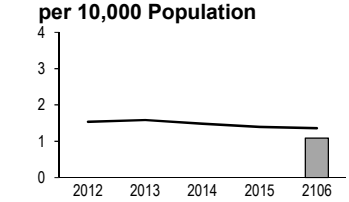
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



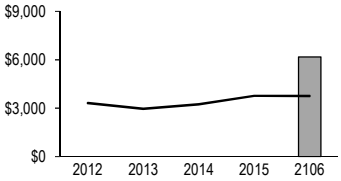
	2012	2013	2014	2015	2106
Raleigh					$32.95
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Raleigh					1.09
Average	1.54	1.58	1.49	1.39	1.36

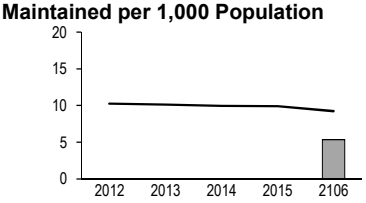
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Raleigh					$6,180
Average	$3,309	$2,960	$3,234	$3,765	$3,764

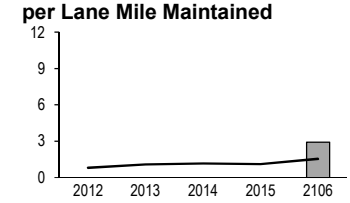
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



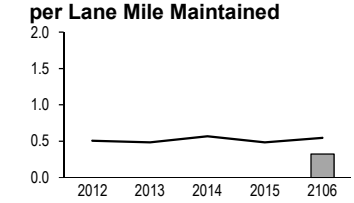
	2012	2013	2014	2015	2106
Raleigh					5.3
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Raleigh					2.91
Average	0.80	1.08	1.17	1.12	1.54

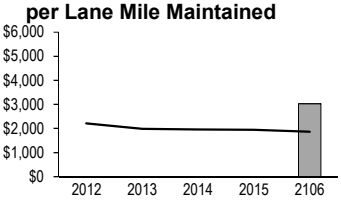
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Raleigh					0.32
Average	0.51	0.48	0.57	0.48	0.55

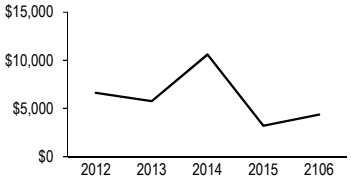
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



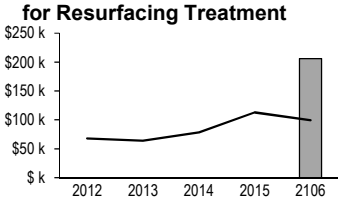
	2012	2013	2014	2015	2106
Raleigh					$3,030
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



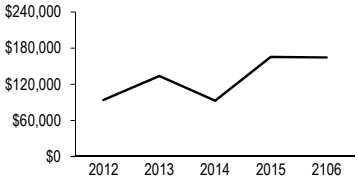
	2012	2013	2014	2015	2106
Raleigh					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



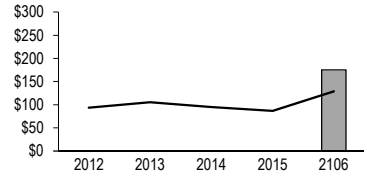
	2012	2013	2014	2015	2106
Raleigh					$206 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Raleigh					
Average	$94 k	$134 k	$93 k	$165 k	$165 k

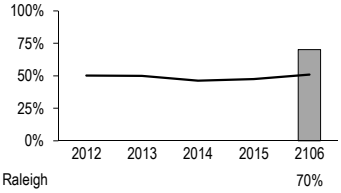
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Raleigh					$175
Average	$94	$105	$95	$87	$129

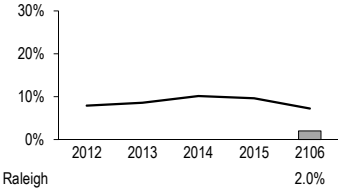
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



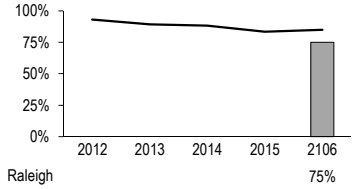
	2012	2013	2014	2015	2106
Raleigh					70%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Raleigh					2.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Raleigh					75%
Average	93%	89%	88%	84%	85%

Salisbury — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Salisbury was responsible for maintaining approximately 345 lane miles during FY 2015–16. The city treated a total of 6.7 lane miles, or 1.9 percent of total lane miles.

The city lane miles that were treated used rehabilitation, which includes resurfacing following milling. This work was done by contractors. The contractors used a total of 3,480 tons of asphalt, and the average resurfacing depth used by the contractors 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 2015–16 was 424. The percentage of potholes repaired within twenty-four hours was 95 percent. A total of 109 utility cuts were also made, with the city repairing all of these. Additionally, 263 maintenance patches were done, which are not included in the pothole or utility cut numbers.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
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	345.2
Lane Miles Treated	
Preservation	0.0
Resurfacing	0.0
Rehabilitation	6.7
TOTAL	6.7
Total Costs for All Treatment Types	$385,765
Potholes Repaired	424
Number of Utility Cuts	109
Number of Maintenance Patches (exclusive of potholes and utility cuts)	263
Average Cost per Ton of Hot Asphalt during Year	$90.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	10.1%
Operating Costs	55.9%
Capital Costs	34.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$116,611
Operating Costs	$646,583
Capital Costs	$394,274
TOTAL	$1,157,468

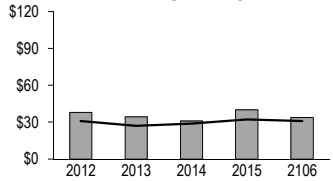
Salisbury

Asphalt Maintenance and Repair

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

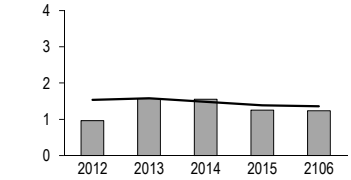
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



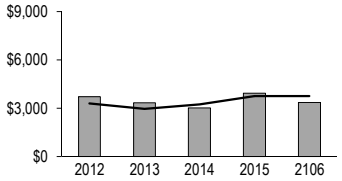
	2012	2013	2014	2015	2106
Salisbury	$37.92	$34.15	$30.98	$40.01	$33.76
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Salisbury	0.96	1.57	1.56	1.25	1.24
Average	1.54	1.58	1.49	1.39	1.36

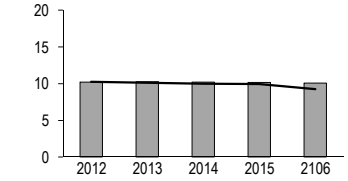
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Salisbury	$3,717	$3,336	$3,031	$3,941	$3,353
Average	$3,309	$2,960	$3,234	$3,765	$3,764

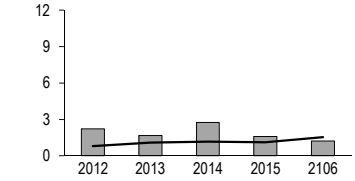
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



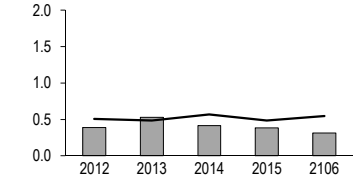
	2012	2013	2014	2015	2106
Salisbury	10.2	10.2	10.2	10.2	10.1
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Salisbury	2.23	1.66	2.75	1.59	1.23
Average	0.80	1.08	1.17	1.12	1.54

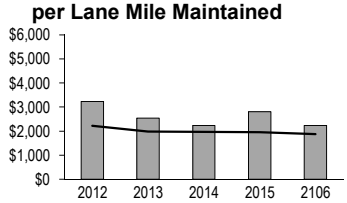
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Salisbury	0.39	0.53	0.41	0.39	0.32
Average	0.51	0.48	0.57	0.48	0.55

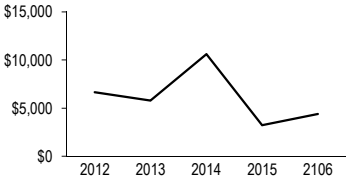
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



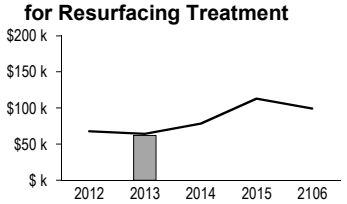
	2012	2013	2014	2015	2106
Salisbury	$3,227	$2,537	$2,242	$2,811	$2,236
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



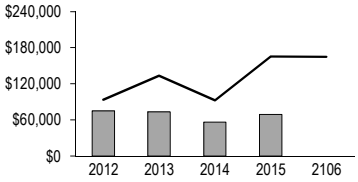
	2012	2013	2014	2015	2106
Salisbury					
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



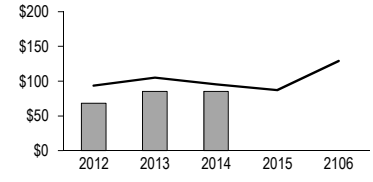
	2012	2013	2014	2015	2106
Salisbury		$62 k			
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Salisbury	$75 k	$73 k	$56 k	$69 k	
Average	$94 k	$134 k	$93 k	$165 k	$165 k

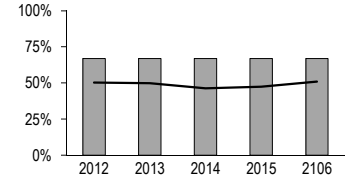
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Salisbury	$68	$85	$85		
Average	$94	$105	$95	$87	$129

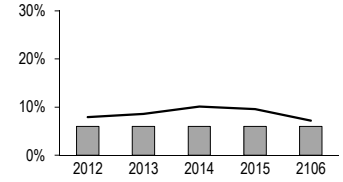
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



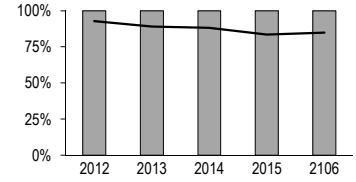
	2012	2013	2014	2015	2106
Salisbury	67%	67%	67%	67%	67%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Salisbury	6.0%	6.0%	6.0%	6.0%	6.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Salisbury	100%	100%	100%	100%	100%
Average	93%	89%	88%	84%	85%

Wilson — Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Wilson was responsible for maintaining approximately 695 lane miles of city streets during FY 2015–16. The city treated a total of 9.6 lane miles during the year, or 1.4 percent of the total lane miles maintained.

Contract crews treated 3.2 lane miles with resurfacing. City crews resurfaced an additional 0.14 lane miles. City crews performed preservation work on 6.3 lane miles. Preservation techniques include methods such as crack sealing or thin overlays.

The city reported that 54 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2014. 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 2015–16 was 1,498. The percentage of potholes repaired within twenty-four hours was 95 percent. Repairs to 384 utility cuts were also made during the year.

Conditions Affecting Service, Performance, and Costs

The cost of asphalt and maintenance materials is directly related to fluctuations in the price of petroleum.

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 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

FTE Positions—Crews	5.00
FTE Positions—Other	0.50
Lane Miles Maintained	695.4
Lane Miles Treated	
Preservation	6.3
Resurfacing	3.3
Rehabilitation	0.0
TOTAL	9.6
Total Costs for All Treatment Types	$327,380
Potholes Repaired	1,498
Number of Utility Cuts	705
Number of Maintenance Patches (exclusive of potholes and utility cuts)	384
Average Cost per Ton of Hot Asphalt during Year	$78.00

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	24.9%
Operating Costs	68.7%
Capital Costs	6.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$349,790
Operating Costs	$964,616
Capital Costs	$89,391
TOTAL	$1,403,797

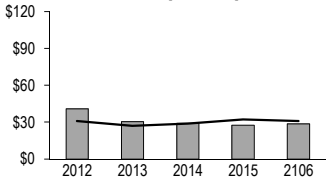
Wilson

Asphalt Maintenance and Repair

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

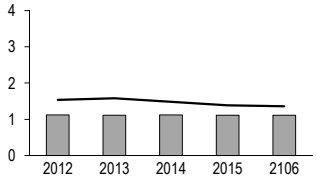
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



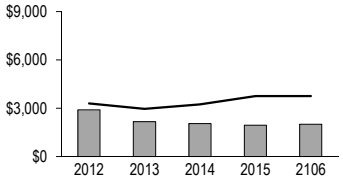
	2012	2013	2014	2015	2106
Wilson	$40.78	$30.25	$28.98	$27.48	$28.44
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Wilson	1.12	1.11	1.12	1.12	1.11
Average	1.54	1.58	1.49	1.39	1.36

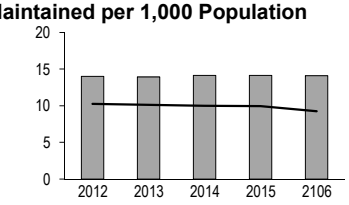
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Wilson	$2,913	$2,171	$2,049	$1,945	$2,019
Average	$3,309	$2,960	$3,234	$3,765	$3,764

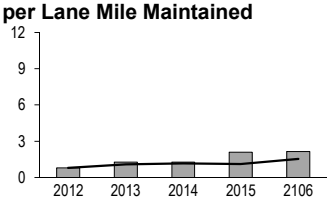
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



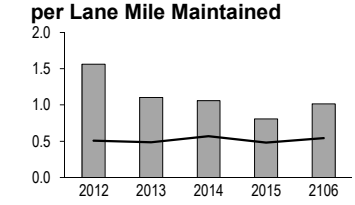
	2012	2013	2014	2015	2106
Wilson	14.0	13.9	14.1	14.1	14.1
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Wilson	0.82	1.29	1.28	2.11	2.15
Average	0.80	1.08	1.17	1.12	1.54

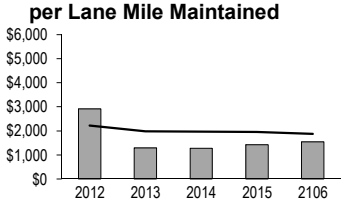
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Wilson	1.56	1.10	1.06	0.81	1.01
Average	0.51	0.48	0.57	0.48	0.55

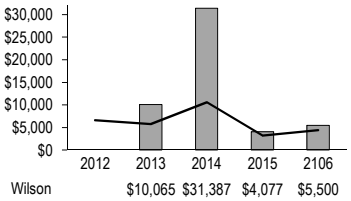
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



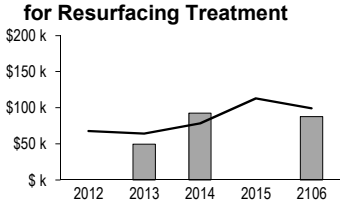
	2012	2013	2014	2015	2106
Wilson	$2,913	$1,296	$1,278	$1,418	$1,548
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



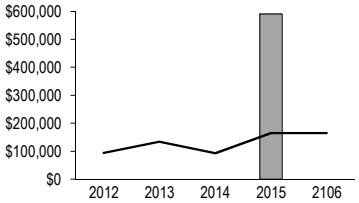
	2012	2013	2014	2015	2106
Wilson		$10,065	$31,387	$4,077	$5,500
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



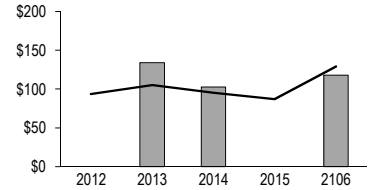
	2012	2013	2014	2015	2106
Wilson		$50 k	$93 k		$88 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Wilson				$590 k	
Average	$94 k	$134 k	$93 k	$165 k	$165 k

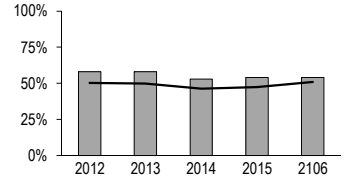
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Wilson		$134	$103		$118
Average	$94	$105	$95	$87	$129

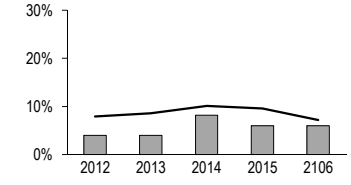
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



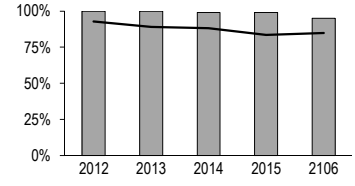
	2012	2013	2014	2015	2106
Wilson	58%	58%	53%	54%	54%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Wilson	4.0%	4.0%	8.2%	6.0%	6.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Wilson	100%	100%	99%	99%	95%
Average	93%	89%	88%	84%	85%

Winston-Salem Asphalt Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Winston-Salem was responsible for maintaining approximately 2,219 lane miles of city streets during FY 2015–16. The city treated 137.9 lane miles or 6.2 percent of the total lane miles.

The city used a variety of treatment methods for repair of roads. A total of about 22.3 lane miles were treated by contract crews with preservation methods such as crack sealing or thin overlays. A further 1.5 lane miles of preservation work was done by city crews. City crews resurfaced about 3.5 lane miles using a total of 1,330 tons of asphalt. Finally, 110.7 lane miles were rehabilitated by contract crews with milling followed by resurfacing. A total of 54,223 tons of asphalt were used by contracted crews for this work.

The city reported that 53 percent of its lane miles rated 85 or above on its most recent pavement condition rating, conducted in 2015. The city used the Pavement Tracking System (PTS).

The city reported 1,218 potholes in FY 2015–16. The percentage of potholes repaired within twenty-four hours was estimated at 47 percent. City policy is to repair potholes within twenty-four hours, but the lower response level is a result of calls on weekends and sick or vacation time of repair crews.

Conditions Affecting Service, Performance, and Costs

The hard winter conditions in FY 2013–14 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.

The City introduced a mobile phone application called "See, Click, Fix" that allowed citizens to report potholes in a more convenient fashion. Along with more experience using the city's customer service line, City Link, there was an increase in reported potholes in FY 2013–14. Additionally the harsher winter was a factor in the number of increased potholes.

Municipal Profile

Population (OSBM 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

FTE Positions—Crews	39.50
FTE Positions—Other	4.00
Lane Miles Maintained	2,218.5
Lane Miles Treated	
Preservation	23.7
Resurfacing	3.5
Rehabilitation	110.7
TOTAL	137.9
Total Costs for All Treatment Types	$8,438,679
Potholes Repaired	1,218
Number of Utility Cuts	227
Number of Maintenance Patches (exclusive of potholes and utility cuts)	84
Average Cost per Ton of Hot Asphalt during Year	$76.00

Full Cost Profile

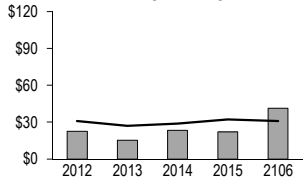
Cost Breakdown by Percentage	
Personal Services	11.9%
Operating Costs	85.4%
Capital Costs	2.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,180,495
Operating Costs	$8,440,971
Capital Costs	$263,124
TOTAL	$9,884,590

Winston-Salem Asphalt Maintenance and Repair

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

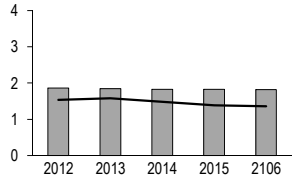
Resource Measures

Asphalt Maintenance and Repair Services Costs per Capita



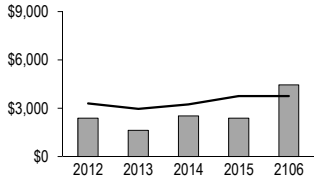
	2012	2013	2014	2015	2106
Winston-Salem	$22.49	$15.31	$23.42	$22.14	$41.38
Average	$30.96	$26.99	$28.78	$32.29	$30.95

Asphalt Maintenance and Repair FTEs per 10,000 Population



	2012	2013	2014	2015	2106
Winston-Salem	1.87	1.84	1.83	1.83	1.82
Average	1.54	1.58	1.49	1.39	1.36

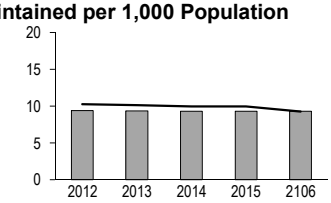
Service Costs per Lane Mile of Road Maintained



	2012	2013	2014	2015	2106
Winston-Salem	$2,394	$1,635	$2,522	$2,385	$4,455
Average	$3,309	$2,960	$3,234	$3,765	$3,764

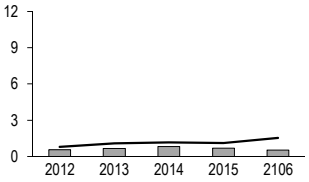
Workload Measures

Number of Lane Miles Maintained per 1,000 Population



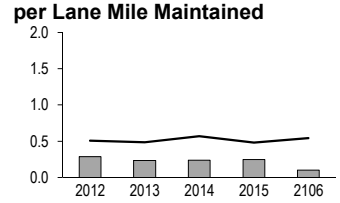
	2012	2013	2014	2015	2106
Winston-Salem	9.4	9.4	9.3	9.3	9.3
Average	10.3	10.1	10.0	9.9	9.2

Reported Potholes per Lane Mile Maintained



	2012	2013	2014	2015	2106
Winston-Salem	0.58	0.68	0.84	0.70	0.55
Average	0.80	1.08	1.17	1.12	1.54

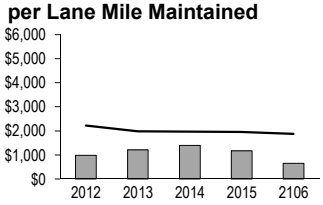
Repaired Utility Cuts per Lane Mile Maintained



	2012	2013	2014	2015	2106
Winston-Salem	0.29	0.24	0.24	0.25	0.10
Average	0.51	0.48	0.57	0.48	0.55

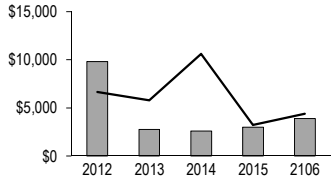
Efficiency Measures

Cost of Maintenance per Lane Mile Maintained



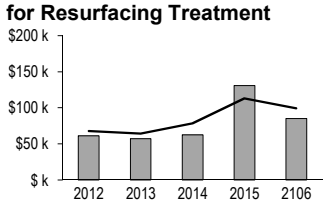
	2012	2013	2014	2015	2106
Winston-Salem	$986	$1,217	$1,404	$1,179	$652
Average	$2,218	$1,986	$1,966	$1,956	$1,870

Cost per Lane Mile for Preservation Treatment



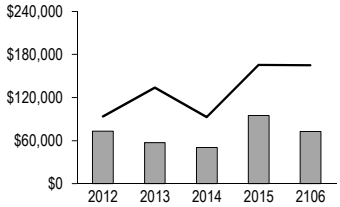
	2012	2013	2014	2015	2106
Winston-Salem	$9,796	$2,759	$2,591	$3,004	$3,895
Average	$6,635	$5,779	$10,605	$3,223	$4,386

Cost per Lane Mile for Resurfacing Treatment



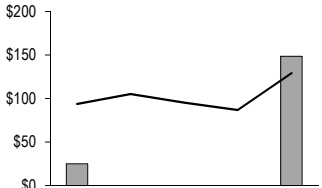
	2012	2013	2014	2015	2106
Winston-Salem	$61 k	$57 k	$62 k	$131 k	$85 k
Average	$68 k	$64 k	$79 k	$113 k	$100 k

Cost per Lane Mile for Rehabilitation Treatment



	2012	2013	2014	2015	2106
Winston-Salem	$73 k	$57 k	$50 k	$95 k	$73 k
Average	$94 k	$134 k	$93 k	$165 k	$165 k

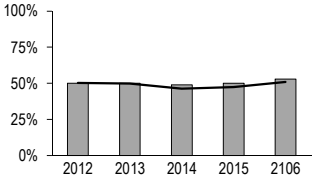
Cost per Ton for Contract Resurfacing



	2012	2013	2014	2015	2106
Winston-Salem	$25				$148
Average	$94	$105	$95	$87	$129

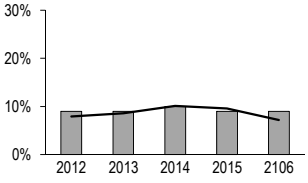
Effectiveness Measures

Percent of Lane Miles Rated 85 or Better



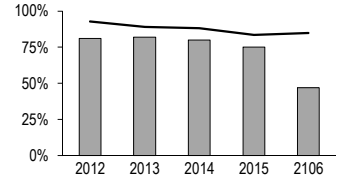
	2012	2013	2014	2015	2106
Winston-Salem	50%	50%	49%	50%	53%
Average	50%	50%	46%	47%	51%

Percent of Lane Miles Rated Below 45



	2012	2013	2014	2015	2106
Winston-Salem	9.0%	9.0%	10.0%	9.0%	9.0%
Average	7.9%	8.6%	10.1%	9.6%	7.2%

Percentage of Potholes Repaired within 24 hours



	2012	2013	2014	2015	2106
Winston-Salem	81%	82%	80%	75%	47%
Average	93%	89%	88%	84%	85%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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	50,412	65.8	$5.9	2,822	706	4	63	3—town 6—outlying
Asheville	95,191	56.5	$11.9	17,636	9,402	12	260	3
Burlington	52,240	30.5	$4.7	8,942	1,780	5	92	3
Cary	160,136	62.7	$24.6	8,671	3,788	9	227	1
Chapel Hill	60,130	22.8	$7.6	4,642	1,781	5	96	2
Charlotte	833,836	313.1	$93.3	117,625	48,916	41 + 1 airport	1,166	1
Concord	90,594	67.5	$10.1	10,616	2,109	10 + 1 airport	200	2
Greensboro	291,686	139.2	$26.4	36,237	9,078	25	590	1
Greenville	88,364	36.4	$6.0	16,308	1,644	6	159	3
Hickory	45,385	42.8	$5.0	6,604	3,792	6 + 1 airport	136	3
High Point	119,304	67.1	$9.9	12,981	1,627	14	234	1
Raleigh	440,621	145.2	$53.6	39,300	23,119	28	606	3 (1 as of August 2016)
Salisbury	34,278	22.2	$2.8	5,416	1,660	5	75	2
Wilson	49,357	30.5	$4.3	4,091	8,034	5	97	2
Winston-Salem	238,899	132.4	$20.4	27,056	8,861	19	353	2

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

Apex Fire Services

Fiscal Year 2015–16

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 forty-nine 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 890 fire maintenance, construction, and reinspections during the fiscal year. 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

Municipal Profile

Service Population	50,412
Land Area (Square Miles)	65.78
Persons per Square Mile	766
Median Family Income U.S. Census 2010	$97,201

Service Profile

FTE Positions—Firefighters	51.0
FTE Positions—Other	11.5
Fire Stations	4
First-Line Fire Apparatus	
Pumpers	3
Aerial Trucks	1
Quints	1
Squads	0
Rescue	1
Other	6
Fire Department Responses	2,822
Responses for Fires	107
Structural Fires Reported	13
Inspections Completed for Maintenance, Construction, and Reinspections	890
Fire Code Violations Reported	706
Estimated Fire Loss (millions)	$0.38
Amount of Property Protected in Service Area (millions)	$5,942
Number of Fire Education Programs or Events	96

Full Cost Profile

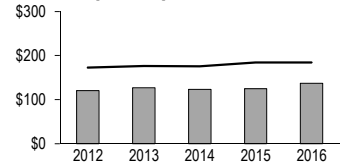
Cost Breakdown by Percentage	
Personal Services	71.0%
Operating Costs	17.4%
Capital Costs	11.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,892,933
Operating Costs	$1,198,240
Capital Costs	$804,235
TOTAL	$6,895,408

Apex — Fire Services

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

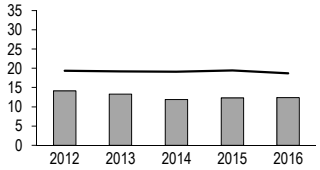
Resource Measures

Fire Services Costs per Capita



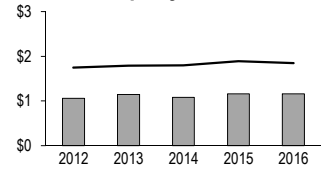
	2012	2013	2014	2015	2016
Apex	$120	$127	$123	$125	$137
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	14.1	13.3	11.9	12.3	12.4
Average	19.3	19.2	19.1	19.4	18.7

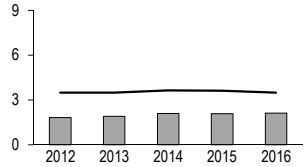
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Apex	$1.06	$1.14	$1.08	$1.16	$1.16
Average	$1.74	$1.79	$1.80	$1.89	$1.85

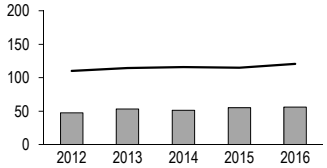
Workload Measures

Actual Fires per 1,000 Population



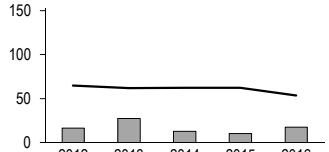
	2012	2013	2014	2015	2016
Apex	1.82	1.89	2.10	2.06	2.12
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Apex	48	53	51	55	56
Average	110	115	116	115	121

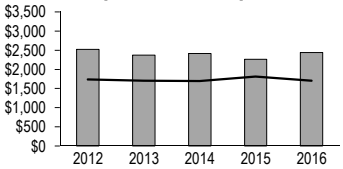
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Apex	17	28	13	10	18
Average	65	62	62	62	54

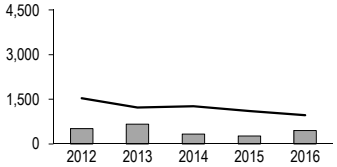
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Apex	$2,527	$2,376	$2,411	$2,262	$2,443
Average	$1,735	$1,707	$1,700	$1,810	$1,703

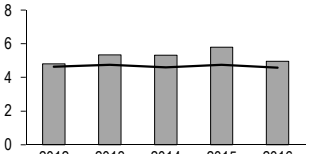
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Apex	516	663	333	265	445
Average	1,529	1,217	1,262	1,106	961

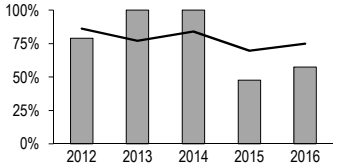
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



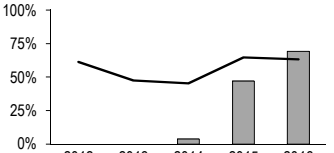
	2012	2013	2014	2015	2016
Apex	4.8	5.3	5.3	5.8	5.0
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



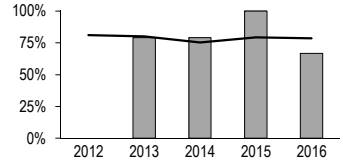
	2012	2013	2014	2015	2016
Apex	79%	100%	100%	48%	57%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



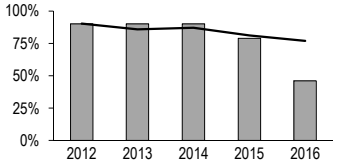
	2012	2013	2014	2015	2016
Apex	0%	0%	4%	47%	69%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



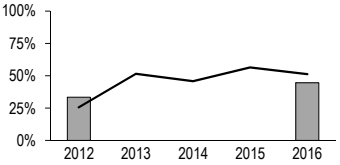
	2012	2013	2014	2015	2016
Apex		79%	79%	100%	67%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Apex	90%	90%	90%	79%	46%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Apex	33.3%				44.4%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The mission of the Asheville Fire Department is to protect the lives, property, and environment of all people within Asheville by preventing the occurrence and minimizing the adverse effects of fires, accidents, and all other emergencies. The department covers an area of 11 square miles outside of Asheville city limits.

The fire department contains the following divisions: emergency response, technical services, and fire marshal'.

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 4,989 fire maintenance, construction, and reinspections during the fiscal year. 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

Municipal Profile

Service Population	95,191
Land Area (Square Miles)	56.52
Persons per Square Mile	1,684
Median Family Income U.S. Census 2010	$53,350

Service Profile

FTE Positions—Firefighters	238.0
FTE Positions—Other	22.0
Fire Stations	12
First-Line Fire Apparatus	
Pumpers	8
Aerial Trucks	3
Quints	2
Squads	1
Rescue	1
Other	37
Fire Department Responses	17,636
Responses for Fires	456
Structural Fires Reported	78
Inspections Completed for Maintenance, Construction, and Reinspections	4,989
Fire Code Violations Reported	9,402
Estimated Fire Loss (millions)	$4.01
Amount of Property Protected in Service Area (millions)	$11,885
Number of Fire Education Programs or Events	297

Full Cost Profile

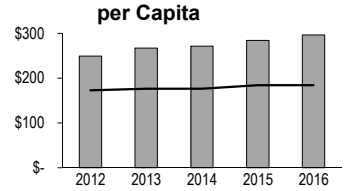
Cost Breakdown by Percentage	
Personal Services	71.9%
Operating Costs	17.3%
Capital Costs	10.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$20,260,103
Operating Costs	$4,868,997
Capital Costs	$3,029,547
TOTAL	$28,158,647

Asheville — Fire Services

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

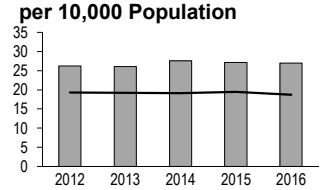
Resource Measures

Fire Services Costs per Capita



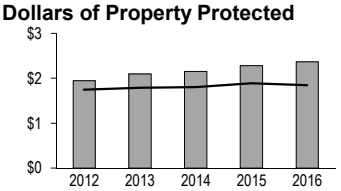
	2012	2013	2014	2015	2016
Asheville	$249.34	$266.76	$271.42	$284	$296
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	26.2	26.1	27.5	27.2	27.0
Average	19.3	19.2	19.1	19.4	18.7

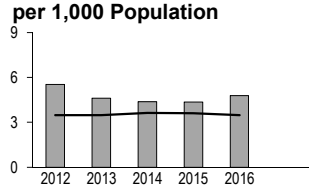
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Asheville	$1.95	$2.10	$2.15	$2.28	$2.37
Average	$1.74	$1.79	$1.80	$1.89	$1.85

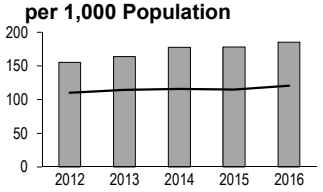
Workload Measures

Actual Fires per 1,000 Population



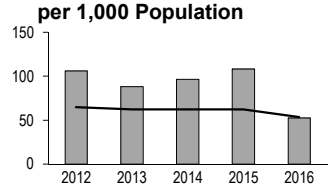
	2012	2013	2014	2015	2016
Asheville	5.52	4.60	4.37	4.37	4.79
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	155	164	178	178	185
Average	110	115	116	115	121

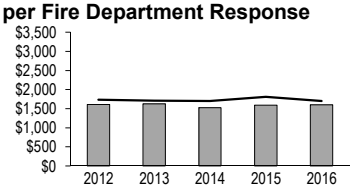
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Asheville	106	88	96	108	52
Average	65	62	62	62	54

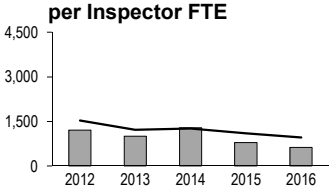
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Asheville	$1,607	$1,629	$1,528	$1,591	$1,597
Average	$1,735	$1,707	$1,700	$1,810	$1,703

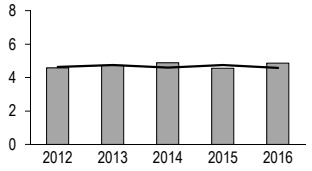
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Asheville	1,208	1,010	1,286	787	624
Average	1,529	1,217	1,262	1,106	961

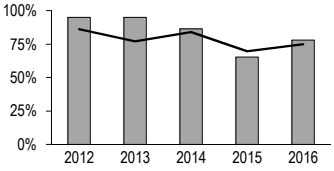
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



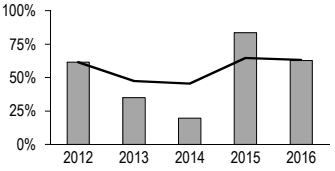
	2012	2013	2014	2015	2016
Asheville	4.6	4.7	4.9	4.6	4.9
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



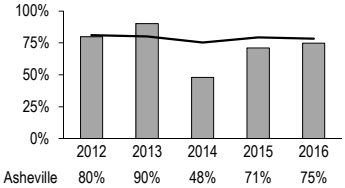
	2012	2013	2014	2015	2016
Asheville	95%	95%	86%	65%	78%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



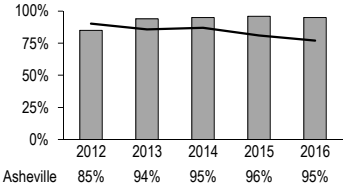
	2012	2013	2014	2015	2016
Asheville	62%	35%	20%	84%	63%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



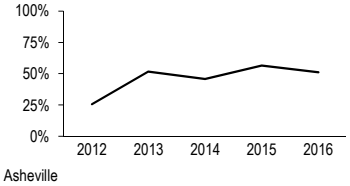
	2012	2013	2014	2015	2016
Asheville	80%	90%	48%	71%	75%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Asheville	85%	94%	95%	96%	95%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Asheville					
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Burlington Fire Services

Fiscal Year 2015–16

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 2,861 fire maintenance, construction, and reinspections during the fiscal year. 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

Service Population	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,712
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	8,942
Responses for Fires	225
Structural Fires Reported	60
Inspections Completed for Maintenance, Construction, and Reinspections	2,861
Fire Code Violations Reported	1,780
Estimated Fire Loss (millions)	$1.73
Amount of Property Protected in Service Area (millions)	$4,683
Number of Fire Education Programs or Events	585

Full Cost Profile

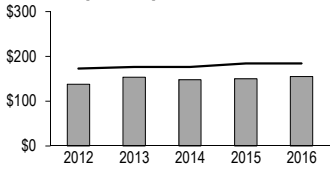
Cost Breakdown by Percentage	
Personal Services	71.7%
Operating Costs	14.4%
Capital Costs	13.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,804,574
Operating Costs	$1,163,994
Capital Costs	$1,123,231
TOTAL	$8,091,799

Burlington Fire Services

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

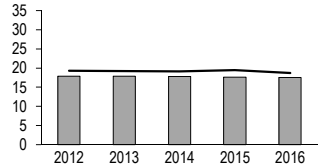
Resource Measures

Fire Services Costs per Capita



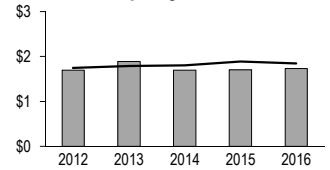
	2012	2013	2014	2015	2016
Burlington	$138	$154	$148	$150	$155
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	17.8	17.9	17.8	17.6	17.5
Average	19.3	19.2	19.1	19.4	18.7

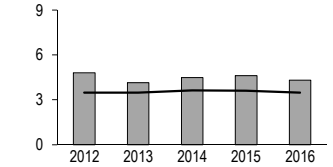
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Burlington	$1.70	$1.89	$1.69	$1.70	$1.73
Average	$1.74	$1.79	$1.80	$1.89	$1.85

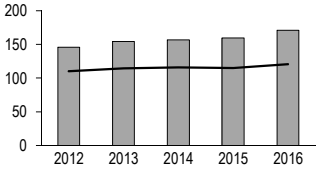
Workload Measures

Actual Fires per 1,000 Population



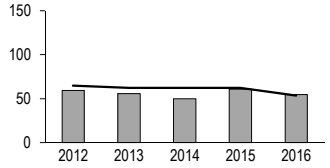
	2012	2013	2014	2015	2016
Burlington	4.80	4.14	4.49	4.62	4.31
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	146	155	157	160	171
Average	110	115	116	115	121

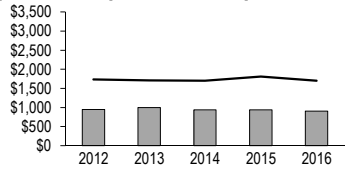
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Burlington	59	56	50	61	55
Average	65	62	62	62	54

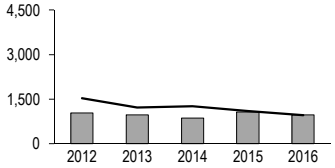
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Burlington	$946	$994	$941	$939	$905
Average	$1,735	$1,707	$1,700	$1,810	$1,703

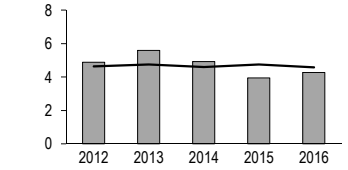
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Burlington	1,033	968	869	1,069	970
Average	1,529	1,217	1,262	1,106	961

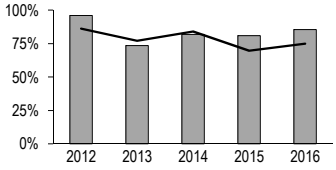
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



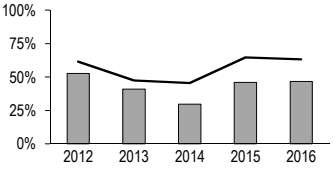
	2012	2013	2014	2015	2016
Burlington	4.9	5.6	4.9	4.0	4.3
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



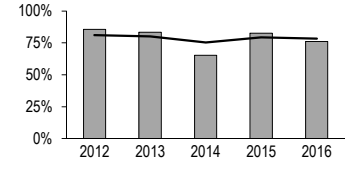
	2012	2013	2014	2015	2016
Burlington	96%	73%	82%	81%	85%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



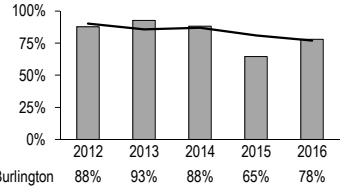
	2012	2013	2014	2015	2016
Burlington	53%	41%	30%	46%	47%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



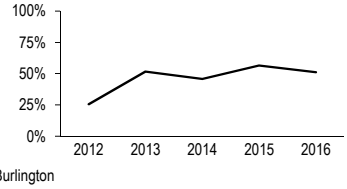
	2012	2013	2014	2015	2016
Burlington	86%	83%	65%	83%	76%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Burlington	88%	93%	88%	65%	78%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Burlington					
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Cary Fire Services

Fiscal Year 2015–16

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. The town provides fire coverage for six square miles outside the town boundaries.

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 1, as rated in 2015. This is the highest rating possible to get. The Cary Fire Department has been accredited since 1999.

The town conducted 4,761 fire maintenance, construction, and reinspections during the fiscal year. 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	160,136
Land Area (Square Miles)	62.67
Persons per Square Mile	2,555
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Positions—Firefighters	213.0
FTE Positions—Other	14.0
Fire Stations	9
First-Line Fire Apparatus	
Pumpers	8
Aerial Trucks	3
Quints	1
Squads	0
Rescue	3
Other	8
Fire Department Responses	8,671
Responses for Fires	259
Structural Fires Reported	45
Inspections Completed for Maintenance, Construction, and Reinspections	4,761
Fire Code Violations Reported	3,788
Estimated Fire Loss (millions)	$2.74
Amount of Property Protected in Service Area (millions)	$24,557
Number of Fire Education Programs or Events	430

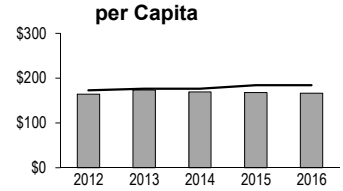
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.3%
Operating Costs	18.9%
Capital Costs	8.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$19,268,054
Operating Costs	$5,041,299
Capital Costs	$2,357,250
TOTAL	$26,666,603

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

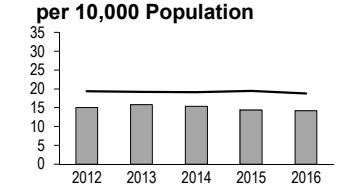
Resource Measures

Fire Services Costs per Capita



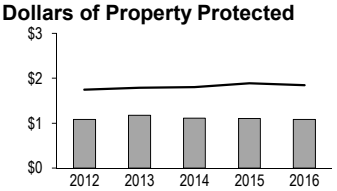
	2012	2013	2014	2015	2016
Cary	$164	$174	$169	$168	$167
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	15.0	15.8	15.4	14.4	14.2
Average	19.3	19.2	19.1	19.4	18.7

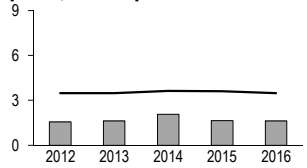
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Cary	$1.08	$1.17	$1.11	$1.10	$1.09
Average	$1.74	$1.79	$1.80	$1.89	$1.85

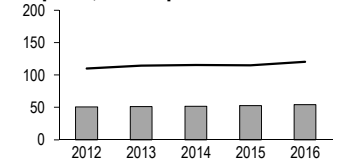
Workload Measures

Actual Fires per 1,000 Population



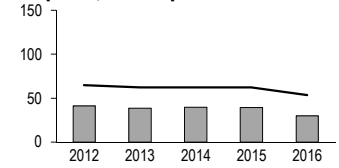
	2012	2013	2014	2015	2016
Cary	1.55	1.62	2.07	1.64	1.62
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Cary	51	51	52	53	54
Average	110	115	116	115	121

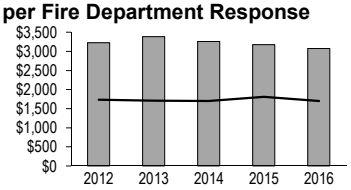
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Cary	41	38	40	39	30
Average	65	62	62	62	54

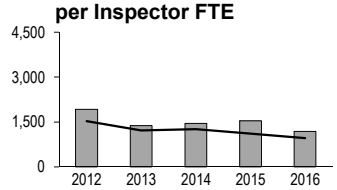
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Cary	$3,226	$3,382	$3,260	$3,170	$3,075
Average	$1,735	$1,707	$1,700	$1,810	$1,703

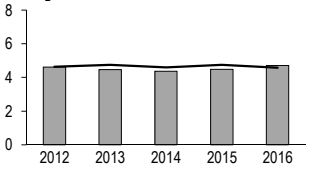
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Cary	1,920	1,382	1,451	1,533	1,190
Average	1,529	1,217	1,262	1,106	961

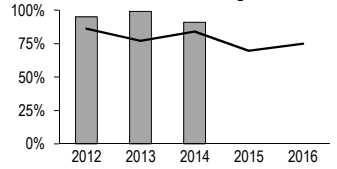
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



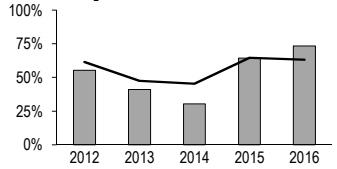
	2012	2013	2014	2015	2016
Cary	4.6	4.5	4.4	4.5	4.7
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



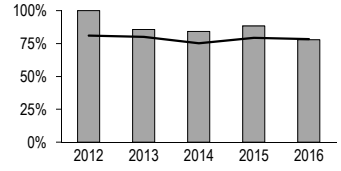
	2012	2013	2014	2015	2016
Cary	95%	99%	91%		
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



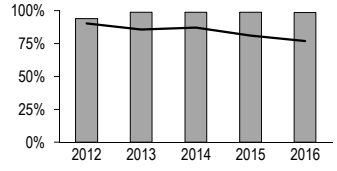
	2012	2013	2014	2015	2016
Cary	55%	41%	30%	64%	73%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



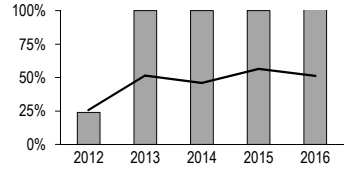
	2012	2013	2014	2015	2016
Cary	100%	86%	84%	88%	78%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Cary	94%	99%	99%	99%	99%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Cary	24.1%	100.0%	100.0%	100.0%	101.2%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Chapel Hill Fire Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill's Fire Department mission is to minimize the risk of fire and other hazards to the life and property of the citizens of Chapel Hill. To accomplish this mission, the department provides response to and mitigation of fires, medical emergencies, hazardous materials incidents, and other emergencies as they arise.

The fire department is organized into three divisions: operations, administration, and life safety. Operations and life safety are administered by a deputy chief with support staff. Administration consists of the fire chief and support staff.

The fire department works a 3/4 system where personnel are on duty for 24 hours starting at 7a.m. The town has five community stations with six primary vehicles for response.

The town has an ISO rating of 2 received in 2016, which was an upgrade from the year before.

The fire department conducted 2,458 fire maintenance, construction, and reinspections during the fiscal year. Fire inspections are performed by fire inspectors and are designed to be completed in accordance with the State of North Carolina's inspection schedule. Initial inspections may generate findings for reinspection. The Town of Chapel Hill has implemented a tablet based fire inspection system to more efficiently manage the inspection process as well as initiate the fire inspection fee schedule and billing system. The department counts malls as one inspection per occupancy and one per building structure. High rises have one inspection per building plus one per commercial occupancy. Multi-structure apartment complexes have just one inspection per complex.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Municipal Profile

Service Population	60,130
Land Area (Square Miles)	22.77
Persons per Square Mile	2,641
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Firefighters	79.0
FTE Positions—Other	17.0
Fire Stations	5
First-Line Fire Apparatus	
Pumpers	4
Aerial Trucks	1
Quints	1
Squads	0
Rescue	1
Other	0
Fire Department Responses	4,642
Responses for Fires	140
Structural Fires Reported	22
Inspections Completed for Maintenance, Construction, and Reinspections	2,458
Fire Code Violations Reported	1,781
Estimated Fire Loss (millions)	$1.15
Amount of Property Protected in Service Area (millions)	$7,586
Number of Fire Education Programs or Events	285

Full Cost Profile

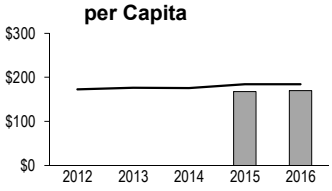
Cost Breakdown by Percentage	
Personal Services	69.4%
Operating Costs	20.0%
Capital Costs	10.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,096,456
Operating Costs	$2,047,543
Capital Costs	$1,082,071
TOTAL	$10,226,070

Chapel Hill — Fire Services

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

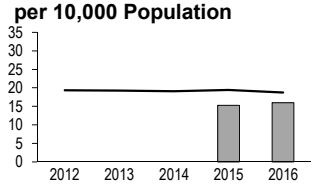
Resource Measures

Fire Services Costs per Capita



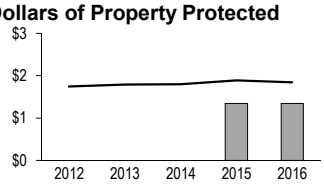
	2012	2013	2014	2015	2016
Chapel Hill				$167	$170
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				15.3	16.0
Average	19.3	19.2	19.1	19.4	18.7

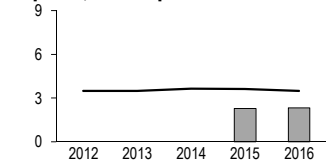
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Chapel Hill				$1.35	$1.35
Average	$1.74	$1.79	$1.80	$1.89	$1.85

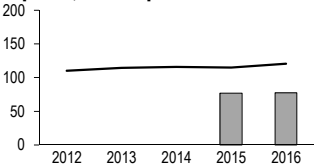
Workload Measures

Actual Fires per 1,000 Population



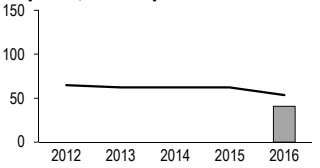
	2012	2013	2014	2015	2016
Chapel Hill				2.27	2.33
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				77	77
Average	110	115	116	115	121

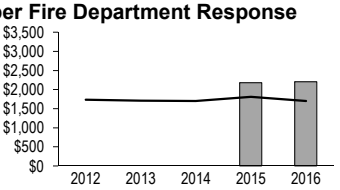
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Chapel Hill					41
Average	65	62	62	62	54

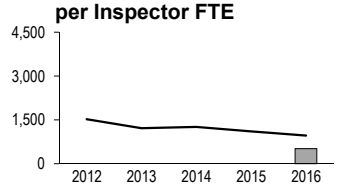
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Chapel Hill				$2,176	$2,203
Average	$1,735	$1,707	$1,700	$1,810	$1,703

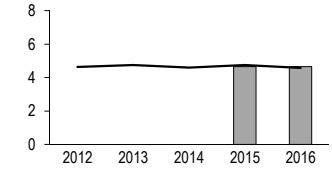
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Chapel Hill					517
Average	1,529	1,217	1,262	1,106	961

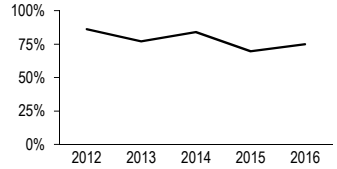
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



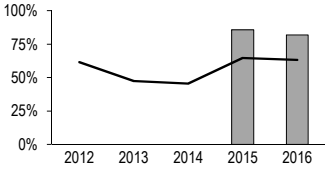
	2012	2013	2014	2015	2016
Chapel Hill				4.7	4.7
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



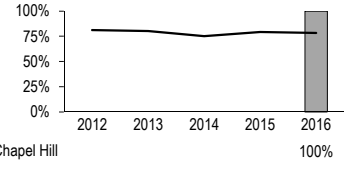
	2012	2013	2014	2015	2016
Chapel Hill					
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



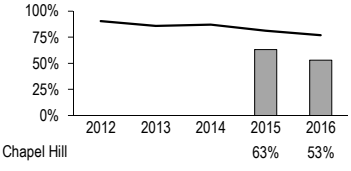
	2012	2013	2014	2015	2016
Chapel Hill				86%	82%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



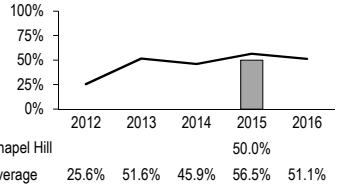
	2012	2013	2014	2015	2016
Chapel Hill					100%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Chapel Hill				63%	53%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Chapel Hill				50.0%	
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Charlotte — Fire Services

Fiscal Year 2015–16

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 1, the highest level possible. The Charlotte Fire Department has been accredited since 2000.

The fire department conducted 38,373 fire maintenance, construction, and reinspections during the fiscal year. 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 did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

Charlotte staffs a fire station at the airport in addition to forty-one community fire stations.

Municipal Profile

Service Population	833,836
Land Area (Square Miles)	313.14
Persons per Square Mile	2,663
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Positions—Firefighters	1,034.0
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	117,625
Responses for Fires	2,248
Structural Fires Reported	632
Inspections Completed for Maintenance, Construction, and Reinspections	38,373
Fire Code Violations Reported	48,916
Estimated Fire Loss (millions)	$7.25
Amount of Property Protected in Service Area (millions)	$93,264
Number of Fire Education Programs or Events	1,310

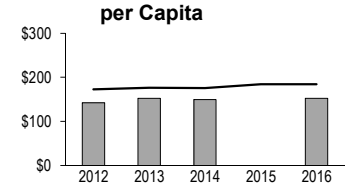
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	66.5%
Operating Costs	21.7%
Capital Costs	11.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$12,697,096
Operating Costs	$4,141,043
Capital Costs	$2,241,976
TOTAL	$19,080,115

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

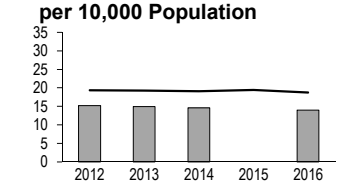
Resource Measures

Fire Services Costs per Capita



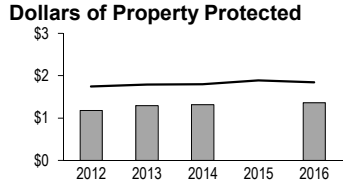
	2012	2013	2014	2015	2016
Charlotte	$142	$152	$149		$152
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	15.2	15.0	14.6		14.0
Average	19.3	19.2	19.1	19.4	18.7

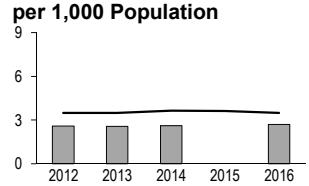
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Charlotte	$1.18	$1.29	$1.31		$1.36
Average	$1.74	$1.79	$1.80	$1.89	$1.85

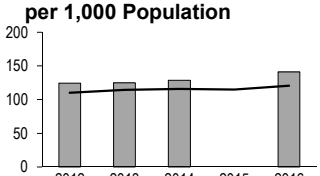
Workload Measures

Actual Fires per 1,000 Population



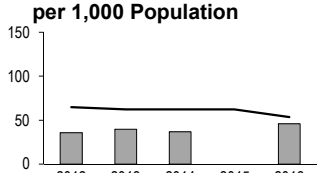
	2012	2013	2014	2015	2016
Charlotte	2.58	2.57	2.60		2.70
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte	125	125	129		141
Average	110	115	116	115	121

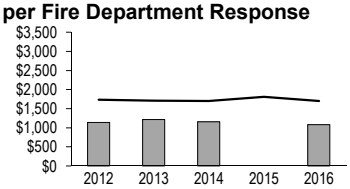
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Charlotte	35	40	37		46
Average	65	62	62	62	54

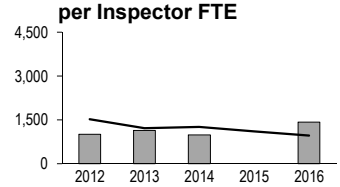
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Charlotte	$1,139	$1,219	$1,161		$1,078
Average	$1,735	$1,707	$1,700	$1,810	$1,703

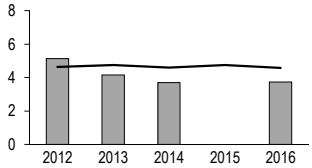
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Charlotte	1,007	1,146	984		1,421
Average	1,529	1,217	1,262	1,106	961

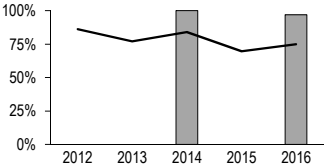
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



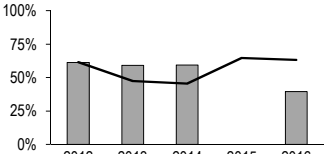
	2012	2013	2014	2015	2016
Charlotte	5.1	4.2	3.7		3.7
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



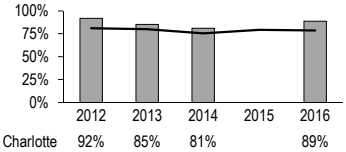
	2012	2013	2014	2015	2016
Charlotte			100%		97%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



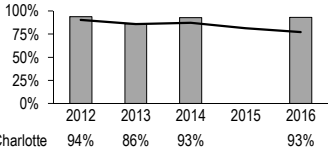
	2012	2013	2014	2015	2016
Charlotte	61%	59%	59%		39%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



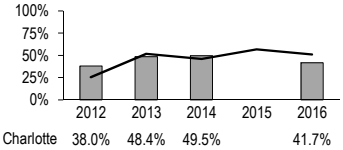
	2012	2013	2014	2015	2016
Charlotte	92%	85%	81%		89%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Charlotte	94%	86%	93%		93%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Charlotte	38.0%	48.4%	49.5%		41.7%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Concord Fire Services

Fiscal Year 2015–16

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 8,138 fire maintenance, construction, and reinspections during the fiscal year. 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 ten community fire stations.

Municipal Profile

Service Population	90,594
Land Area (Square Miles)	67.54
Persons per Square Mile	1,341
Median Family Income U.S. Census 2010	$63,643

Service Profile

FTE Positions—Firefighters	180.0
FTE Positions—Other	20.0
Fire Stations	11
First-Line Fire Apparatus	
Pumpers	9
Aerial Trucks	3
Quints	0
Squads	0
Rescue	1
Other	11
Fire Department Responses	10,616
Responses for Fires	261
Structural Fires Reported	43
Inspections Completed for Maintenance, Construction, and Reinspections	8,138
Fire Code Violations Reported	2,109
Estimated Fire Loss (millions)	$2.44
Amount of Property Protected in Service Area (millions)	$10,092
Number of Fire Education Programs or Events	384

Full Cost Profile

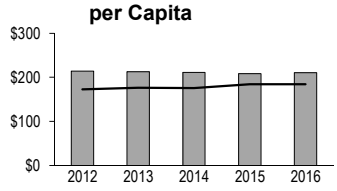
Cost Breakdown by Percentage	
Personal Services	66.5%
Operating Costs	21.7%
Capital Costs	11.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$12,697,096
Operating Costs	$4,141,043
Capital Costs	$2,241,976
TOTAL	$19,080,115

Concord — Fire Services

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

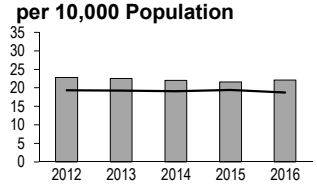
Resource Measures

Fire Services Costs per Capita



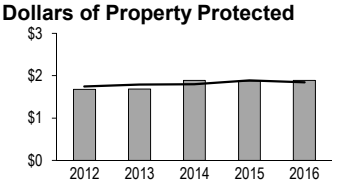
	2012	2013	2014	2015	2016
Concord	$214	$213	$211	$209	$211
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	22.8	22.5	22.1	21.6	22.1
Average	19.3	19.2	19.1	19.4	18.7

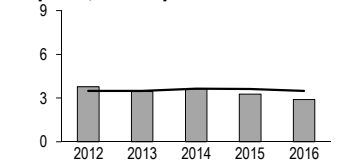
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Concord	$1.68	$1.69	$1.89	$1.88	$1.89
Average	$1.74	$1.79	$1.80	$1.89	$1.85

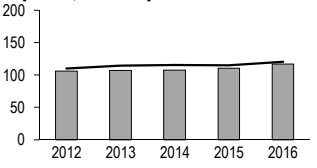
Workload Measures

Actual Fires per 1,000 Population



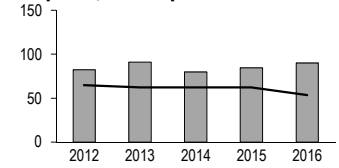
	2012	2013	2014	2015	2016
Concord	3.77	3.45	3.62	3.27	2.88
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Concord	106	107	107	111	117
Average	110	115	116	115	121

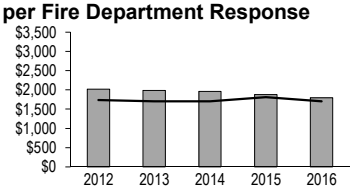
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Concord	82	91	80	84	90
Average	65	62	62	62	54

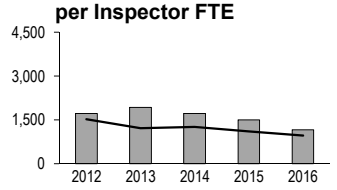
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Concord	$2,023	$1,984	$1,963	$1,883	$1,797
Average	$1,735	$1,707	$1,700	$1,810	$1,703

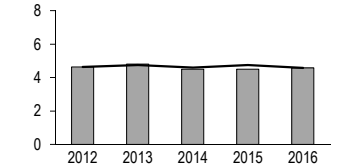
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Concord	1,717	1,926	1,727	1,500	1,163
Average	1,529	1,217	1,262	1,106	961

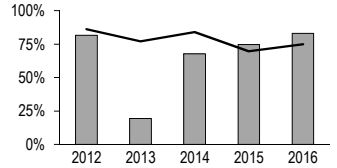
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



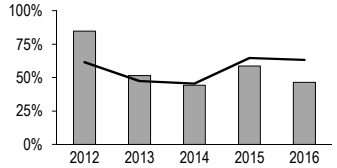
	2012	2013	2014	2015	2016
Concord	4.6	4.8	4.5	4.5	4.6
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



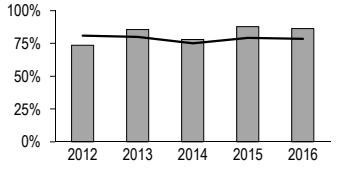
	2012	2013	2014	2015	2016
Concord	82%	20%	68%	75%	83%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



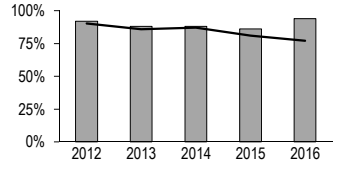
	2012	2013	2014	2015	2016
Concord	85%	52%	44%	59%	47%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



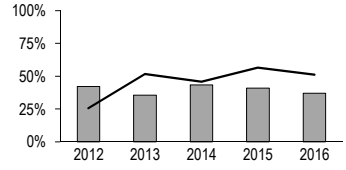
	2012	2013	2014	2015	2016
Concord	74%	86%	78%	88%	86%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Concord	92%	88%	88%	86%	94%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Concord	42.1%	35.6%	43.3%	40.9%	37.0%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Greensboro Fire Services

Fiscal Year 2015–16

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, as rated in 2012. The Greensboro Fire Department has been accredited since 1997.

The fire department in Greensboro conducted 9,981 fire maintenance, construction, and reinspections during the fiscal year. 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	291,686
Land Area (Square Miles)	139.22
Persons per Square Mile	2,095
Median Family Income U.S. Census 2010	$52,752

Service Profile

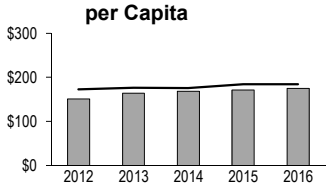
FTE Positions—Firefighters	533.0
FTE Positions—Other	57.0
Fire Stations	25
First-Line Fire Apparatus	
Pumpers	24
Aerial Trucks	0
Quints	11
Squads	0
Rescue	1
Other	0
Fire Department Responses	36,237
Responses for Fires	1,044
Structural Fires Reported	243
Inspections Completed for Maintenance, Construction, and Reinspections	9,981
Fire Code Violations Reported	9,078
Estimated Fire Loss (millions)	$5.25
Amount of Property Protected in Service Area (millions)	$26,416
Number of Fire Education Programs or Events	620

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	79.3%
Operating Costs	20.7%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$40,423,589
Operating Costs	$10,522,880
Capital Costs	$0
TOTAL	$50,946,469

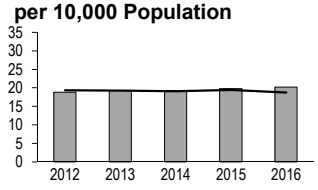
Resource Measures

Fire Services Costs per Capita



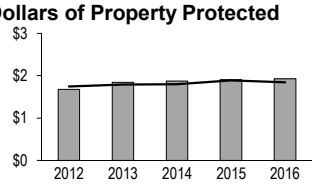
	2012	2013	2014	2015	2016
Greensboro	$151	$164	$168	$171	$175
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	18.8	19.3	19.2	19.8	20.2
Average	19.3	19.2	19.1	19.4	18.7

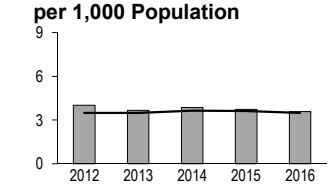
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Greensboro	$1.68	$1.85	$1.87	$1.90	$1.93
Average	$1.74	$1.79	$1.80	$1.89	$1.85

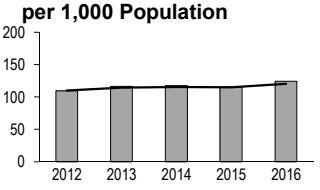
Workload Measures

Actual Fires per 1,000 Population



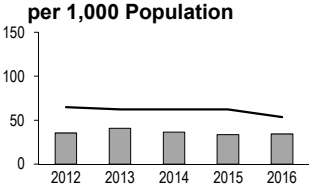
	2012	2013	2014	2015	2016
Greensboro	4.02	3.66	3.87	3.73	3.58
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	110	116	118	115	124
Average	110	115	116	115	121

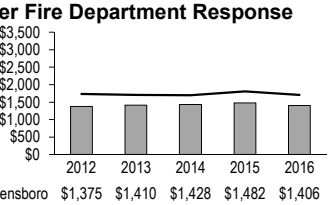
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Greensboro	35	41	37	34	34
Average	65	62	62	62	54

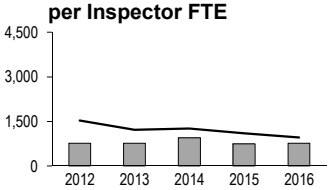
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Greensboro	$1,375	$1,410	$1,428	$1,482	$1,406
Average	$1,735	$1,707	$1,700	$1,810	$1,703

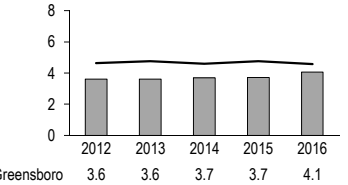
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Greensboro	764	767	954	747	768
Average	1,529	1,217	1,262	1,106	961

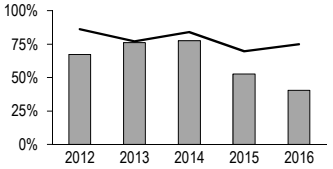
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



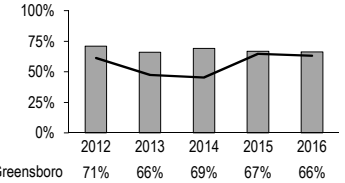
	2012	2013	2014	2015	2016
Greensboro	3.6	3.6	3.7	3.7	4.1
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



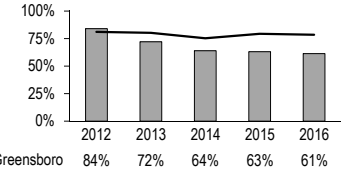
	2012	2013	2014	2015	2016
Greensboro	67%	76%	78%	53%	40%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



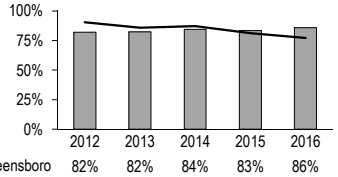
	2012	2013	2014	2015	2016
Greensboro	71%	66%	69%	67%	66%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



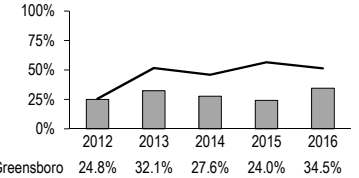
	2012	2013	2014	2015	2016
Greensboro	84%	72%	64%	63%	61%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Greensboro	82%	82%	84%	83%	86%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Greensboro	24.8%	32.1%	27.6%	24.0%	34.5%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Greenville — Fire Services

Fiscal Year 2015–16

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. The city provides fire services in areas beyond the city boundaries covering thirty-two square miles.

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 2015.

The fire department in Greenville conducted 1,442 fire maintenance, construction, and reinspections during the fiscal year. The Life Safety Services Division handles all inspection-related matters following the International Fire Code.

Conditions Affecting Service, Performance, and Costs

Greenville is the only city in the benchmarking project that has emergency medical services transports (EMS) provided through the city fire department. In the other jurisdictions, EMS transports 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 previous fiscal years.

Municipal Profile

Service Population	88,364
Land Area (Square Miles)	36.40
Persons per Square Mile	2,428
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	1
Rescue	1
Other	0
Fire Department Responses	16,308
Responses for Fires	275
Structural Fires Reported	69
Inspections Completed for Maintenance, Construction, and Reinspections	1,442
Fire Code Violations Reported	1,644
Estimated Fire Loss (millions)	$1.36
Amount of Property Protected in Service Area (millions)	$6,038
Number of Fire Education Programs or Events	150

Full Cost Profile

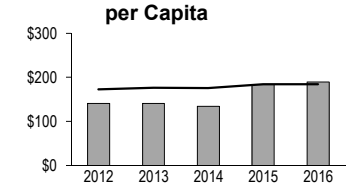
Cost Breakdown by Percentage	
Personal Services	70.8%
Operating Costs	23.5%
Capital Costs	5.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$11,864,625
Operating Costs	$3,945,012
Capital Costs	$946,630
TOTAL	$16,756,267

Greenville — Fire Services

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

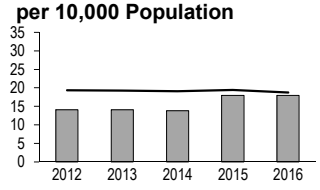
Resource Measures

Fire Services Costs per Capita



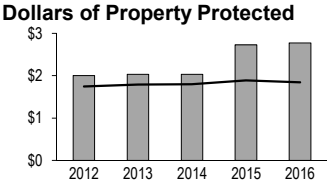
	2012	2013	2014	2015	2016
Greenville	$141	$141	$134	$184	$190
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	14.1	14.1	13.8	18.0	18.0
Average	19.3	19.2	19.1	19.4	18.7

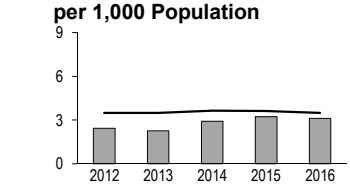
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Greenville	$2.01	$2.03	$2.03	$2.73	$2.77
Average	$1.74	$1.79	$1.80	$1.89	$1.85

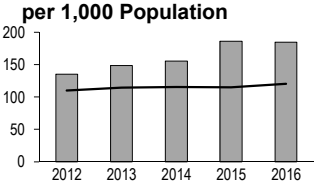
Workload Measures

Actual Fires per 1,000 Population



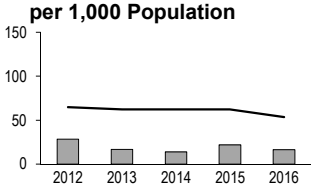
	2012	2013	2014	2015	2016
Greenville	2.42	2.26	2.91	3.22	3.11
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	135	148	156	186	185
Average	110	115	116	115	121

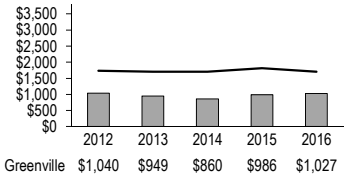
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Greenville	28	17	14	22	16
Average	65	62	62	62	54

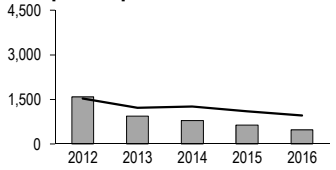
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Greenville	$1,040	$949	$860	$986	$1,027
Average	$1,735	$1,707	$1,700	$1,810	$1,703

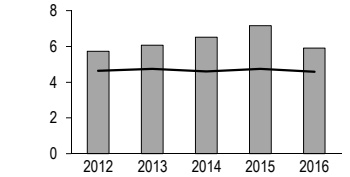
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Greenville	1,585	941	790	641	481
Average	1,529	1,217	1,262	1,106	961

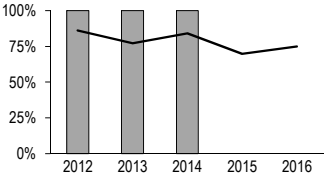
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



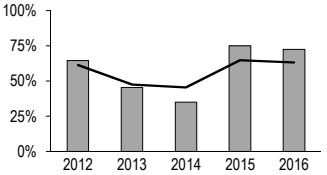
	2012	2013	2014	2015	2016
Greenville	5.7	6.1	6.5	7.2	5.9
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



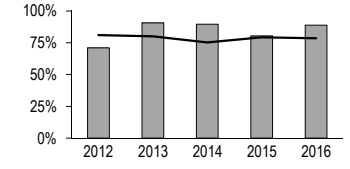
	2012	2013	2014	2015	2016
Greenville	100%	100%	100%		
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



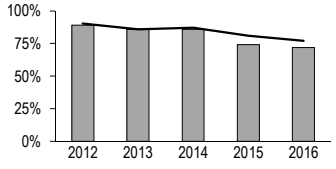
	2012	2013	2014	2015	2016
Greenville	65%	45%	35%	75%	72%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



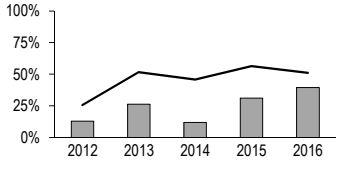
	2012	2013	2014	2015	2016
Greenville	71%	91%	89%	80%	89%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Greenville	89%	86%	86%	74%	72%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Greenville	13.0%	26.4%	12.0%	31.3%	39.4%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Hickory Fire Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The goal of Hickory Fire Department is to provide high quality emergency services, education, and prevention that protect the community through professional coworkers focused on customer service, compassion, commitment, and innovation. The city provides fire coverage for an area of 13 square miles beyond city boundaries.

The fire department contains the following divisions: administration, fire and life safety, 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 5,333 fire maintenance, construction, and reinspections during the fiscal year. 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	45,385
Land Area (Square Miles)	42.76
Persons per Square Mile	1,061
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	6
Aerial Trucks	2
Quints	0
Squads	0
Rescue	1
Other	3
Fire Department Responses	6,604
Responses for Fires	245
Structural Fires Reported	44
Inspections Completed for Maintenance, Construction, and Reinspections	5,333
Fire Code Violations Reported	3,792
Estimated Fire Loss (millions)	$1.20
Amount of Property Protected in Service Area (millions)	$5,001
Number of Fire Education Programs or Events	439

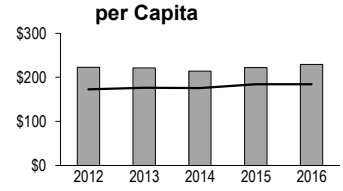
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	78.2%
Operating Costs	18.4%
Capital Costs	3.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,129,426
Operating Costs	$1,911,023
Capital Costs	$361,501
TOTAL	$10,401,950

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

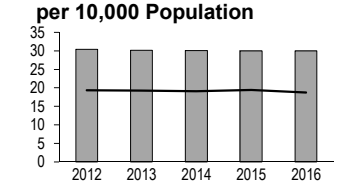
Resource Measures

Fire Services Costs per Capita



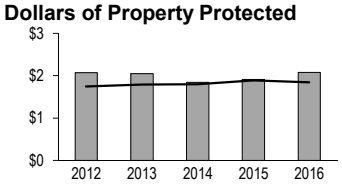
	2012	2013	2014	2015	2016
Hickory	$223	$221	$214	$222	$229
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	30.4	30.2	30.1	30.0	30.0
Average	19.3	19.2	19.1	19.4	18.7

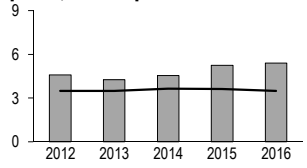
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Hickory	$2.07	$2.05	$1.84	$1.92	$2.08
Average	$1.74	$1.79	$1.80	$1.89	$1.85

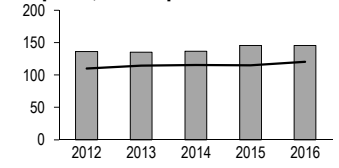
Workload Measures

Actual Fires per 1,000 Population



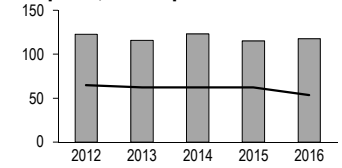
	2012	2013	2014	2015	2016
Hickory	4.59	4.26	4.53	5.25	5.40
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	136	135	137	145	146
Average	110	115	116	115	121

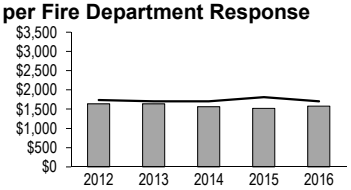
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Hickory	123	116	123	115	118
Average	65	62	62	62	54

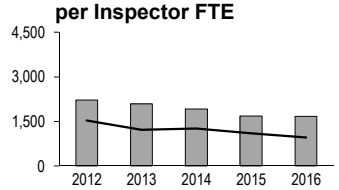
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Hickory	$1,635	$1,637	$1,565	$1,524	$1,575
Average	$1,735	$1,707	$1,700	$1,810	$1,703

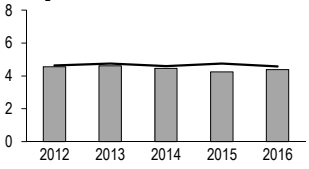
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Hickory	2,215	2,086	1,918	1,686	1,667
Average	1,529	1,217	1,262	1,106	961

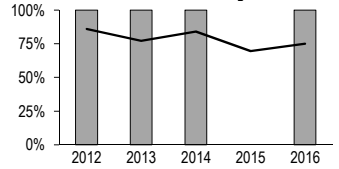
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



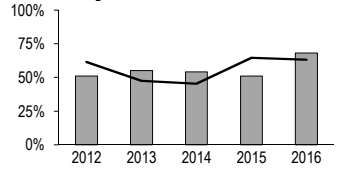
	2012	2013	2014	2015	2016
Hickory	4.6	4.6	4.5	4.3	4.4
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



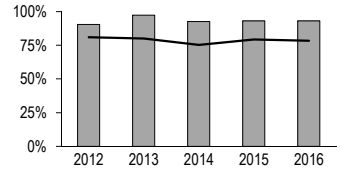
	2012	2013	2014	2015	2016
Hickory	100%	100%	100%		100%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



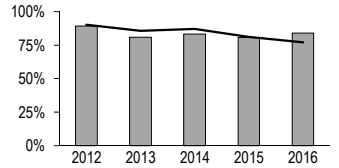
	2012	2013	2014	2015	2016
Hickory	51%	55%	54%	51%	68%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



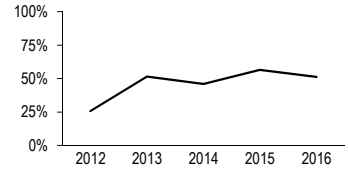
	2012	2013	2014	2015	2016
Hickory	91%	97%	93%	93%	93%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Hickory	89%	81%	83%	81%	84%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Hickory					
Average	25.6%	51.6%	45.9%	56.5%	51.1%

High Point Fire Services

Fiscal Year 2015–16

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 three rotating shifts. A shift cycle alternates three twenty-four-hour shifts on duty with one twenty-four- hour break between each scheduled shift day. This is then followed by a four-day break. This averages to a fifty-six-hour work week over a twenty-seven-day period.

The city has an ISO rating of 1, as rated in 2015. This is the highest rating possible. The High Point Fire Department became accredited in 2016.

The fire department in High Point conducted 7,226 fire maintenance, construction, and reinspections during the fiscal year. 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	119,304
Land Area (Square Miles)	67.05
Persons per Square Mile	1,779
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Positions—Firefighters	210.0
FTE Positions—Other	24.0
Fire Stations	14
First-Line Fire Apparatus	
Pumpers	14
Aerial Trucks	4
Quints	0
Squads	0
Rescue	1
Other	10
Fire Department Responses	12,981
Responses for Fires	530
Structural Fires Reported	140
Inspections Completed for Maintenance, Construction, and Reinspections	7,226
Fire Code Violations Reported	1,627
Estimated Fire Loss (millions)	$1.94
Amount of Property Protected in Service Area (millions)	$9,904
Number of Fire Education Programs or Events	258

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.5%
Operating Costs	17.9%
Capital Costs	11.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$16,860,028
Operating Costs	$4,291,747
Capital Costs	$2,759,631
TOTAL	$23,911,406

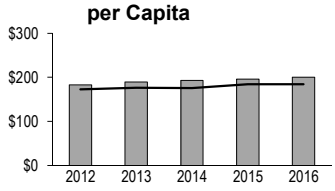
High Point

Fire Services

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

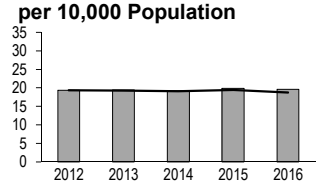
Resource Measures

Fire Services Costs per Capita



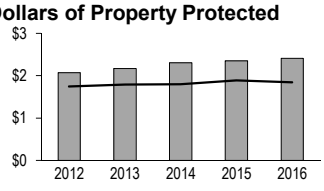
	2012	2013	2014	2015	2016
High Point	$182	$190	$193	$196	$200
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	19.3	19.5	19.1	19.8	19.6
Average	19.3	19.2	19.1	19.4	18.7

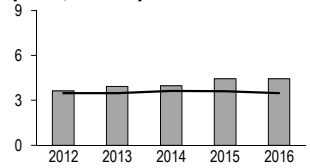
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
High Point	$2.07	$2.17	$2.30	$2.35	$2.41
Average	$1.74	$1.79	$1.80	$1.89	$1.85

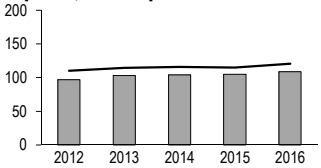
Workload Measures

Actual Fires per 1,000 Population



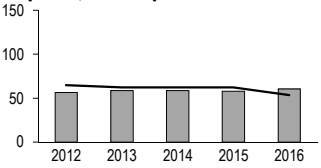
	2012	2013	2014	2015	2016
High Point	3.62	3.93	3.96	4.43	4.44
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
High Point	97	103	104	105	109
Average	110	115	116	115	121

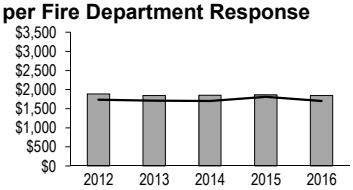
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
High Point	57	58	59	58	61
Average	65	62	62	62	54

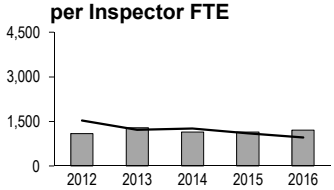
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
High Point	$1,884	$1,840	$1,852	$1,861	$1,842
Average	$1,735	$1,707	$1,700	$1,810	$1,703

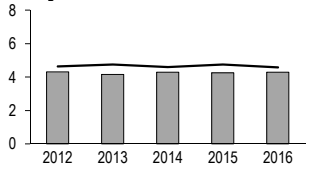
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
High Point	1,087	1,288	1,141	1,142	1,204
Average	1,529	1,217	1,262	1,106	961

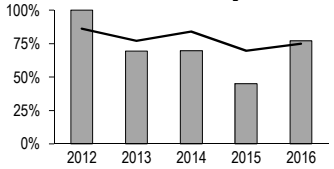
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



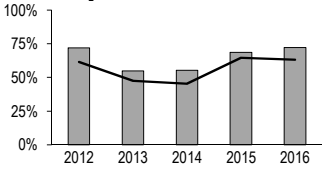
	2012	2013	2014	2015	2016
High Point	4.3	4.2	4.3	4.3	4.3
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



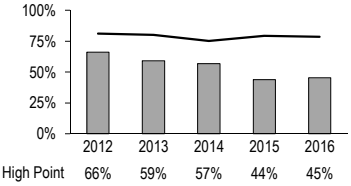
	2012	2013	2014	2015	2016
High Point	100%	69%	70%	45%	77%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



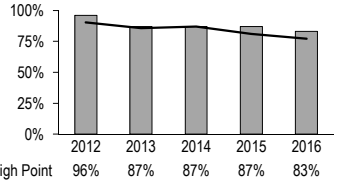
	2012	2013	2014	2015	2016
High Point	72%	55%	55%	69%	72%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



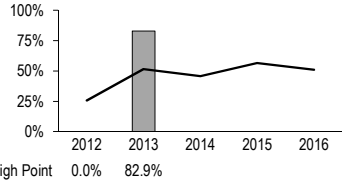
	2012	2013	2014	2015	2016
High Point	66%	59%	57%	44%	45%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
High Point	96%	87%	87%	87%	83%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
High Point	0.0%	82.9%			
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Raleigh Fire Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Raleigh Fire Department provides the following services in carrying out its mission: fire protection, emergency medical first response, extrication, confined space and high angle rescue, hazardous materials response, fire inspections, and fire education.

The fire department is broken into five primary function areas. the Office of the Fire Chief provides administrative services and oversight, the Office of the Fire Marshal is the enforcement, educational, and informational arm, the Operations Division responds to and manages incidents and special events, the Support Services Division supplies and maintains infrastructure, equipment, clothing, and apparatus, and the Training Divison recruits, hires, trains, and manages career development.

The shift schedule for the fire department is a nine-day cycle as follows: five twenty-four-hour days alternating on and off followed by four days off.

The city had an ISO rating of 3 for the fiscal year being reported here, as rated in 2015. Very shortly after the fiscal year being reported here, the Raleigh Fire Department moved up to an ISO rating of 1 as of August 1, 2016. This is the highest rating possible.

The fire department in Raleigh conducted 23,149 fire maintenance, construction, and reinspections during the fiscal year. Fire inspections are scheduled by the Office of the Fire Marshal through an automated process based on a priority basis and consistent with section 106 of the NC State Fire Code. Other inspections are scheduled as requested for special events, operational permits, and special requests. Apartment complexes are counted as one inspection per building and high rises are considered as one inspection with one file.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Although it took place after the fiscal year being reported here, the Raleigh Fire Department

Municipal Profile

Service Population	440,621
Land Area (Square Miles)	145.16
Persons per Square Mile	3,035
Median Family Income	$68,678
U.S. Census 2010	

Service Profile

FTE Positions—Firefighters	536.0
FTE Positions—Other	70.0
Fire Stations	28
First-Line Fire Apparatus	
Pumpers	27
Aerial Trucks	9
Quints	0
Squads	2
Rescue	1
Other	4
Fire Department Responses	39,300
Responses for Fires	1,078
Structural Fires Reported	168
Inspections Completed for Maintenance, Construction, and Reinspections	23,149
Fire Code Violations Reported	23,149
Estimated Fire Loss (millions)	$19.32
Amount of Property Protected in Service Area (millions)	$53,578
Number of Fire Education Programs or Events	471

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	72.7%
Operating Costs	17.7%
Capital Costs	9.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$48,306,338
Operating Costs	$11,780,011
Capital Costs	$6,336,797
TOTAL	$66,423,146

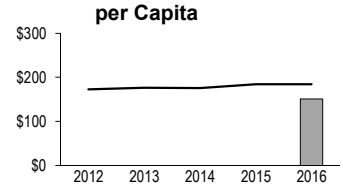
Raleigh

Fire Services

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

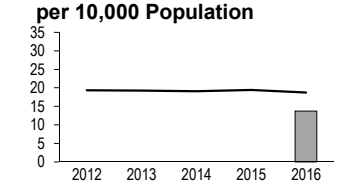
Resource Measures

Fire Services Costs per Capita



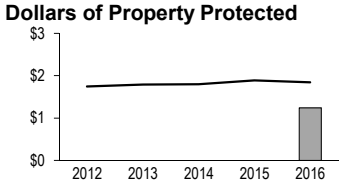
	2012	2013	2014	2015	2016
Raleigh					$151
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					13.8
Average	19.3	19.2	19.1	19.4	18.7

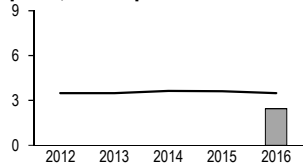
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Raleigh					$1.24
Average	$1.74	$1.79	$1.80	$1.89	$1.85

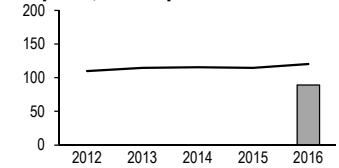
Workload Measures

Actual Fires per 1,000 Population



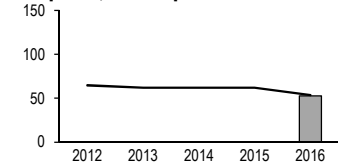
	2012	2013	2014	2015	2016
Raleigh					2.45
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					89
Average	110	115	116	115	121

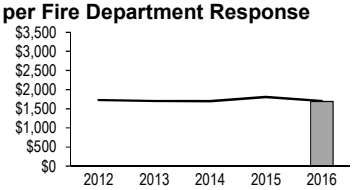
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Raleigh					53
Average	65	62	62	62	54

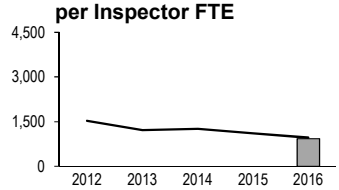
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Raleigh					$1,690
Average	$1,735	$1,707	$1,700	$1,810	$1,703

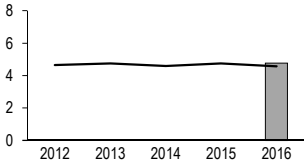
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Raleigh					926
Average	1,529	1,217	1,262	1,106	961

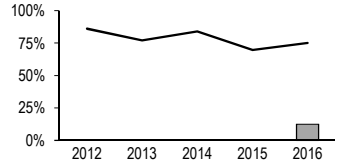
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



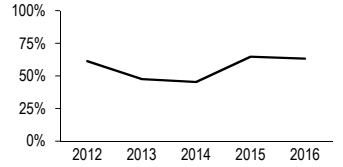
	2012	2013	2014	2015	2016
Raleigh					4.8
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



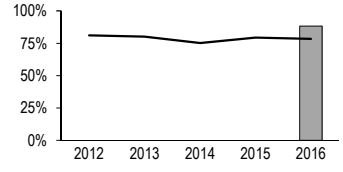
	2012	2013	2014	2015	2016
Raleigh					13%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



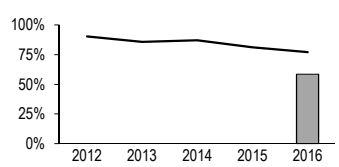
	2012	2013	2014	2015	2016
Raleigh					
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



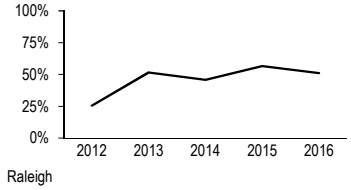
	2012	2013	2014	2015	2016
Raleigh					88%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Raleigh					59%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Raleigh					
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Salisbury Fire Services

Fiscal Year 2015–16

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 the 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 1,224 fire maintenance, construction, and reinspections in FY 2015–16. 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

Service Population	34,278
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
Median Family Income U.S. Census 2010	$40,192

Service Profile

FTE Positions—Firefighters	66.0
FTE Positions—Other	9.0
Fire Stations	5
First-Line Fire Apparatus	
Pumpers	2
Aerial Trucks	2
Quints	2
Squads	0
Rescue	0
Other	3
Fire Department Responses	5,416
Responses for Fires	136
Structural Fires Reported	47
Inspections Completed for Maintenance, Construction, and Reinspections	1,224
Fire Code Violations Reported	1,660
Estimated Fire Loss (millions)	$1.06
Amount of Property Protected in Service Area (millions)	$2,803
Number of Fire Education Programs or Events	48

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	67.5%
Operating Costs	20.3%
Capital Costs	12.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,455,166
Operating Costs	$1,340,565
Capital Costs	$807,017
TOTAL	$6,602,748

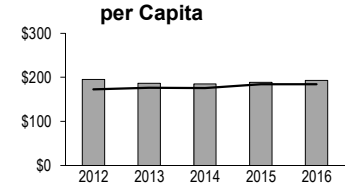
Salisbury

Fire Services

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

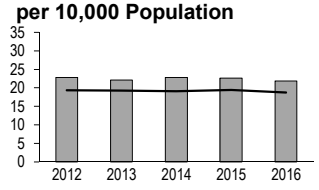
Resource Measures

Fire Services Costs per Capita



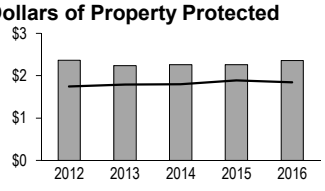
	2012	2013	2014	2015	2016
Salisbury	$195	$186	$185	$188	$193
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	22.8	22.1	22.8	22.7	21.9
Average	19.3	19.2	19.1	19.4	18.7

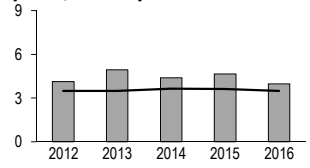
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Salisbury	$2.36	$2.24	$2.26	$2.26	$2.36
Average	$1.74	$1.79	$1.80	$1.89	$1.85

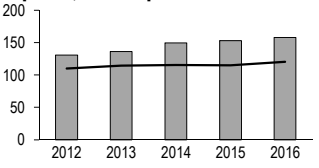
Workload Measures

Actual Fires per 1,000 Population



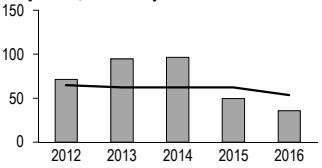
	2012	2013	2014	2015	2016
Salisbury	4.12	4.93	4.39	4.65	3.97
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	131	136	149	153	158
Average	110	115	116	115	121

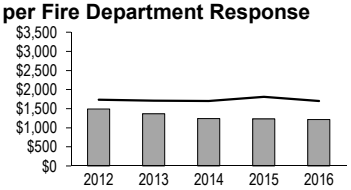
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Salisbury	71	95	97	49	36
Average	65	62	62	62	54

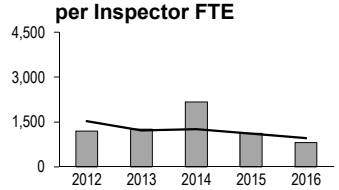
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Salisbury	$1,494	$1,368	$1,240	$1,228	$1,219
Average	$1,735	$1,707	$1,700	$1,810	$1,703

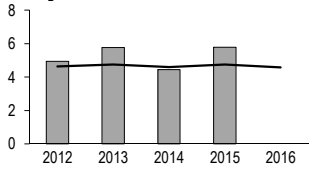
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Salisbury	1,201	1,265	2,172	1,117	816
Average	1,529	1,217	1,262	1,106	961

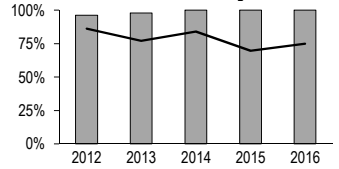
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



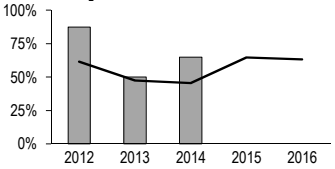
	2012	2013	2014	2015	2016
Salisbury	4.9	5.8	4.4	5.8	
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



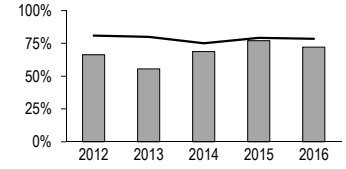
	2012	2013	2014	2015	2016
Salisbury	96%	98%	100%	100%	100%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



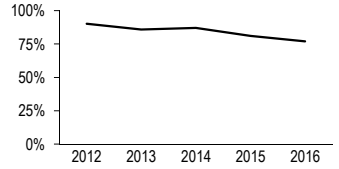
	2012	2013	2014	2015	2016
Salisbury	87%	50%	65%		
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



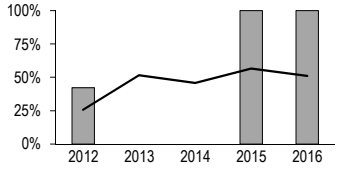
	2012	2013	2014	2015	2016
Salisbury	66%	56%	69%	77%	72%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Salisbury					
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Salisbury	42.1%			100.0%	100.0%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Wilson Fire Services

Fiscal Year 2015–16

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-hour 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 5,203 fire maintenance, construction, and reinspections during FY 2015–16. 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

Service Population	49,357
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Median Family Income U.S. Census 2010	$43,442

Service Profile

FTE Positions—Firefighters	81.0
FTE Positions—Other	16.0
Fire Stations	5
First-Line Fire Apparatus	
Pumpers	4
Aerial Trucks	1
Quints	1
Squads	0
Rescue	1
Other	1
Fire Department Responses	4,091
Responses for Fires	255
Structural Fires Reported	63
Inspections Completed for Maintenance, Construction, and Reinspections	5,203
Fire Code Violations Reported	8,034
Estimated Fire Loss (millions)	$1.17
Amount of Property Protected in Service Area (millions)	$4,267
Number of Fire Education Programs or Events	997

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	73.6%
Operating Costs	18.5%
Capital Costs	7.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,653,900
Operating Costs	$1,920,731
Capital Costs	$826,737
TOTAL	$10,401,368

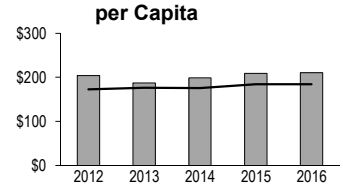
Wilson

Fire Services

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

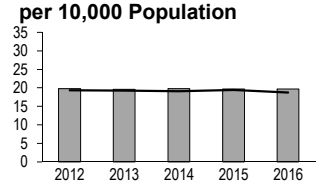
Resource Measures

Fire Services Costs per Capita



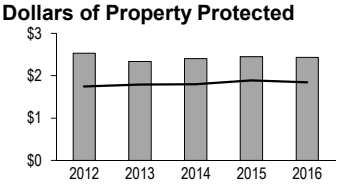
	2012	2013	2014	2015	2016
Wilson	$204	$187	$199	$209	$211
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	19.7	19.6	19.8	19.7	19.7
Average	19.3	19.2	19.1	19.4	18.7

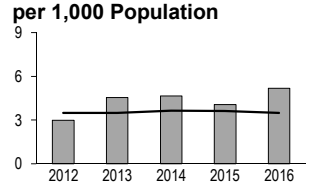
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Wilson	$2.53	$2.34	$2.41	$2.45	$2.44
Average	$1.74	$1.79	$1.80	$1.89	$1.85

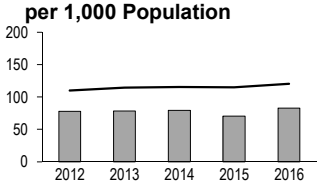
Workload Measures

Actual Fires per 1,000 Population



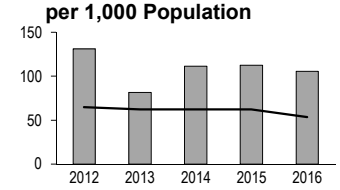
	2012	2013	2014	2015	2016
Wilson	2.97	4.53	4.64	4.06	5.17
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	78	78	79	71	83
Average	110	115	116	115	121

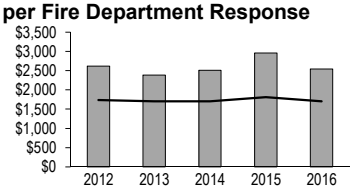
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Wilson	131	82	111	113	105
Average	65	62	62	62	54

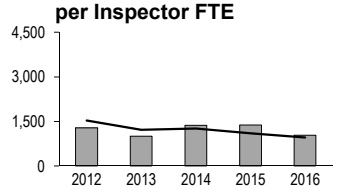
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Wilson	$2,617	$2,389	$2,511	$2,956	$2,543
Average	$1,735	$1,707	$1,700	$1,810	$1,703

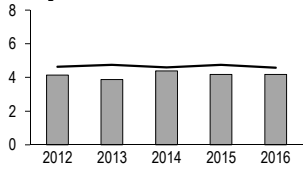
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Wilson	1,287	1,008	1,366	1,385	1,041
Average	1,529	1,217	1,262	1,106	961

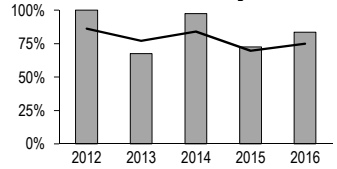
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



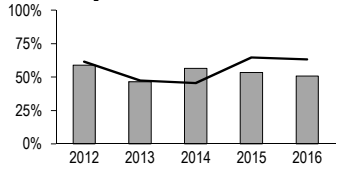
	2012	2013	2014	2015	2016
Wilson	4.1	3.9	4.4	4.2	4.2
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



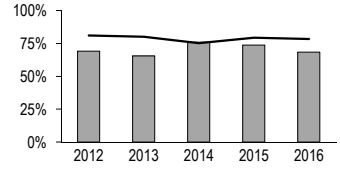
	2012	2013	2014	2015	2016
Wilson	100%	67%	97%	73%	83%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



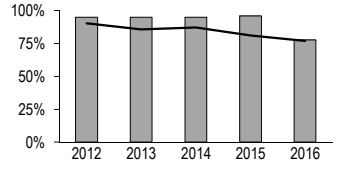
	2012	2013	2014	2015	2016
Wilson	59%	46%	57%	53%	51%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



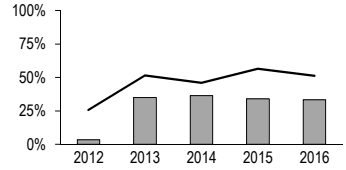
	2012	2013	2014	2015	2016
Wilson	69%	65%	76%	74%	68%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Wilson	95%	95%	95%	96%	78%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Wilson	3.4%	34.9%	36.4%	34.0%	33.3%
Average	25.6%	51.6%	45.9%	56.5%	51.1%

Winston-Salem Fire Services

Fiscal Year 2015–16

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 2, as rated in 2015.

The fire department in Winston-Salem conducted 11,818 fire maintenance, construction, and reinspections during FY 2015–16. 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.

Winston-Salem made a policy change for medical call responses, which lowered the total number of incidents the fire department responded to during FY 2013–14. The city worked through the dispatch protocol to eliminate certain "non-life threatening" calls, which lowered the number of medical calls.

Municipal Profile

Service Population	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Positions—Firefighters	321.2
FTE Positions—Other	31.3
Fire Stations	19
First-Line Fire Apparatus	
Pumpers	18
Aerial Trucks	5
Quints	0
Squads	0
Rescue	2
Other	12
Fire Department Responses	27,056
Responses for Fires	829
Structural Fires Reported	270
Inspections Completed for Maintenance, Construction, and Reinspections	11,818
Fire Code Violations Reported	8,861
Estimated Fire Loss (millions)	$4.44
Amount of Property Protected in Service Area (millions)	$20,370
Number of Fire Education Programs or Events	518

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	79.2%
Operating Costs	13.1%
Capital Costs	7.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$24,587,333
Operating Costs	$4,054,580
Capital Costs	$2,416,451
TOTAL	$31,058,364

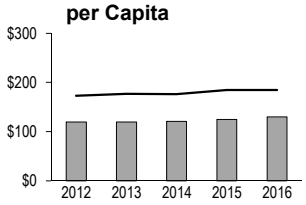
Winston-Salem

Fire Services

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

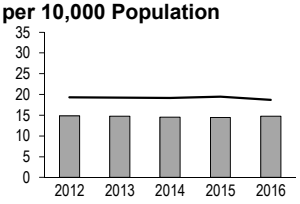
Resource Measures

Fire Services Costs per Capita



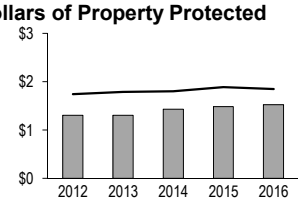
	2012	2013	2014	2015	2016
Winston-Salem	$120	$119	$121	$125	$130
Average	$173	$176	$176	$184	$184

Fire Services Total FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	14.8	14.7	14.6	14.4	14.8
Average	19.3	19.2	19.1	19.4	18.7

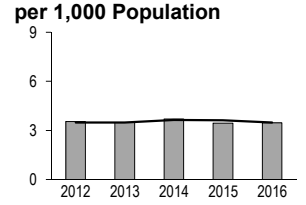
Fire Services Cost per Thousand Dollars of Property Protected



	2012	2013	2014	2015	2016
Winston-Salem	$1.31	$1.31	$1.43	$1.49	$1.52
Average	$1.74	$1.79	$1.80	$1.89	$1.85

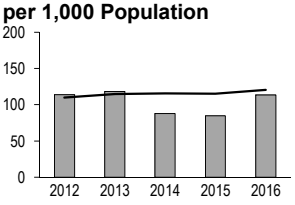
Workload Measures

Actual Fires per 1,000 Population



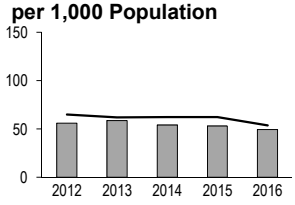
	2012	2013	2014	2015	2016
Winston-Salem	3.55	3.48	3.69	3.44	3.47
Average	3.49	3.49	3.63	3.62	3.49

Fire Department Responses per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	114	118	88	85	113
Average	110	115	116	115	121

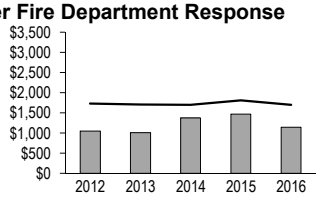
Fire Inspections Completed per 1,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	56	59	54	53	49
Average	65	62	62	62	54

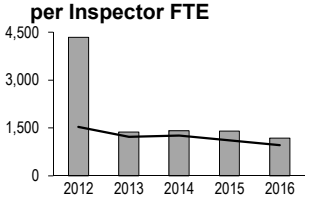
Efficiency Measures

Fire Services Cost per Fire Department Response



	2012	2013	2014	2015	2016
Winston-Salem	$1,048	$1,009	$1,377	$1,473	$1,148
Average	$1,735	$1,707	$1,700	$1,810	$1,703

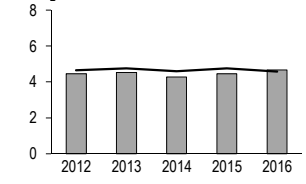
Inspections Completed per Inspector FTE



	2012	2013	2014	2015	2016
Winston-Salem	4,341	1,368	1,411	1,404	1,182
Average	1,529	1,217	1,262	1,106	961

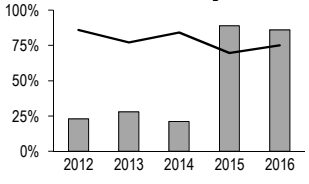
Effectiveness Measures

Average Response Time to Priority One Calls in Minutes



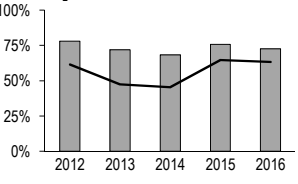
	2012	2013	2014	2015	2016
Winston-Salem	4.5	4.5	4.3	4.5	4.7
Average	4.6	4.8	4.6	4.7	4.6

Percentage of Fire Code Violations Cleared within 90 Days



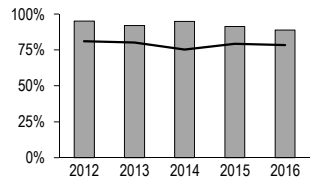
	2012	2013	2014	2015	2016
Winston-Salem	23%	28%	21%	89%	86%
Average	86%	77%	84%	70%	75%

Percentage of Fires Confined to Rooms or Objects Involved on Arrival



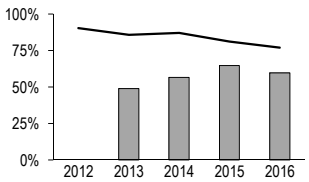
	2012	2013	2014	2015	2016
Winston-Salem	78%	72%	68%	76%	73%
Average	61%	47%	45%	65%	63%

Percentage of Fires for Which Cause Was Determined



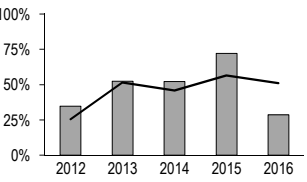
	2012	2013	2014	2015	2016
Winston-Salem	95%	92%	95%	91%	89%
Average	81%	80%	75%	79%	78%

Percentage of Full Response within 8 Minutes Travel Time



	2012	2013	2014	2015	2016
Winston-Salem		49%	57%	65%	60%
Average	90%	86%	87%	81%	77%

Percentage of Lost Pulse Cases Recovered Pulse at Transfer of Care



	2012	2013	2014	2015	2016
Winston-Salem	34.8%	52.4%	52.2%	72.2%	28.6%
Average	25.6%	51.6%	45.9%	56.5%	51.1%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Performance and Cost Data

BUILDING INSPECTIONS


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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 2010 to 2015	Building Inspections by Trade					Number of Plan Reviewers	Building Inspector FTEs	Total Staff FTEs
			Building	Electrical	Mechanical	Plumbing	Total			
Apex	37.8	19.4%	11,959	7,241	5,914	6,227	31,341	2.0	6	13
Asheville	45.5	9.0%	15,261	9,327	5,769	6,042	36,399	5.0	16	32
Burlington	34.5	4.4%	2,229	3,857	2,345	1,716	10,147	1.0	5	9
Cary	65.5	12.9%	26,648	17,385	15,185	11,679	70,897	5.0	20	37
Chapel Hill	27.4	4.1%	6,279	3,372	4,484	2,540	16,675	1.5	6	13
Greensboro	128.1	4.9%	23,994	16,407	13,700	12,049	66,150	4.5	15	31
Greenville	66.2	4.0%	3,899	3,722	3,488	2,154	13,263	1.0	5	10
High Point	58.9	5.2%	8,950	6,654	5,669	3,620	24,893	2.5	11	21
Raleigh	145.2	9.1%	29,243	36,643	29,523	21,940	117,349	12.0	37	70
Wilson	61.9	0.4%	2,326	1,812	1,959	984	7,081	1.0	3	6
Winston-Salem	392.7	4.0%	16,841	12,197	18,805	11,943	59,786	4.0	16	43

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

Apex Building Inspections

Fiscal Year 2015–16

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 twenty-one 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 primarily 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 voicemail by 3 a.m. are to be performed on the next business day.

Total revenue received from inspection fees amounted to $1,929,332 for the fiscal year.

Conditions Affecting Service, Performance, and Costs

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	69,684
Land Area Inspected (Square Miles)	37.84
Persons per Square Mile	1,842
Estimated Tax Base in Service Area (billions)	$8.55
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	6.0
Total Inspectors	6.0
FTE Plan Reviewers	2.0
Other FTE Positions	5.0
Total of All Positions	13.0
Number of Inspections by Type	
Building	11,959
Electrical	7,241
Mechanical	5,914
Plumbing	6,227
TOTAL	31,341
Building Permit Values	
Residential	$138,861,507
Multi-Family	with other categories
Commercial	$65,665,650
TOTAL	$204,527,157
Inspection Fee Revenue	$1,929,332

Full Cost Profile

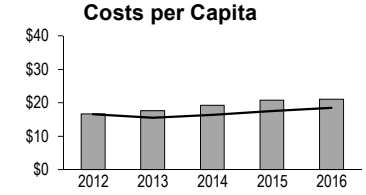
Cost Breakdown by Percentage	
Personal Services	80.9%
Operating Costs	13.9%
Capital Costs	5.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,187,322
Operating Costs	$203,669
Capital Costs	$76,920
TOTAL	$1,467,911

Apex — Building Inspections

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

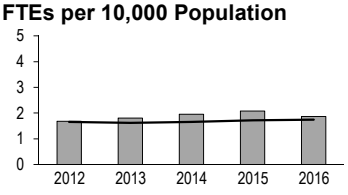
Resource Measures

Building Inspections Services Costs per Capita



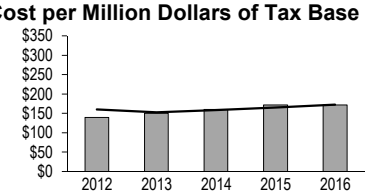
	2012	2013	2014	2015	2016
Apex	$16.69	$17.57	$19.29	$20.82	$21.07
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	1.68	1.81	1.96	2.08	1.87
Average	1.65	1.62	1.66	1.72	1.75

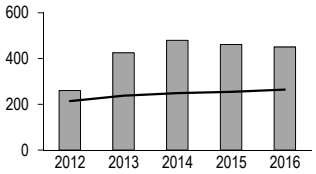
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Apex	$139	$150	$160	$172	$172
Average	$160	$153	$159	$165	$172

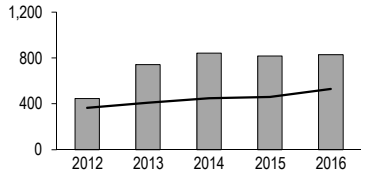
Workload Measures

Inspections per 1,000 Population in Service Area



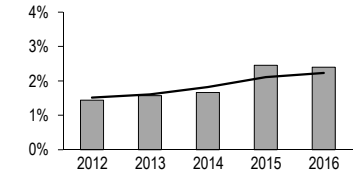
	2012	2013	2014	2015	2016
Apex	259	425	479	461	450
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



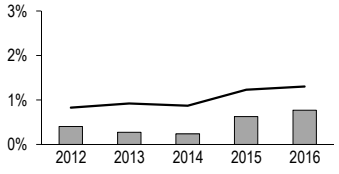
	2012	2013	2014	2015	2016
Apex	445	743	843	817	828
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



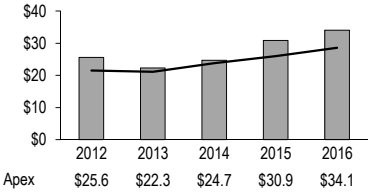
	2012	2013	2014	2015	2016
Apex	1.44%	1.57%	1.67%	2.45%	2.39%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Apex	0.40%	0.27%	0.24%	0.62%	0.77%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

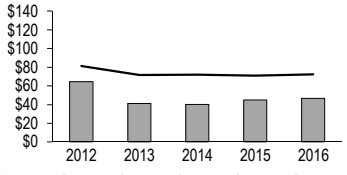
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Apex	$25.6	$22.3	$24.7	$30.9	$34.1
Average	$21.5	$21.2	$23.8	$25.9	$28.6

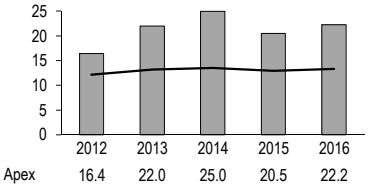
Efficiency Measures

Building Services Cost per Inspection—All Types



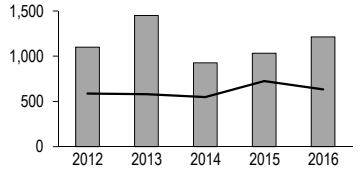
	2012	2013	2014	2015	2016
Apex	$64.41	$41.38	$40.28	$45.13	$46.84
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Apex	16.4	22.0	25.0	20.5	22.2
Average	12.2	13.2	13.5	12.9	13.3

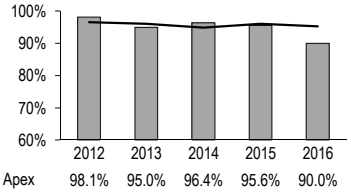
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Apex	1,102	1,452	926	1,034	1,213
Average	587	579	548	724	634

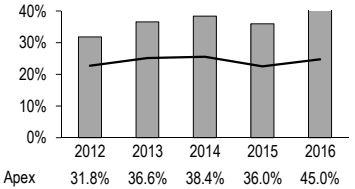
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Apex	98.1%	95.0%	96.4%	95.6%	90.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Apex	31.8%	36.6%	38.4%	36.0%	45.0%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Asheville — Building Inspections

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Asheville Building Safety Division provides building inspection and permitting services to all areas within the Asheville city limits.

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 Building Safety Division 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 division 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 inspection requests received by phone before 4:30 pm and online by 6:00 pm will be performed the following business day.

Total revenue received from inspection fees amounted to $2.9 million for the fiscal year. 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 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	90,918
Land Area Inspected (Square Miles)	45.52
Persons per Square Mile	1,997
Estimated Tax Base in Service Area (billions)	$11.39
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	16.0
Total Inspectors	16.0
FTE Plan Reviewers	5.0
Other FTE Positions	11.0
Total of All Positions	32.0
Number of Inspections by Type	
Building	15,261
Electrical	9,327
Mechanical	5,769
Plumbing	6,042
TOTAL	36,399
Building Permit Values	
Residential	$115,616,645
Multi-Family	$8,408,576
Commercial	$295,546,018
TOTAL	$419,571,239
Inspection Fee Revenue	$2,952,298

Full Cost Profile

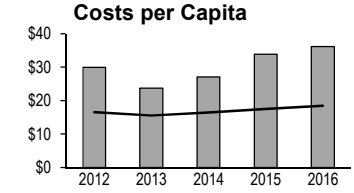
Cost Breakdown by Percentage	
Personal Services	67.5%
Operating Costs	28.2%
Capital Costs	4.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,217,480
Operating Costs	$925,546
Capital Costs	$142,188
TOTAL	$3,285,214

Asheville — Building Inspections

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

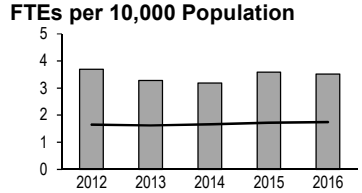
Resource Measures

Building Inspections Services Costs per Capita



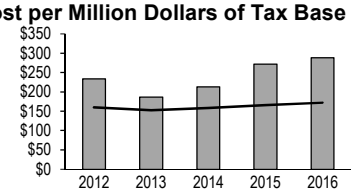
	2012	2013	2014	2015	2016
Asheville	$29.92	$23.71	$27.04	$33.90	$36.13
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	3.69	3.28	3.18	3.59	3.52
Average	1.65	1.62	1.66	1.72	1.75

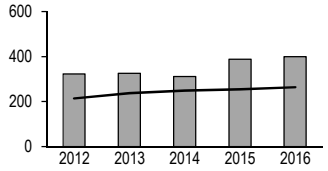
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Asheville	$234	$186	$213	$271	$288
Average	$160	$153	$159	$165	$172

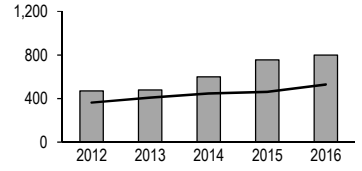
Workload Measures

Inspections per 1,000 Population in Service Area



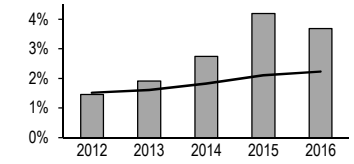
	2012	2013	2014	2015	2016
Asheville	323	325	311	388	400
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



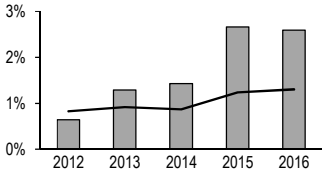
	2012	2013	2014	2015	2016
Asheville	471	478	599	755	800
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



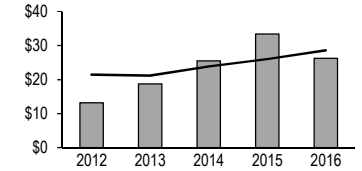
	2012	2013	2014	2015	2016
Asheville	1.45%	1.91%	2.74%	4.19%	3.68%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Asheville	0.64%	1.29%	1.43%	2.67%	2.59%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

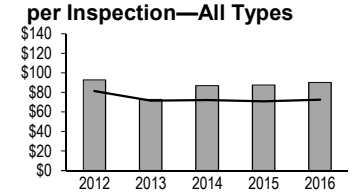
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Asheville	$13.2	$18.8	$25.5	$33.4	$26.2
Average	$21.5	$21.2	$23.8	$25.9	$28.6

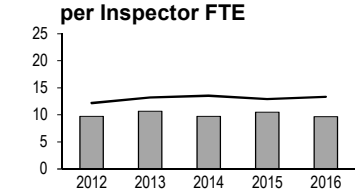
Efficiency Measures

Building Services Cost per Inspection—All Types



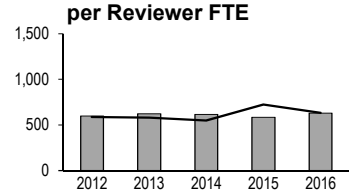
	2012	2013	2014	2015	2016
Asheville	$92.76	$72.87	$86.83	$87.47	$90.26
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Asheville	9.7	10.7	9.7	10.5	9.7
Average	12.2	13.2	13.5	12.9	13.3

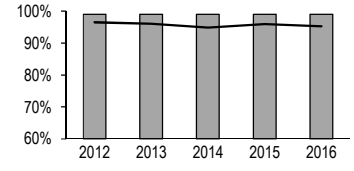
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Asheville	598	622	616	585	630
Average	587	579	548	724	634

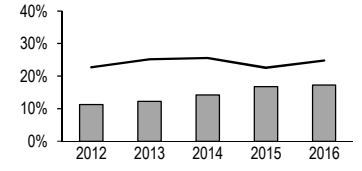
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Asheville	99.0%	99.0%	99.0%	99.0%	99.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Asheville	11.3%	12.3%	14.2%	16.8%	17.2%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Burlington Building Inspections

Fiscal Year 2015–16

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 four 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 $671,640 for the fiscal year. 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.

Burlington had a large one-time charge for contracted services in FY 2014 which pushed costs up over the prior year.

The earlier broad downturn in the economy had reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	53,705
Land Area Inspected (Square Miles)	34.52
Persons per Square Mile	1,556
Estimated Tax Base in Service Area (billions)	$4.80
Median Family Income U.S. Census 2010	$46,461

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	3.0
Total of All Positions	9.0
Number of Inspections by Type	
Building	2,229
Electrical	3,857
Mechanical	2,345
Plumbing	1,716
TOTAL	10,147
Building Permit Values	
Residential	$46,847,097
Multi-Family	with commercial
Commercial	$67,066,772
TOTAL	$113,913,869
Inspection Fee Revenue	$671,640

Full Cost Profile

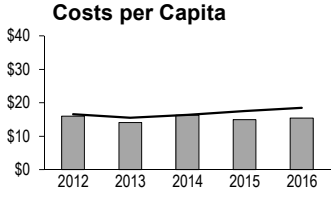
Cost Breakdown by Percentage	
Personal Services	72.7%
Operating Costs	18.2%
Capital Costs	9.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$601,283
Operating Costs	$150,215
Capital Costs	$75,057
TOTAL	$826,555

Burlington — Building Inspections

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

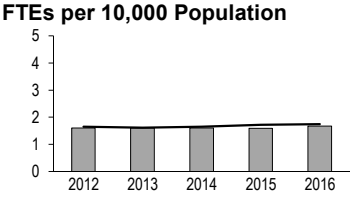
Resource Measures

Building Inspections Services Costs per Capita



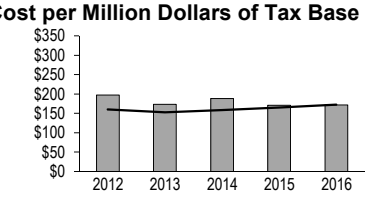
	2012	2013	2014	2015	2016
Burlington	$16.00	$14.04	$16.29	$14.89	$15.39
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	1.60	1.61	1.60	1.59	1.68
Average	1.65	1.62	1.66	1.72	1.75

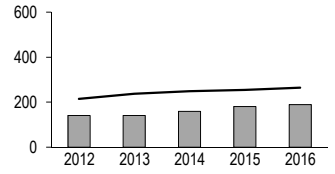
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Burlington	$197	$173	$188	$170	$172
Average	$160	$153	$159	$165	$172

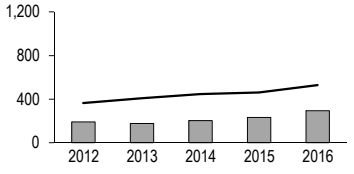
Workload Measures

Inspections per 1,000 Population in Service Area



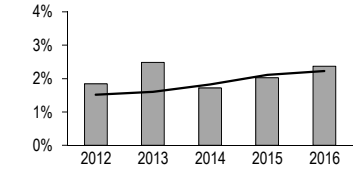
	2012	2013	2014	2015	2016
Burlington	140	140	159	181	189
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



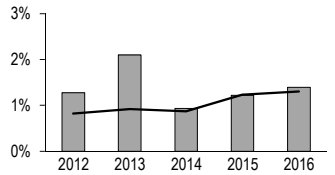
	2012	2013	2014	2015	2016
Burlington	192	178	203	234	294
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



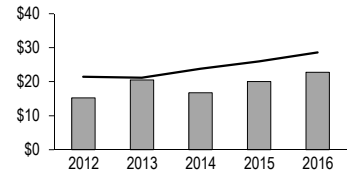
	2012	2013	2014	2015	2016
Burlington	1.84%	2.49%	1.72%	2.02%	2.37%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Burlington	1.28%	2.10%	0.93%	1.22%	1.40%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

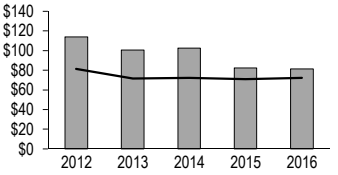
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Burlington	$15.2	$20.5	$16.7	$20.0	$22.8
Average	$21.5	$21.2	$23.8	$25.9	$28.6

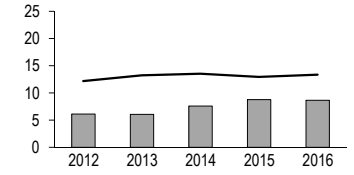
Efficiency Measures

Building Services Cost per Inspection—All Types



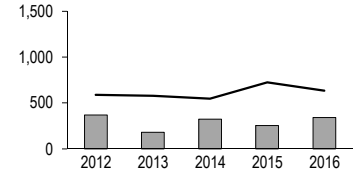
	2012	2013	2014	2015	2016
Burlington	$113.99	$100.42	$102.51	$82.41	$81.46
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Burlington	6.1	6.1	7.6	8.7	8.6
Average	12.2	13.2	13.5	12.9	13.3

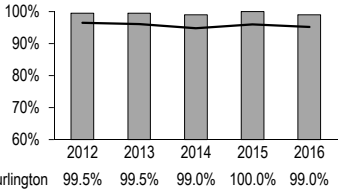
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Burlington	370	182	324	254	341
Average	587	579	548	724	634

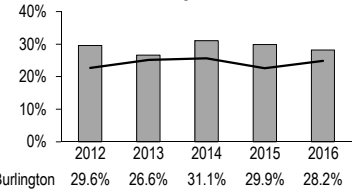
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Burlington	99.5%	99.5%	99.0%	100.0%	99.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Burlington	29.6%	26.6%	31.1%	29.9%	28.2%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Cary Building Inspections

Fiscal Year 2015–16

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 inspections trade groups.

Total revenue received from inspection fees amounted to $2.8.million for the fiscal year. 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 earlier broad downturn in the economy had reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	163,601
Land Area Inspected (Square Miles)	65.53
Persons per Square Mile	2,497
Estimated Tax Base in Service Area (billions)	$25.01
Median Family Income U.S. Census 2010	$108,956

Service Profile

FTE Inspectors	
Building	7.0
Electrical	3.0
Mechanical	2.0
Plumbing	2.0
All Trades	6.0
Total Inspectors	20.0
FTE Plan Reviewers	5.0
Other FTE Positions	12.0
Total of All Positions	37.0
Number of Inspections by Type	
Building	26,648
Electrical	17,385
Mechanical	15,185
Plumbing	11,679
TOTAL	70,897
Building Permit Values	
Residential	$235,060,453
Multi-Family	$29,890,905
Commercial	$209,478,182
TOTAL	$474,429,540
Inspection Fee Revenue	$2,825,967

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	76.4%
Operating Costs	19.0%
Capital Costs	4.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,788,766
Operating Costs	$940,702
Capital Costs	$229,575
TOTAL	$4,959,043

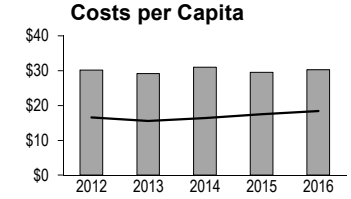
Cary

Building Inspections

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

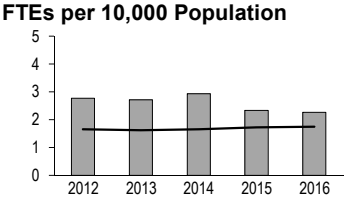
Resource Measures

Building Inspections Services Costs per Capita



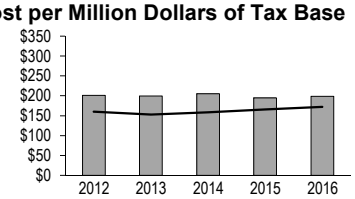
	2012	2013	2014	2015	2016
Cary	$30.17	$29.19	$31.04	$29.50	$30.31
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	2.76	2.71	2.93	2.33	2.26
Average	1.65	1.62	1.66	1.72	1.75

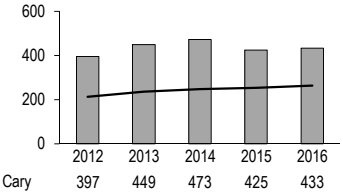
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Cary	$201	$199	$205	$195	$198
Average	$160	$153	$159	$165	$172

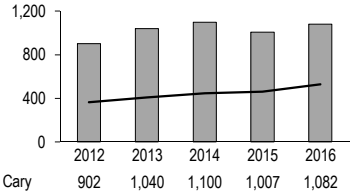
Workload Measures

Inspections per 1,000 Population in Service Area



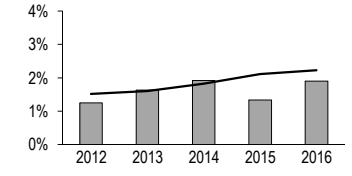
	2012	2013	2014	2015	2016
Cary	397	449	473	425	433
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



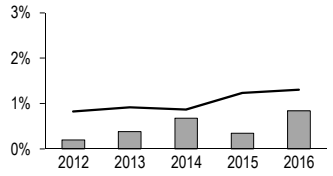
	2012	2013	2014	2015	2016
Cary	902	1,040	1,100	1,007	1,082
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



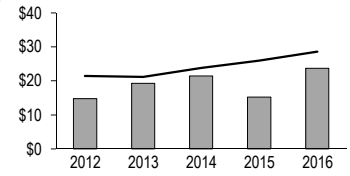
	2012	2013	2014	2015	2016
Cary	1.24%	1.63%	1.92%	1.33%	1.90%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Cary	0.20%	0.38%	0.68%	0.35%	0.84%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

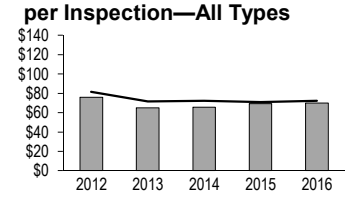
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Cary	$14.8	$19.3	$21.5	$15.3	$23.7
Average	$21.5	$21.2	$23.8	$25.9	$28.6

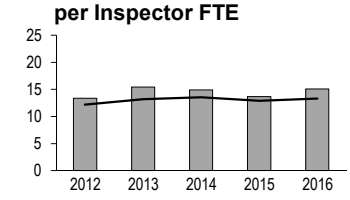
Efficiency Measures

Building Services Cost per Inspection—All Types



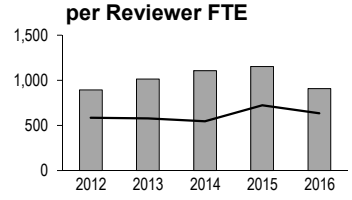
	2012	2013	2014	2015	2016
Cary	$76.07	$64.98	$65.57	$69.39	$69.95
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Cary	13.4	15.4	14.9	13.7	15.1
Average	12.2	13.2	13.5	12.9	13.3

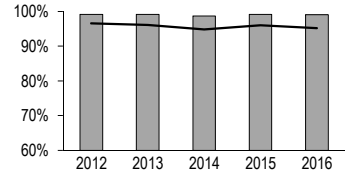
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Cary	893	1,014	1,109	1,154	910
Average	587	579	548	724	634

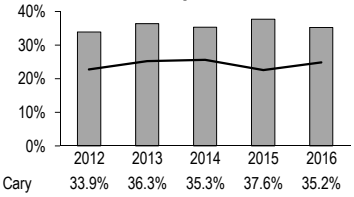
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Cary	99.2%	99.1%	98.7%	99.1%	99.1%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Cary	33.9%	36.3%	35.3%	37.6%	35.2%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Chapel Hill Building Inspections

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill provides building inspection services within its corporate limits and extra-territorial jurisdiction (ETJ) through its Permits and Inspections Division within the Office of Planning and Sustainability. The division is a full-service entity, meeting all requirements mandated by the N.C. General Statutes.

Inspectors have a main discipline in one of the building trades and usually perform Level 3 inspections, plus they perform inspections in other disciplines when needed. On occasion retired part-time inspectors are brought in to help with overloads and the need for plan review in field inspections.

Total revenue received from inspection fees amounted to $1.6 million for the fiscal year. The fee schedule separates fees for each type of permit, with specific fees depending on a minimum amount, square footage, and other factors. There is a fee for reinspections.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Although data for the earlier years are not shown here, Chapel Hill has noted an uptick in permits and construction over prior years.

The population served is calculated by adding the population of Chapel Hill with the population of the ETJ. The tax base served is calculated by adding the tax base of Chapel Hill 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 Orange County and multiplying them by the square miles of the ETJ.

Municipal Profile

Population Served	61,742
Land Area Inspected (Square Miles)	27.37
Persons per Square Mile	2,256
Estimated Tax Base in Service Area (billions)	$7.78
Median Family Income U.S. Census 2010	$61,405

Service Profile

FTE Inspectors	
Building	3.0
Electrical	0.0
Mechanical	0.0
Plumbing	0.0
All Trades	3.0
Total Inspectors	6.0
FTE Plan Reviewers	1.5
Other FTE Positions	5.0
Total of All Positions	12.5
Number of Inspections by Type	
Building	5,949
Electrical	3,372
Mechanical	4,484
Plumbing	2,540
TOTAL	16,675
Building Permit Values	
Residential	Na
Multi-Family	NA
Commercial	NA
TOTAL	NA
Inspection Fee Revenue	$1,621,318

Full Cost Profile

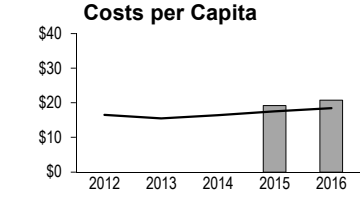
Cost Breakdown by Percentage	
Personal Services	67.5%
Operating Costs	28.8%
Capital Costs	3.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$866,254
Operating Costs	$369,832
Capital Costs	$47,066
TOTAL	$1,283,152

Chapel Hill — Building Inspections

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

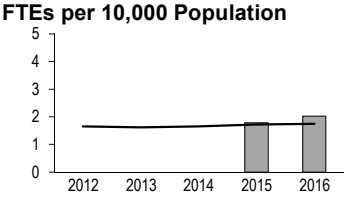
Resource Measures

Building Inspections Services Costs per Capita



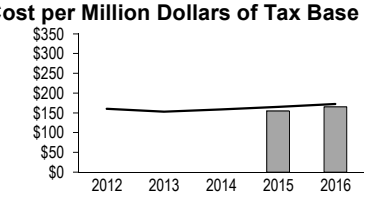
	2012	2013	2014	2015	2016
Chapel Hill				$19.17	$20.78
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				1.78	2.02
Average	1.65	1.62	1.66	1.72	1.75

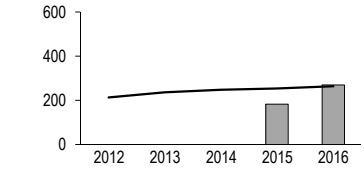
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Chapel Hill				$154	$165
Average	$160	$153	$159	$165	$172

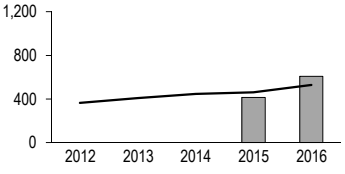
Workload Measures

Inspections per 1,000 Population in Service Area



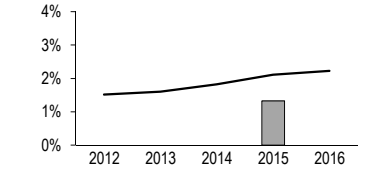
	2012	2013	2014	2015	2016
Chapel Hill				184	270
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



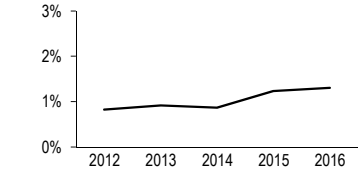
	2012	2013	2014	2015	2016
Chapel Hill				414	609
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



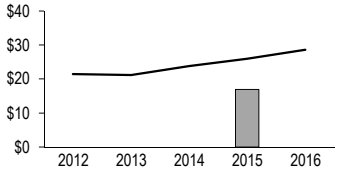
	2012	2013	2014	2015	2016
Chapel Hill				1.32%	
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Chapel Hill					
Average	0.82%	0.92%	0.87%	1.23%	1.30%

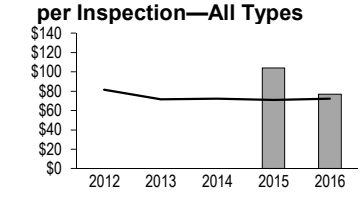
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Chapel Hill				$16.9	
Average	$21.5	$21.2	$23.8	$25.9	$28.6

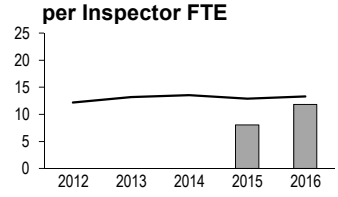
Efficiency Measures

Building Services Cost per Inspection—All Types



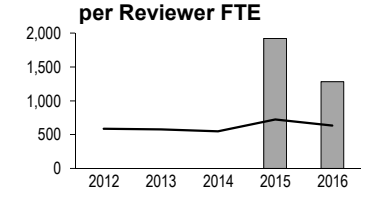
	2012	2013	2014	2015	2016
Chapel Hill				$104.21	$76.95
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Chapel Hill				8.1	11.8
Average	12.2	13.2	13.5	12.9	13.3

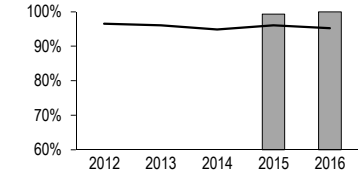
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Chapel Hill				1,921	1,281
Average	587	579	548	724	634

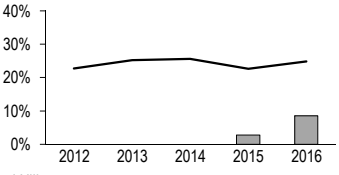
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Chapel Hill				99.3%	100.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Chapel Hill				2.7%	8.5%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Greensboro Building Inspections

Fiscal Year 2015–16

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 $3.0 million for the fiscal year. 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 had reduced building activity and the number of requests for inspections in the earlier years.

Municipal Profile

Population Served	282,840
Land Area Inspected (Square Miles)	128.11
Persons per Square Mile	2,208
Estimated Tax Base in Service Area (billions)	$25.61
Median Family Income U.S. Census 2010	$52,752

Service Profile

FTE Inspectors	
Building	5.0
Electrical	4.0
Mechanical	3.0
Plumbing	3.0
All Trades	0.0
Total Inspectors	15.0
FTE Plan Reviewers	4.5
Other FTE Positions	11.5
Total of All Positions	31.0
Number of Inspections by Type	
Building	23,994
Electrical	16,407
Mechanical	13,700
Plumbing	12,049
TOTAL	66,150
Building Permit Values	
Residential	$129,681,608
Multi-Family	$120,270,004
Commercial	$431,577,284
TOTAL	$681,528,896
Inspection Fee Revenue	$3,037,536

Full Cost Profile

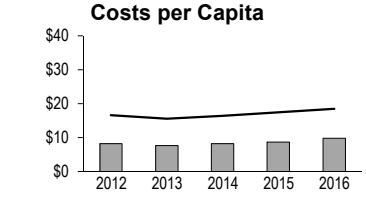
Cost Breakdown by Percentage	
Personal Services	80.7%
Operating Costs	19.3%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,237,841
Operating Costs	$534,043
Capital Costs	$0
TOTAL	$2,771,884

Greensboro — Building Inspections

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

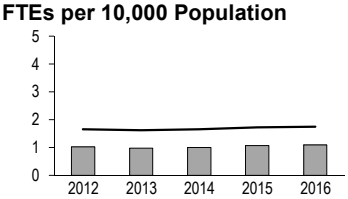
Resource Measures

Building Inspections Services Costs per Capita



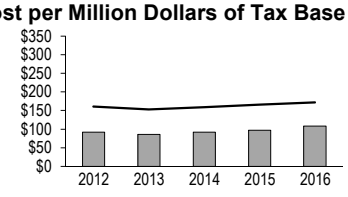
	2012	2013	2014	2015	2016
Greensboro	$8.21	$7.65	$8.21	$8.69	$9.80
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	1.03	0.98	1.00	1.07	1.10
Average	1.65	1.62	1.66	1.72	1.75

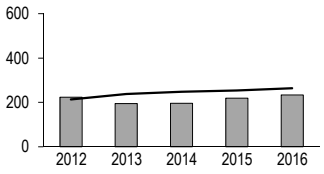
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Greensboro	$92	$86	$92	$97	$108
Average	$160	$153	$159	$165	$172

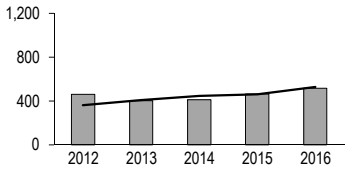
Workload Measures

Inspections per 1,000 Population in Service Area



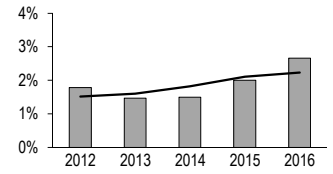
	2012	2013	2014	2015	2016
Greensboro	224	195	197	220	234
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



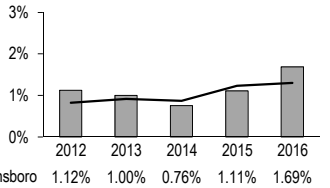
	2012	2013	2014	2015	2016
Greensboro	461	404	412	464	516
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



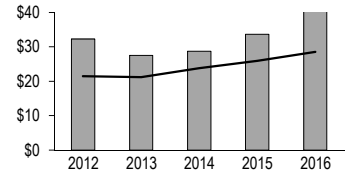
	2012	2013	2014	2015	2016
Greensboro	1.78%	1.47%	1.50%	2.00%	2.66%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Greensboro	1.12%	1.00%	0.76%	1.11%	1.69%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

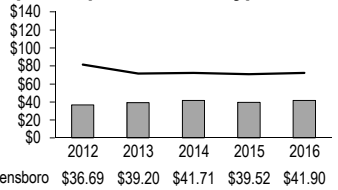
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Greensboro	$32.2	$27.5	$28.8	$33.6	$45.4
Average	$21.5	$21.2	$23.8	$25.9	$28.6

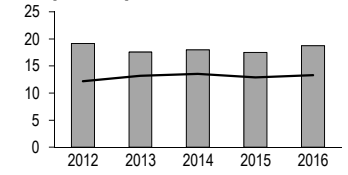
Efficiency Measures

Building Services Cost per Inspection—All Types



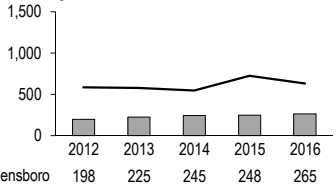
	2012	2013	2014	2015	2016
Greensboro	$36.69	$39.20	$41.71	$39.52	$41.90
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Greensboro	19.2	17.6	18.0	17.5	18.8
Average	12.2	13.2	13.5	12.9	13.3

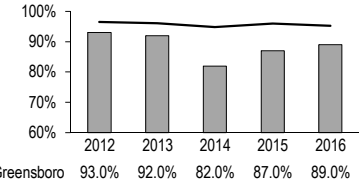
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Greensboro	198	225	245	248	265
Average	587	579	548	724	634

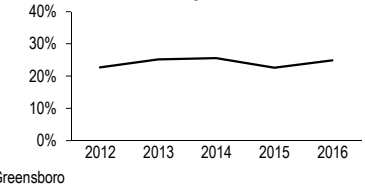
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Greensboro	93.0%	92.0%	82.0%	87.0%	89.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Greensboro					
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Greenville Building Inspections

Fiscal Year 2015–16

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 $622,145 for the fiscal year. 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.

Plan reviews are being done by inspectors as the plan review position has been cut from the budget.

The earlier downturn in the economy over the past several years had decreased the demand for inspections services.

Municipal Profile

Population Served	96,393
Land Area Inspected (Square Miles)	66.21
Persons per Square Mile	1,456
Estimated Tax Base in Service Area (billions)	$6.59
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	1.0
Other FTE Positions	4.0
Total of All Positions	10.0
Number of Inspections by Type	
Building	3,899
Electrical	3,722
Mechanical	3,488
Plumbing	2,154
TOTAL	13,263
Building Permit Values	
Residential	$35,926,128
Multi-Family	$3,852,392
Commercial	$75,142,732
TOTAL	$114,921,252
Inspection Fee Revenue	$622,145

Full Cost Profile

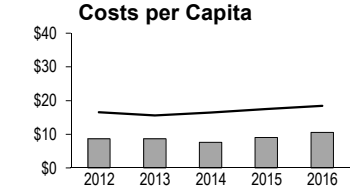
Cost Breakdown by Percentage	
Personal Services	73.4%
Operating Costs	21.3%
Capital Costs	5.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$748,669
Operating Costs	$216,780
Capital Costs	$54,073
TOTAL	$1,019,522

Greenville — Building Inspections

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

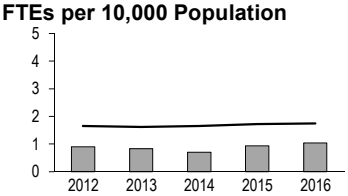
Resource Measures

Building Inspections Services Costs per Capita



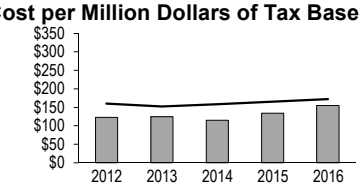
	2012	2013	2014	2015	2016
Greenville	$8.61	$8.64	$7.58	$9.04	$10.58
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	0.90	0.83	0.70	0.94	1.04
Average	1.65	1.62	1.66	1.72	1.75

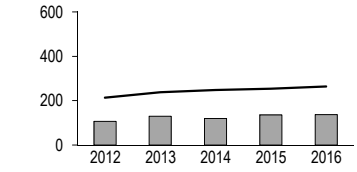
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Greenville	$123	$125	$115	$134	$155
Average	$160	$153	$159	$165	$172

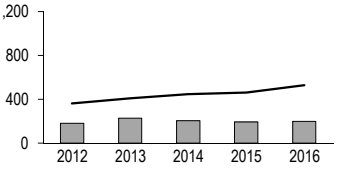
Workload Measures

Inspections per 1,000 Population in Service Area



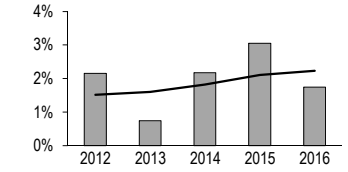
	2012	2013	2014	2015	2016
Greenville	108	130	120	136	138
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



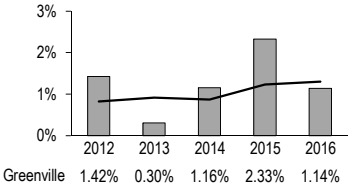
	2012	2013	2014	2015	2016
Greenville	182	228	204	195	200
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



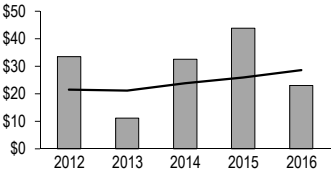
	2012	2013	2014	2015	2016
Greenville	2.15%	0.74%	2.17%	3.05%	1.74%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Greenville	1.42%	0.30%	1.16%	2.33%	1.14%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

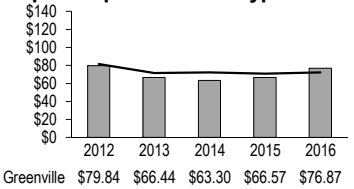
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Greenville	$33.5	$11.1	$32.6	$43.8	$23.0
Average	$21.5	$21.2	$23.8	$25.9	$28.6

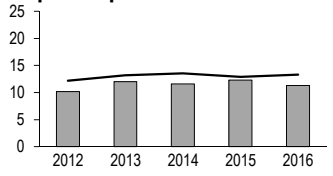
Efficiency Measures

Building Services Cost per Inspection—All Types



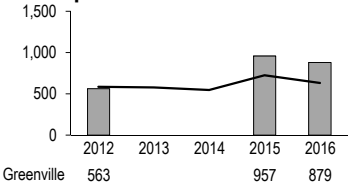
	2012	2013	2014	2015	2016
Greenville	$79.84	$66.44	$63.30	$66.57	$76.87
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Greenville	10.2	12.0	11.6	12.3	11.3
Average	12.2	13.2	13.5	12.9	13.3

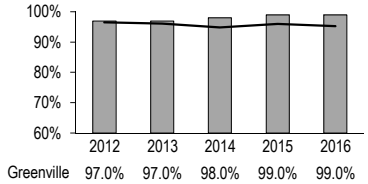
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Greenville	563			957	879
Average	587	579	548	724	634

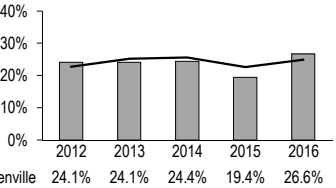
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Greenville	97.0%	97.0%	98.0%	99.0%	99.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Greenville	24.1%	24.1%	24.4%	19.4%	26.6%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

High Point Building Inspections

Fiscal Year 2015–16

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 $1,074,836 for the fiscal year. 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 earlier broad downturn in the economy had reduced building activity and the number of requests for inspections.

Municipal Profile

Population Served	112,783
Land Area Inspected (Square Miles)	58.86
Persons per Square Mile	1,916
Estimated Tax Base in Service Area (billions)	$9.31
Median Family Income U.S. Census 2010	$49,720

Service Profile

FTE Inspectors	
Building	3.5
Electrical	2.5
Mechanical	2.5
Plumbing	2.5
All Trades	0.0
Total Inspectors	11.0
FTE Plan Reviewers	2.5
Other FTE Positions	7.0
Total of All Positions	20.5
Number of Inspections by Type	
Building	8,950
Electrical	6,654
Mechanical	5,669
Plumbing	3,620
TOTAL	24,893
Building Permit Values	
Residential	$34,324,421
Multi-Family	with commericial
Commercial	$99,677,067
TOTAL	$134,001,488
Inspection Fee Revenue	$1,074,836

Full Cost Profile

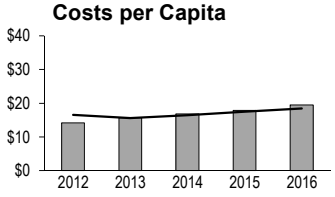
Cost Breakdown by Percentage	
Personal Services	73.0%
Operating Costs	23.6%
Capital Costs	3.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,606,625
Operating Costs	$518,812
Capital Costs	$74,918
TOTAL	$2,200,355

High Point Building Inspections

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

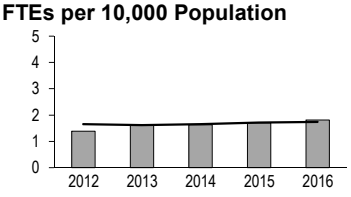
Resource Measures

Building Inspections Services Costs per Capita



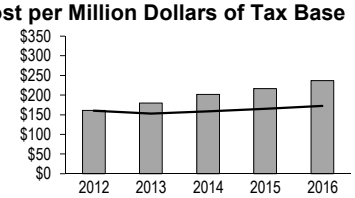
	2012	2013	2014	2015	2016
High Point	$14.18	$15.64	$16.81	$17.85	$19.51
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	1.38	1.62	1.63	1.70	1.82
Average	1.65	1.62	1.66	1.72	1.75

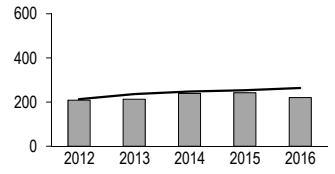
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
High Point	$161	$179	$202	$216	$236
Average	$160	$153	$159	$165	$172

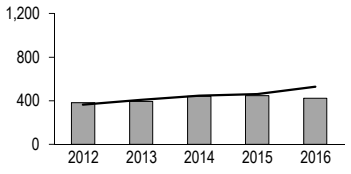
Workload Measures

Inspections per 1,000 Population in Service Area



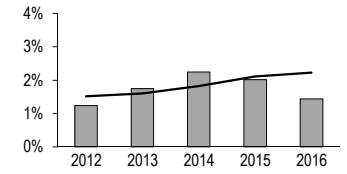
	2012	2013	2014	2015	2016
High Point	209	213	240	243	221
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



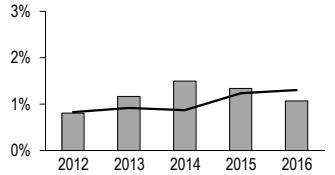
	2012	2013	2014	2015	2016
High Point	382	393	441	447	423
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



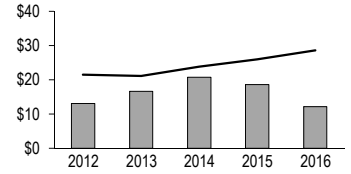
	2012	2013	2014	2015	2016
High Point	1.23%	1.75%	2.25%	2.01%	1.44%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
High Point	0.80%	1.17%	1.50%	1.34%	1.07%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

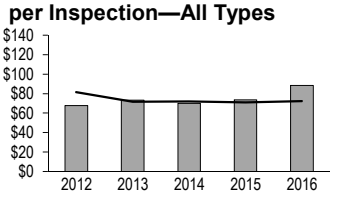
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
High Point	$13.1	$16.7	$20.7	$18.6	$12.2
Average	$21.5	$21.2	$23.8	$25.9	$28.6

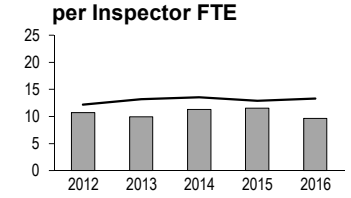
Efficiency Measures

Building Services Cost per Inspection—All Types



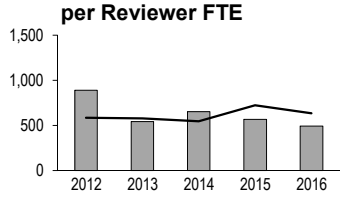
	2012	2013	2014	2015	2016
High Point	$67.87	$73.31	$70.04	$73.58	$88.39
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
High Point	10.7	9.9	11.3	11.5	9.6
Average	12.2	13.2	13.5	12.9	13.3

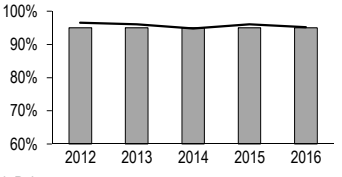
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
High Point	890	544	653	568	494
Average	587	579	548	724	634

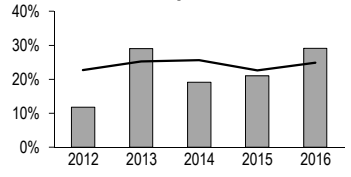
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
High Point	95.0%	95.0%	95.0%	95.0%	95.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
High Point	11.8%	29.0%	19.1%	21.0%	29.1%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Raleigh Building Inspections

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Raleigh conducts building inspections through its Building and Safety Division of the Development Services Department. The Development Services Department serves the entire jurisdictional territory of the City of Raleigh

Inspection services are currently provided by inspectors specializing in each of the major service trades as well as inspectors who cover all trades. A staff of plan reviewers and support specialists further the work in the Division.

It is the policy of the inspection work team to respond to an inspection request within twenty-four hours for each type of construction. Most inspections are completed within one day of a request.

Total revenue received from inspection fees was $7,231,836 for the fiscal year. Inspection and permit fees depend on the type of construction or work, the value of construction, and other factors. Reinspections are not charged for the first time. Reinspections of the same inspection item that has failed for a second time are subject to a reinspection fee.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

The permit value of multi-family building projects is included in the totals for commercial projects.

Municipal Profile

Population Served	615,035
Land Area Inspected (Square Miles)	289.16
Persons per Square Mile	2,127
Estimated Tax Base in Service Area (billions)	$76.33
Median Family Income U.S. Census 2010	$68,678

Service Profile

FTE Inspectors	
Building	9.0
Electrical	9.0
Mechanical	7.0
Plumbing	7.0
All Trades	5.0
Total Inspectors	37.0
FTE Plan Reviewers	12.0
Other FTE Positions	21.0
Total of All Positions	70.0
Number of Inspections by Type	
Building	29,243
Electrical	36,643
Mechanical	29,523
Plumbing	21,940
TOTAL	117,349
Building Permit Values	
Residential	$799,966,550
Multi-Family	with commercial
Commercial	$902,652,550
TOTAL	$1,702,619,100
Inspection Fee Revenue	$7,231,836

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	68.1%
Operating Costs	23.1%
Capital Costs	8.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,899,477
Operating Costs	$1,664,132
Capital Costs	$629,322
TOTAL	$7,192,931

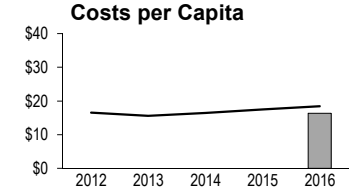
Raleigh

Building Inspections

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

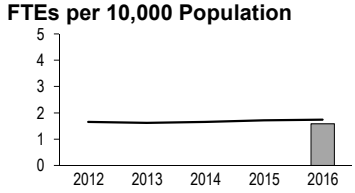
Resource Measures

Building Inspections Services Costs per Capita



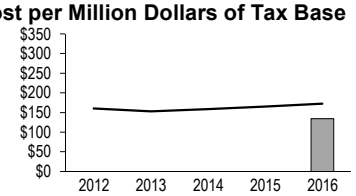
	2012	2013	2014	2015	2016
Raleigh					$16.32
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					1.59
Average	1.65	1.62	1.66	1.72	1.75

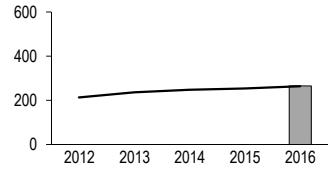
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Raleigh					$134
Average	$160	$153	$159	$165	$172

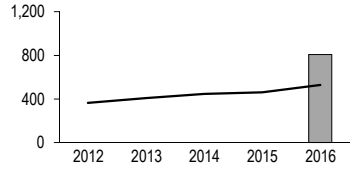
Workload Measures

Inspections per 1,000 Population in Service Area



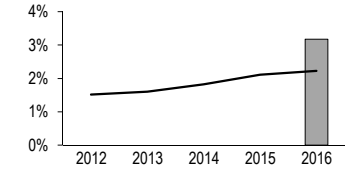
	2012	2013	2014	2015	2016
Raleigh					266
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



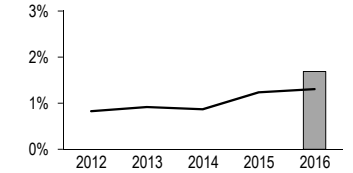
	2012	2013	2014	2015	2016
Raleigh					808
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



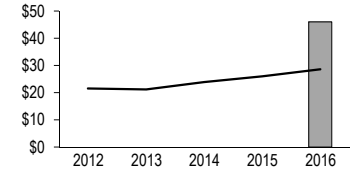
	2012	2013	2014	2015	2016
Raleigh					3.18%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Raleigh					1.68%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

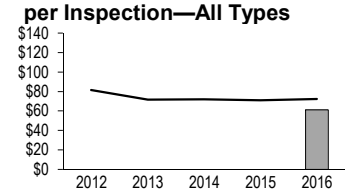
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Raleigh					$46.0
Average	$21.5	$21.2	$23.8	$25.9	$28.6

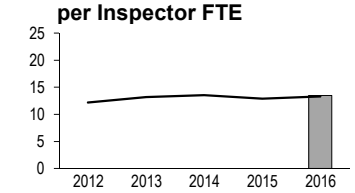
Efficiency Measures

Building Services Cost per Inspection—All Types



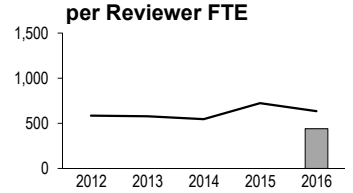
	2012	2013	2014	2015	2016
Raleigh					$61.30
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Raleigh					13.5
Average	12.2	13.2	13.5	12.9	13.3

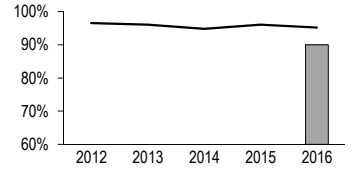
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Raleigh					439
Average	587	579	548	724	634

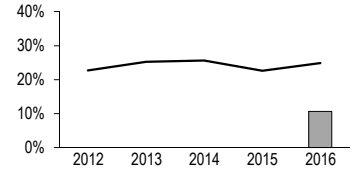
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Raleigh					90.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Raleigh					10.7%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Wilson — Building Inspections

Fiscal Year 2015–16

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 $336,455 for FY 2015–16. 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.

Municipal Profile

Population Served	56,258
Land Area Inspected (Square Miles)	61.87
Persons per Square Mile	909
Estimated Tax Base in Service Area (billions)	$4.85
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	3.0
Total Inspectors	3.0
FTE Plan Reviewers	1.0
Other FTE Positions	2.0
Total of All Positions	6.0
Number of Inspections by Type	
Building	2,326
Electrical	1,812
Mechanical	1,959
Plumbing	984
TOTAL	7,081
Building Permit Values	
Residential	$19,100,355
Multi-Family	na
Commercial	$37,604,606
TOTAL	$56,704,961
Inspection Fee Revenue	$336,455

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	74.7%
Operating Costs	19.0%
Capital Costs	6.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$554,507
Operating Costs	$141,348
Capital Costs	$46,243
TOTAL	$742,098

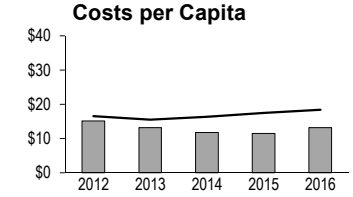
Wilson

Building Inspections

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

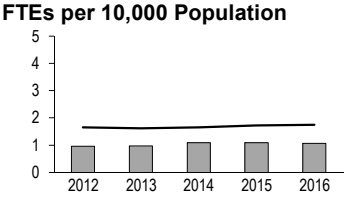
Resource Measures

Building Inspections Services Costs per Capita



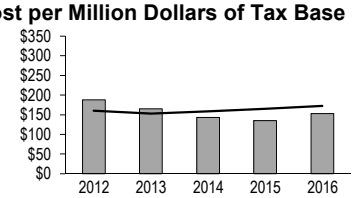
	2012	2013	2014	2015	2016
Wilson	$15.11	$13.19	$11.78	$11.52	$13.19
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	0.97	0.97	1.09	1.09	1.07
Average	1.65	1.62	1.66	1.72	1.75

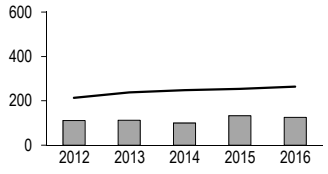
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Wilson	$188	$165	$143	$135	$153
Average	$160	$153	$159	$165	$172

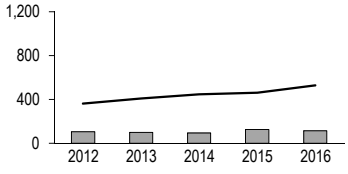
Workload Measures

Inspections per 1,000 Population in Service Area



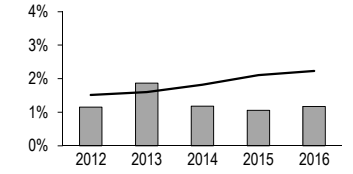
	2012	2013	2014	2015	2016
Wilson	111	114	101	133	126
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



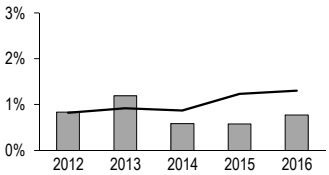
	2012	2013	2014	2015	2016
Wilson	106	99	95	125	114
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



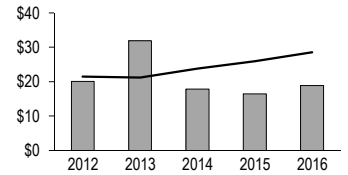
	2012	2013	2014	2015	2016
Wilson	1.16%	1.87%	1.18%	1.05%	1.17%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Wilson	0.83%	1.19%	0.58%	0.58%	0.78%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

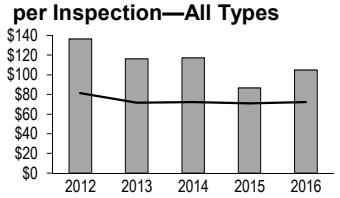
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Wilson	$20.0	$31.9	$17.8	$16.5	$18.9
Average	$21.5	$21.2	$23.8	$25.9	$28.6

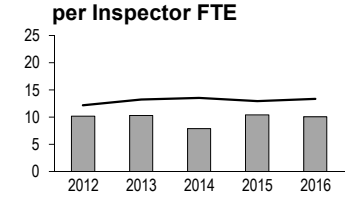
Efficiency Measures

Building Services Cost per Inspection—All Types



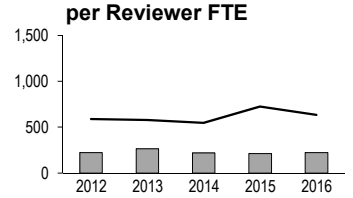
	2012	2013	2014	2015	2016
Wilson	$136.23	$116.09	$117.19	$86.64	$104.80
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Wilson	10.2	10.3	7.8	10.4	10.0
Average	12.2	13.2	13.5	12.9	13.3

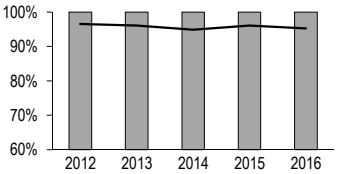
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Wilson	224	265	221	211	222
Average	587	579	548	724	634

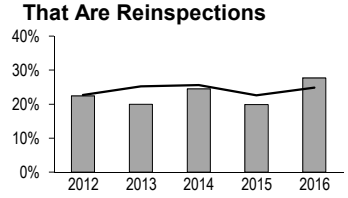
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Wilson	100.0%	100.0%	100.0%	100.0%	100.0%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Wilson	22.4%	19.9%	24.5%	19.9%	27.7%
Average	22.7%	25.2%	25.6%	22.6%	24.8%

Winston-Salem Building Inspections

Fiscal Year 2015–16

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 $4.01 million for FY 2015–16. 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

Municipal Profile

Population Served	342,332
Land Area Inspected (Square Miles)	392.71
Persons per Square Mile	872
Estimated Tax Base in Service Area (billions)	$30.22
Median Family Income U.S. Census 2010	$51,491

Service Profile

FTE Inspectors	
Building	4.0
Electrical	4.0
Mechanical	5.0
Plumbing	3.0
All Trades	0.0
Total Inspectors	16.0
FTE Plan Reviewers	4.0
Other FTE Positions	23.0
Total of All Positions	43.0
Number of Inspections by Type	
Building	16,841
Electrical	12,197
Mechanical	18,805
Plumbing	11,943
TOTAL	59,786
Building Permit Values	
Residential	$212,999,696
Multi-Family	with residential
Commercial	$321,736,673
TOTAL	$534,736,369
Inspection Fee Revenue	$4,008,381

Full Cost Profile

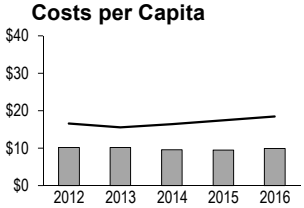
Cost Breakdown by Percentage	
Personal Services	63.7%
Operating Costs	31.2%
Capital Costs	5.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,165,052
Operating Costs	$1,060,750
Capital Costs	$172,024
TOTAL	$3,397,826

Winston-Salem Building Inspections

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

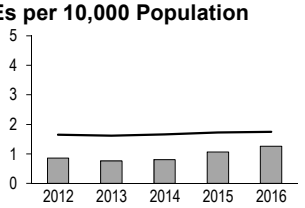
Resource Measures

Building Inspections Services Costs per Capita



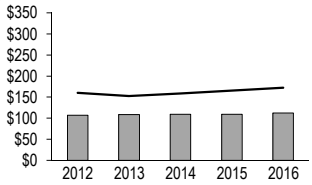
	2012	2013	2014	2015	2016
Winston-Salem	$10.15	$10.20	$9.62	$9.52	$9.93
Average	$16.56	$15.54	$16.41	$17.49	$18.46

Building Inspections Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	0.86	0.76	0.80	1.06	1.26
Average	1.65	1.62	1.66	1.72	1.75

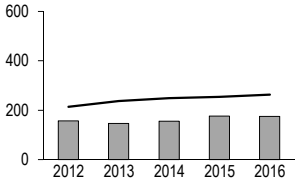
Building Inspections Services Cost per Million Dollars of Tax Base



	2012	2013	2014	2015	2016
Winston-Salem	$107	$109	$110	$109	$112
Average	$160	$153	$159	$165	$172

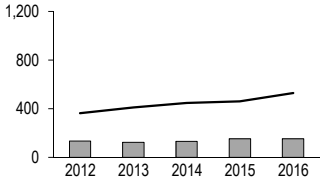
Workload Measures

Inspections per 1,000 Population in Service Area



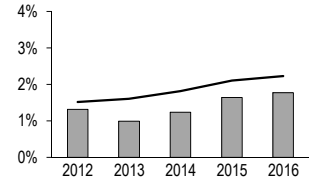
	2012	2013	2014	2015	2016
Winston-Salem	157	147	156	176	175
Average	214	238	248	255	264

Inspections per Square Mile in Service Area



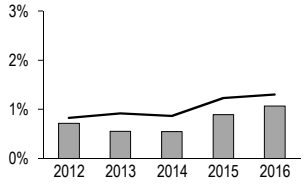
	2012	2013	2014	2015	2016
Winston-Salem	133	124	133	151	152
Average	364	410	448	461	530

Value of Building Permits as Percentage of Tax Base of Area Served



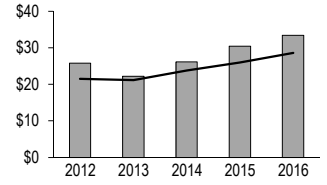
	2012	2013	2014	2015	2016
Winston-Salem	1.32%	0.99%	1.24%	1.64%	1.77%
Average	1.51%	1.60%	1.82%	2.11%	2.23%

Value of Commercial Permits as Percentage of Tax Base of Area Served



	2012	2013	2014	2015	2016
Winston-Salem	0.72%	0.55%	0.55%	0.89%	1.06%
Average	0.82%	0.92%	0.87%	1.23%	1.30%

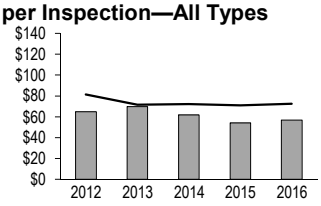
Value of Building Permits per Inspector FTE in Millions of Dollars



	2012	2013	2014	2015	2016
Winston-Salem	$25.8	$22.2	$26.1	$30.5	$33.4
Average	$21.5	$21.2	$23.8	$25.9	$28.6

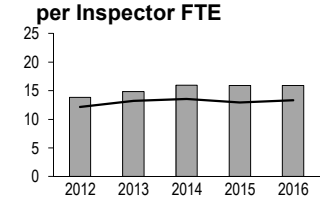
Efficiency Measures

Building Services Cost per Inspection—All Types



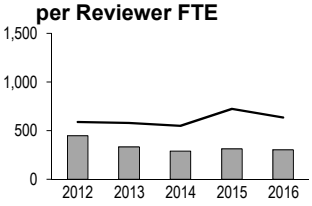
	2012	2013	2014	2015	2016
Winston-Salem	$64.68	$69.57	$61.64	$54.09	$56.83
Average	$81.39	$71.58	$72.12	$70.90	$72.32

Inspections per Day per Inspector FTE



	2012	2013	2014	2015	2016
Winston-Salem	13.8	14.9	16.0	15.9	15.9
Average	12.2	13.2	13.5	12.9	13.3

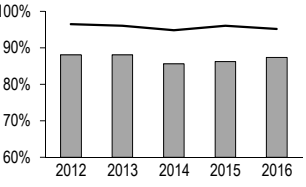
Plan Reviews per Year per Reviewer FTE



	2012	2013	2014	2015	2016
Winston-Salem	447	331	290	312	304
Average	587	579	548	724	634

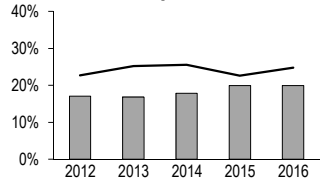
Effectiveness Measures

Percentage of Inspection Responses within One Working Day of Request



	2012	2013	2014	2015	2016
Winston-Salem	88.0%	88.0%	85.7%	86.2%	87.4%
Average	96.5%	96.1%	94.9%	96.0%	95.2%

Percentage of Inspections That Are Reinspections



	2012	2013	2014	2015	2016
Winston-Salem	17.0%	16.8%	17.9%	20.0%	20.0%
Average	22.7%	25.2%	25.6%	22.6%	24.8%


UNC
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Performance and Cost Data

FLEET MAINTENANCE


UNC
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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	396	8.2	2,002	1,091	6	4.0	NA	4.0	General Fund
Asheville	817	7.8	4,935	825	16	9.0	$50-90	1.0	General Fund
Burlington	543	10.8	3,707	2,057	19	8.0	$55—Heavy Equipment $45—Auto/Light Truck $35—Small Engine/Mowers	0.8	General Fund
Cary	790	6.9	5,722	2,356	8	9.0	$60--Light Duty $89--Heavy Duty	NA	Internal Service
Chapel Hill	423	6.3	2,044	1,090	10	6.0	$90.00	3.0	Internal Service
Charlotte	5,150	5.5	35,326	14,330	90	70.8	$70.29	6.3	General Fund
Concord	831	8.0	3,877	1,753	8	7.5	$60.00	11.8	General Fund
Greensboro	1,514	6.7	12,212	5,864	34	32.0	$52.00	4.9	Internal Service
Greenville	650	8.4	4,964	2,036	12	13.0	$60.00	2.2	Internal Service
Hickory	537	12.7	4,986	na	14	6.0	$50.00	5.0	Internal Service
High Point	992	9.1	4,976	2,326	18	10.0	$60.00	5.0	Internal Service
Raleigh	2,598	6.8	13,920	9,912	51	49.0	Heavy&Lead Mech - $65, Motor Mech - $55, Welder - $40, Auto Specialist - $40, Auto Tire-$40, PM Tech - $27	2.4	Internal Service
Salisbury	515	11.0	4,751	1,923	17	10.0	NA	2.1	General Fund
Wilson	829	11.2	7,735	1,214	15	11.0	$44.00	3.2	General Fund
Winston-Salem	1,800	7.4	8,135	2,268	31	16.0	$50.00	2.8	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

Apex Fleet Maintenance

Fiscal Year 2015–16

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

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 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595

Service Profile

FTE Positions—Technician	4.0
FTE Positions—Other	2.0
Work Bays	6

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	7	6.0 Years
Cars—Severe Usage	73	5.0 Years
Light Vehicles	112	8.0 Years
Medium Vehicles	27	10.0 Years
Heavy—Sanitation	0	na
Heavy—Sewer	2	4.0 Years
Heavy—Fire Apparatus	11	13.0 Years
Heavy—Other	22	8.0 Years
Trailed Equipment	86	10.0 Years
Off-Road/Construction/Tractors	56	9.0 Years
Buses	0	na
TOTAL	396	

Vehicle Equivalent Units (VEUs)	1,135
Average Rolling Stock Units Available per Day	346
Hours Billed	6,327
Work Orders	2,002
Repeat Repairs within 30 Days	46
Work Orders Completed within 24 hours	1,396
Preventive Maintenance Jobs (PMs)	1,091
PMs Completed as Scheduled	1,001

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	38.7%
Operating Costs	53.1%
Capital Costs	8.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$329,121
Operating Costs	$451,244
Capital Costs	$69,554
TOTAL	$849,918

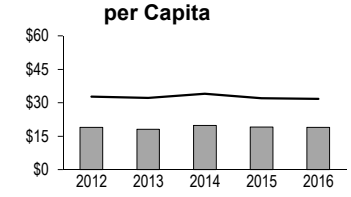
Apex

Fleet Maintenance

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

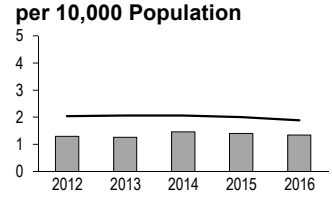
Resource Measures

Fleet Maintenance Services Cost per Capita



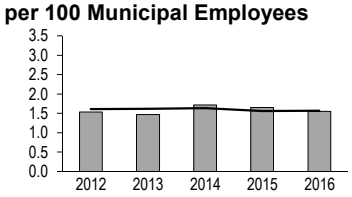
	2012	2013	2014	2015	2016
Apex	$19.00	$18.13	$19.75	$19.12	$18.99
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	1.29	1.26	1.47	1.41	1.34
Average	2.03	2.06	2.06	2.01	1.89

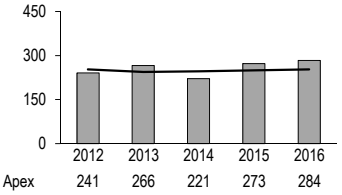
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Apex	1.54	1.47	1.72	1.65	1.55
Average	1.61	1.62	1.63	1.56	1.57

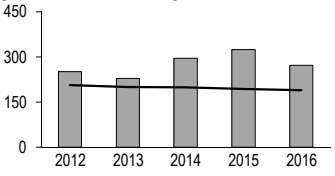
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Apex	241	266	221	273	284
Average	253	244	246	250	253

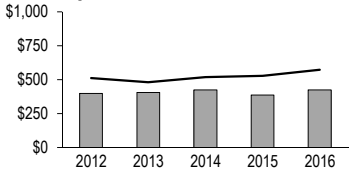
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Apex	252	229	297	325	273
Average	207	200	199	194	190

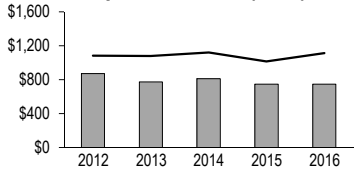
Efficiency Measures

Fleet Maintenance Cost per Work Order



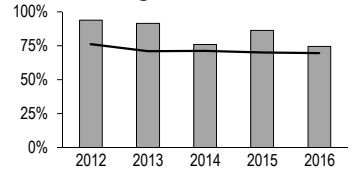
	2012	2013	2014	2015	2016
Apex	$400	$405	$425	$388	$425
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Apex	$871	$775	$812	$747	$749
Average	$1,085	$1,078	$1,123	$1,015	$1,116

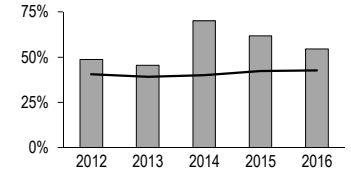
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Apex	94%	92%	76%	86%	74%
Average	76%	71%	71%	70%	70%

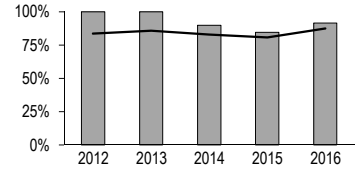
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



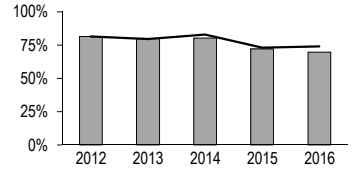
	2012	2013	2014	2015	2016
Apex	49%	46%	70%	62%	54%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



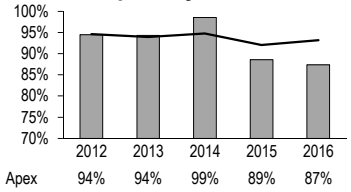
	2012	2013	2014	2015	2016
Apex	100%	100%	90%	85%	92%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



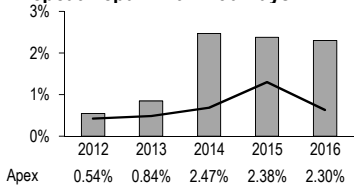
	2012	2013	2014	2015	2016
Apex	82%	80%	81%	72%	70%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Apex	94%	94%	99%	89%	87%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Apex	0.54%	0.84%	2.47%	2.38%	2.30%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Asheville — Fleet Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Fleet Management is a division of the Asheville General Services 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 range from $50 to $90-an-hour labor rate, a 30 percent markup on parts stocked and a 5 percent makrup on parts immediately installed, 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
- paint and body repairs
- tire repairs on trucks over one ton
- major hydraulic cylinder 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, sick leave, and time for training. Therefore this percentage should not be expected to be near 100 percent.

In addition to rolling stock, Asheville's fleet services has maintenance responsibilities for other pieces of equipment, including snow plows, sand spreaders, a curb builder, and other city equipment.

Municipal Profile

Population (OSBM 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997

Service Profile

FTE Positions—Technician	9.0
FTE Positions—Other	7.0
Work Bays	16

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	69	7.0 Years
Cars—Severe Usage	266	5.0 Years
Light Vehicles	147	8.0 Years
Medium Vehicles	68	8.0 Years
Heavy—Sanitation	21	6.0 Years
Heavy—Sewer	3	7.0 Years
Heavy—Fire Apparatus	26	15.0 Years
Heavy—Other	23	9.0 Years
Trailed Equipment	119	11.0 Years
Off-Road/Construction/Tractors	75	11.0 Years
Buses	0	na
TOTAL	817	

Vehicle Equivalent Units (VEUs)	2,606
Average Rolling Stock Units Available per Day	781
Hours Billed	7,365
Work Orders	4,935
Repeat Repairs within 30 Days	60
Work Orders Completed within 24 hours	1,064
Preventive Maintenance Jobs (PMs)	825
PMs Completed as Scheduled	763

Full Cost Profile

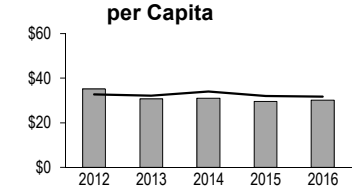
Cost Breakdown by Percentage	
Personal Services	29.0%
Operating Costs	66.7%
Capital Costs	4.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$795,831
Operating Costs	$1,828,017
Capital Costs	$116,440
TOTAL	$2,740,288

Asheville — Fleet Maintenance

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

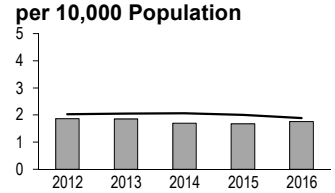
Resource Measures

Fleet Maintenance Services Cost per Capita



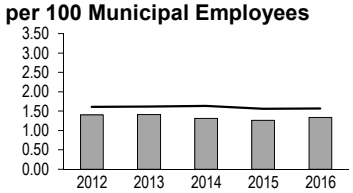
	2012	2013	2014	2015	2016
Asheville	$35.16	$30.74	$31.07	$29.57	$30.14
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	1.87	1.86	1.70	1.68	1.76
Average	2.03	2.06	2.06	2.01	1.89

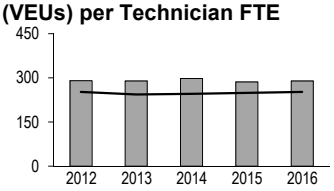
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Asheville	1.40	1.41	1.31	1.26	1.33
Average	1.61	1.62	1.63	1.56	1.57

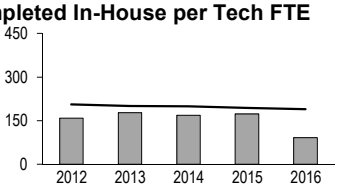
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Asheville	290	289	298	287	290
Average	253	244	246	250	253

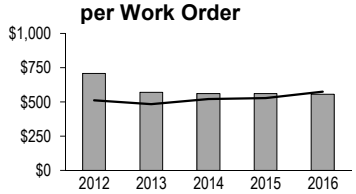
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Asheville	159	177	168	173	92
Average	207	200	199	194	190

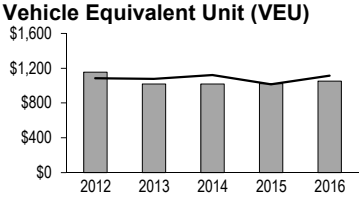
Efficiency Measures

Fleet Maintenance Cost per Work Order



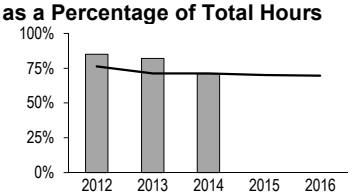
	2012	2013	2014	2015	2016
Asheville	$708	$571	$560	$560	$555
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Asheville	$1,153	$1,019	$1,018	$1,023	$1,051
Average	$1,085	$1,078	$1,123	$1,015	$1,116

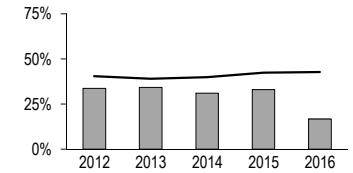
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Asheville	85%	82%	71%		
Average	76%	71%	71%	70%	70%

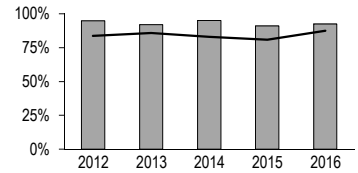
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



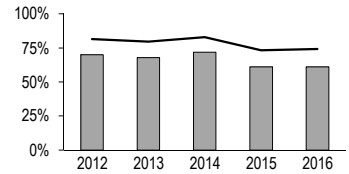
	2012	2013	2014	2015	2016
Asheville	34%	34%	31%	33%	17%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



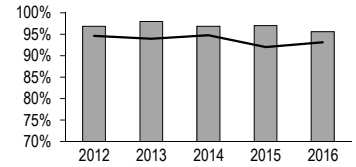
	2012	2013	2014	2015	2016
Asheville	95%	92%	95%	91%	92%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



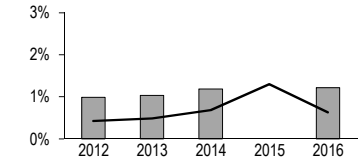
	2012	2013	2014	2015	2016
Asheville	70%	68%	72%	61%	61%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Asheville	97%	98%	97%	97%	96%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Asheville	0.99%	1.03%	1.19%		1.22%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Burlington Fleet Maintenance

Fiscal Year 2015–16

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:

- body work
- 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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711

Service Profile

FTE Positions—Technician	8.0
FTE Positions—Other	6.0
Work Bays	19

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	50	8.1 Years
Cars—Severe Usage	100	6.7 Years
Light Vehicles	162	8.6 Years
Medium Vehicles	42	13.2 Years
Heavy—Sanitation	23	7.7 Years
Heavy—Sewer	4	8.6 Years
Heavy—Fire Apparatus	11	6.9 Years
Heavy—Other	4	12.1 Years
Trailed Equipment	97	17.9 Years
Off-Road/Construction/Tractors	47	15.3 Years
Buses	3	12.0 Years
TOTAL	543	

Vehicle Equivalent Units (VEUs)	1,666
Average Rolling Stock Units Available per Day	473
Hours Billed	9,813
Work Orders	3,707
Repeat Repairs within 30 Days	1
Work Orders Completed within 24 hours	2,337
Preventive Maintenance Jobs (PMs)	2,057
PMs Completed as Scheduled	821

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	44.2%
Operating Costs	52.0%
Capital Costs	3.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$711,165
Operating Costs	$836,481
Capital Costs	$61,834
TOTAL	$1,609,480

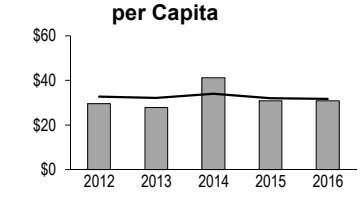
Burlington

Fleet Maintenance

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

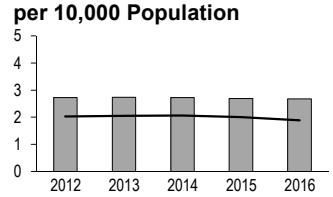
Resource Measures

Fleet Maintenance Services Cost per Capita



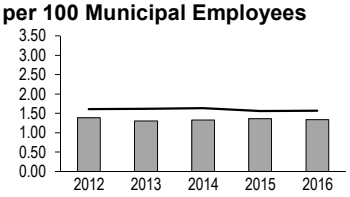
	2012	2013	2014	2015	2016
Burlington	$29.57	$27.90	$41.24	$30.87	$30.81
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	2.73	2.73	2.72	2.70	2.68
Average	2.03	2.06	2.06	2.01	1.89

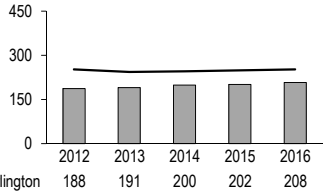
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Burlington	1.39	1.30	1.33	1.36	1.34
Average	1.61	1.62	1.63	1.56	1.57

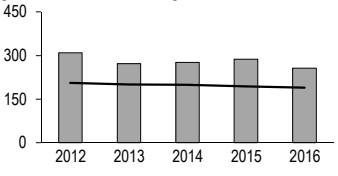
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Burlington	188	191	200	202	208
Average	253	244	246	250	253

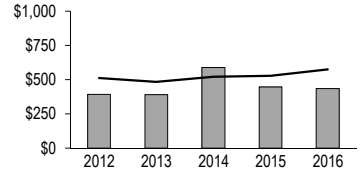
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Burlington	309	272	276	288	257
Average	207	200	199	194	190

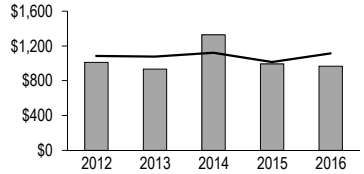
Efficiency Measures

Fleet Maintenance Cost per Work Order



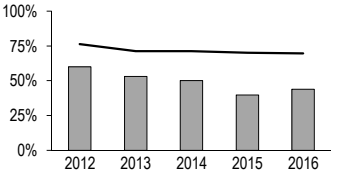
	2012	2013	2014	2015	2016
Burlington	$392	$389	$588	$446	$434
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Burlington	$1,010	$935	$1,327	$992	$966
Average	$1,085	$1,078	$1,123	$1,015	$1,116

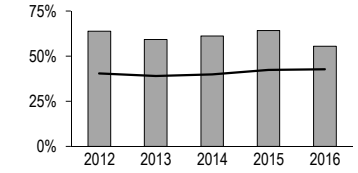
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Burlington	60%	53%	50%	40%	44%
Average	76%	71%	71%	70%	70%

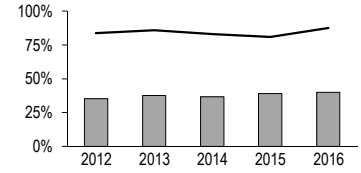
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



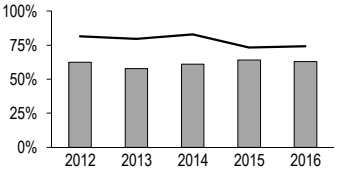
	2012	2013	2014	2015	2016
Burlington	64%	59%	61%	64%	55%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



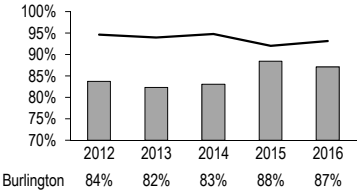
	2012	2013	2014	2015	2016
Burlington	35%	38%	37%	39%	40%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



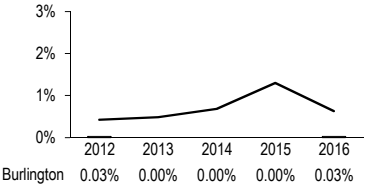
	2012	2013	2014	2015	2016
Burlington	63%	58%	61%	64%	63%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Burlington	84%	82%	83%	88%	87%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Burlington	0.03%	0.00%	0.00%	0.00%	0.03%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Cary Fleet Maintenance

Fiscal Year 2015–16

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 light duty vehicles and $89 on heavy duty plus a 22 percent markup on parts sold. A flat fee of $22 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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703

Service Profile

FTE Positions—Technician	9.0
FTE Positions—Other	3.0
Work Bays	8

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	41	9.0 Years
Cars—Severe Usage	133	5.0 Years
Light Vehicles	253	7.0 Years
Medium Vehicles	44	7.0 Years
Heavy—Sanitation	33	6.0 Years
Heavy—Sewer	4	7.0 Years
Heavy—Fire Apparatus	23	1.0 Years
Heavy—Other	15	9.0 Years
Trailed Equipment	81	8.0 Years
Off-Road/Construction/Tractors	163	8.0 Years
Buses	0	na
TOTAL	790	

Vehicle Equivalent Units (VEUs)	2,740
Average Rolling Stock Units Available per Day	779
Hours Billed	10,995
Work Orders	5,722
Repeat Repairs within 30 Days	3
Work Orders Completed within 24 hours	4,452
Preventive Maintenance Jobs (PMs)	2,356
PMs Completed as Scheduled	2,103

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	25.7%
Operating Costs	65.7%
Capital Costs	8.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$907,169
Operating Costs	$2,323,591
Capital Costs	$305,857
TOTAL	$3,536,617

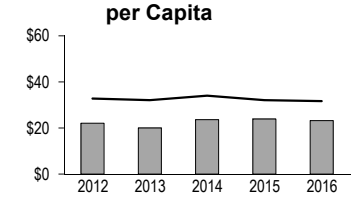
Cary

Fleet Maintenance

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

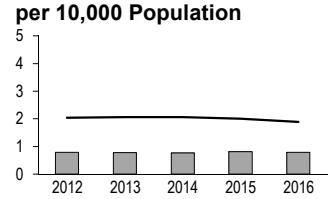
Resource Measures

Fleet Maintenance Services Cost per Capita



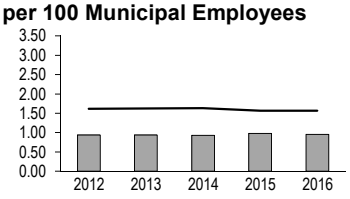
	2012	2013	2014	2015	2016
Cary	$22.13	$20.00	$23.70	$23.90	$23.17
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	0.79	0.77	0.76	0.81	0.79
Average	2.03	2.06	2.06	2.01	1.89

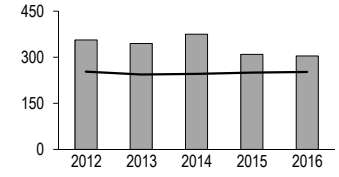
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Cary	0.94	0.93	0.93	0.98	0.95
Average	1.61	1.62	1.63	1.56	1.57

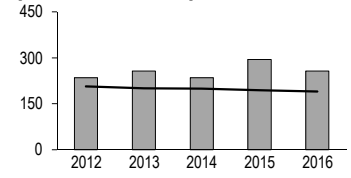
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Cary	356	345	375	309	304
Average	253	244	246	250	253

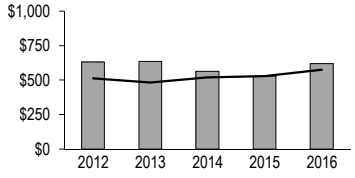
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Cary	235	257	235	295	257
Average	207	200	199	194	190

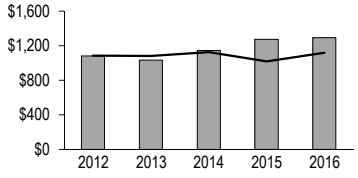
Efficiency Measures

Fleet Maintenance Cost per Work Order



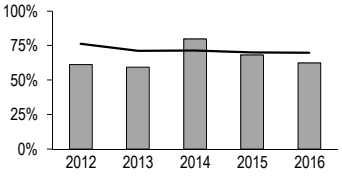
	2012	2013	2014	2015	2016
Cary	$630	$636	$564	$530	$618
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Cary	$1,081	$1,032	$1,141	$1,273	$1,291
Average	$1,085	$1,078	$1,123	$1,015	$1,116

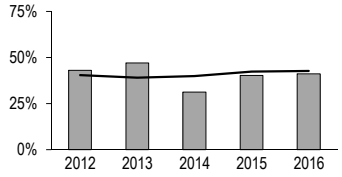
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Cary	61%	59%	80%	68%	62%
Average	76%	71%	71%	70%	70%

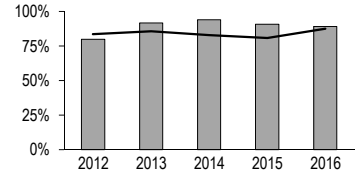
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



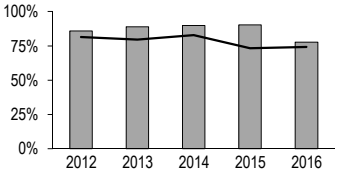
	2012	2013	2014	2015	2016
Cary	43%	47%	31%	40%	41%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



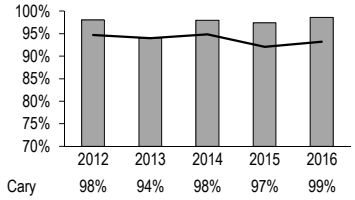
	2012	2013	2014	2015	2016
Cary	80%	92%	94%	91%	89%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



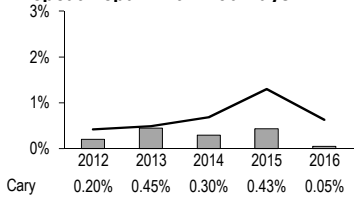
	2012	2013	2014	2015	2016
Cary	86%	89%	90%	90%	78%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Cary	98%	94%	98%	97%	99%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Cary	0.20%	0.45%	0.30%	0.43%	0.05%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Chapel Hill — Fleet Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill provides fleet maintenance through the Fleet Management Program in the Public Works Department Administration Division. The program is operated as an internal service fund charging departments for services.

A labor rate of $90 per hour is charged for maintenance work. Additionally, a parts markup of 20 percent is applied to the cost of parts and a 10 percent markup is charged for overseeing sublet work.

The town contracted out some maintenance services during the fiscal year, including towing, body work, lift truck inspections, and parts inventory. The overall turnover in parts was estimated at three times per year.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Chapel Hill improved its tracking of repeat repairs to more closely follow the benchmarking directions of repairs to the same component as opposed to repairs to address the same complaint.

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. There was a large degree of turnover in the shop during the prior year with a full complement only reached at the start of FY 2015–16.

In Chapel Hill the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" includes varying standards depending on the work but must occur within thirty days of the scheduled date, within the scheduled month, or within mileage parameters.

In addition to rolling stock, Chapel Hill's fleet services had maintenance responsibilities for generators, light towers, mowers, weed wackers, leaf blowers, leaf vaccum machines, and sign towers.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815

Service Profile

FTE Positions—Technician	6.00
FTE Positions—Other	1.75
Work Bays	10

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	121	6.1 Years
Cars—Severe Usage	62	5.7 Years
Light Vehicles	34	6.4 Years
Medium Vehicles	87	7.0 Years
Heavy—Sanitation	23	6.5 Years
Heavy—Sewer	1	7.2 Years
Heavy—Fire Apparatus	12	9.5 Years
Heavy—Other	21	7.1 Years
Trailed Equipment	38	1.7 Years
Off-Road/Construction/Tractors	24	10.5 Years
Buses	0	na
TOTAL	423	

Vehicle Equivalent Units (VEUs)	1,512
Average Rolling Stock Units Available per Day	377
Hours Billed	9,216
Work Orders	2,044
Repeat Repairs within 30 Days	22
Work Orders Completed within 24 hours	1,880
Preventive Maintenance Jobs (PMs)	1,090
PMs Completed as Scheduled	994

Full Cost Profile

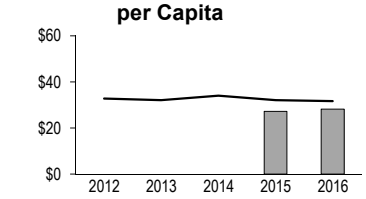
Cost Breakdown by Percentage	
Personal Services	31.5%
Operating Costs	55.0%
Capital Costs	13.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$529,773
Operating Costs	$926,045
Capital Costs	$227,908
TOTAL	$1,683,726

Chapel Hill — Fleet Maintenance

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

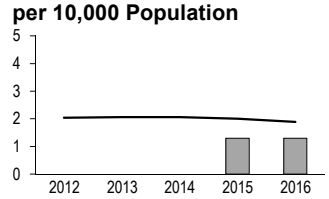
Resource Measures

Fleet Maintenance Services Cost per Capita



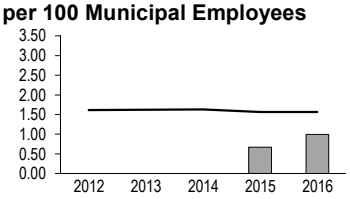
	2012	2013	2014	2015	2016
Chapel Hill				$27.20	$28.25
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				1.30	1.30
Average	2.03	2.06	2.06	2.01	1.89

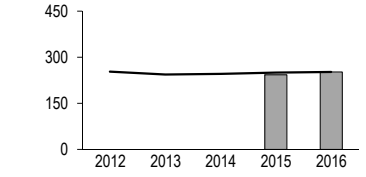
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Chapel Hill				0.67	0.99
Average	1.61	1.62	1.63	1.56	1.57

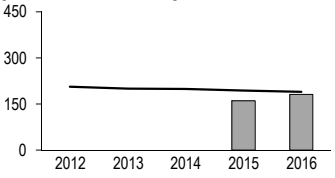
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Chapel Hill				243	252
Average	253	244	246	250	253

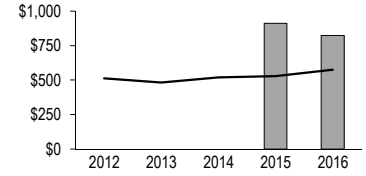
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Chapel Hill				160	182
Average	207	200	199	194	190

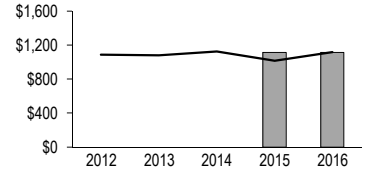
Efficiency Measures

Fleet Maintenance Cost per Work Order



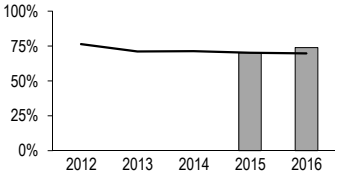
	2012	2013	2014	2015	2016
Chapel Hill				$911	$824
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Chapel Hill				$1,113	$1,114
Average	$1,085	$1,078	$1,123	$1,015	$1,116

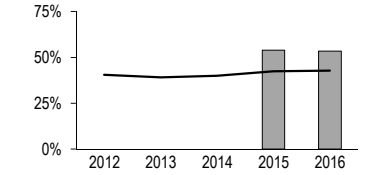
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Chapel Hill				70%	74%
Average	76%	71%	71%	70%	70%

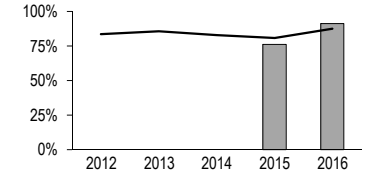
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



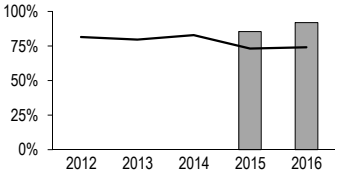
	2012	2013	2014	2015	2016
Chapel Hill				54%	53%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



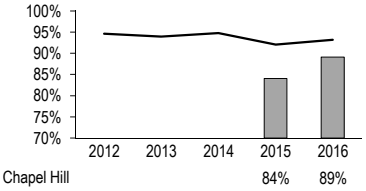
	2012	2013	2014	2015	2016
Chapel Hill				76%	91%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



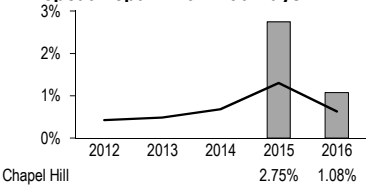
	2012	2013	2014	2015	2016
Chapel Hill				86%	92%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Chapel Hill				84%	89%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Chapel Hill				2.75%	1.08%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Charlotte — Fleet Maintenance

Fiscal Year 2015–16

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 $70.29-per-hour labor rate, a 20 percent markup charge on parts sold, and a 20.4 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

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that 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.

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 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 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680

Service Profile

FTE Positions—Technician	70.75
FTE Positions—Other	47.3
Work Bays	90

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	925	4.3 Years
Cars—Severe Usage	642	3.6 Years
Light Vehicles	1,950	4.9 Years
Medium Vehicles	169	9.4 Years
Heavy—Sanitation	147	4.8 Years
Heavy—Sewer	32	5.5 Years
Heavy—Fire Apparatus	98	6.3 Years
Heavy—Other	147	4.8 Years
Trailed Equipment	535	9.5 Years
Off-Road/Construction/Tractors	475	7.8 Years
Buses	30	4.9 Years
TOTAL	5,150	

Vehicle Equivalent Units (VEUs)	14,588
Average Rolling Stock Units Available per Day	4,345
Hours Billed	99,144
Work Orders	35,326
Repeat Repairs within 30 Days	8
Work Orders Completed within 24 hours	20,918
Preventive Maintenance Jobs (PMs)	14,330
PMs Completed as Scheduled	NA

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	40.1%
Operating Costs	58.4%
Capital Costs	1.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,509,582
Operating Costs	$12,396,606
Capital Costs	$330,269
TOTAL	$21,236,457

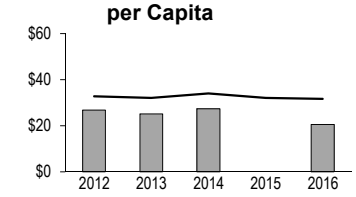
Charlotte

Fleet Maintenance

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

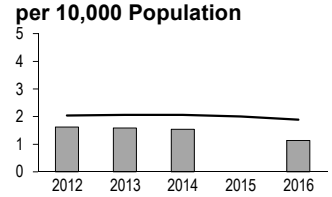
Resource Measures

Fleet Maintenance Services Cost per Capita



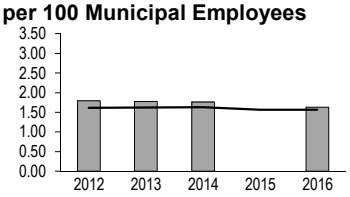
	2012	2013	2014	2015	2016
Charlotte	$26.79	$25.20	$27.44		$20.51
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	1.62	1.59	1.55		1.14
Average	2.03	2.06	2.06	2.01	1.89

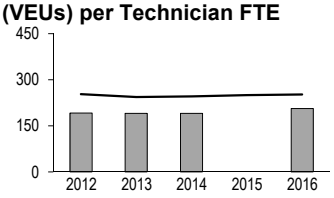
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Charlotte	1.79	1.78	1.76		1.63
Average	1.61	1.62	1.63	1.56	1.57

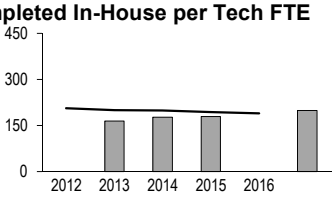
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Charlotte	192	190	191		206
Average	253	244	246	250	253

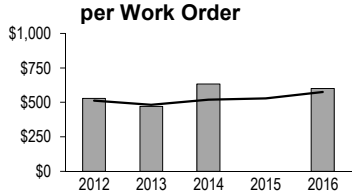
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Charlotte		165	178	179	200
Average	207	200	199	194	190

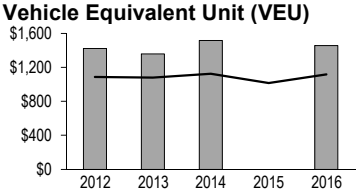
Efficiency Measures

Fleet Maintenance Cost per Work Order



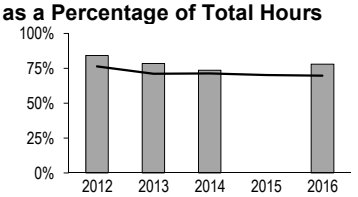
	2012	2013	2014	2015	2016
Charlotte	$529	$471	$633		$601
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Charlotte	$1,421	$1,357	$1,516		$1,456
Average	$1,085	$1,078	$1,123	$1,015	$1,116

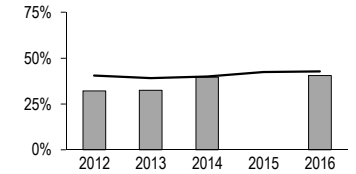
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Charlotte	84%	78%	74%		78%
Average	76%	71%	71%	70%	70%

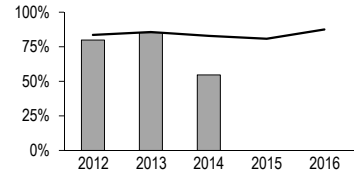
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



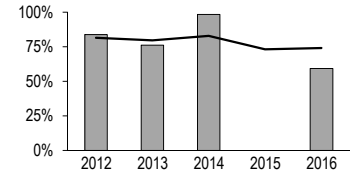
	2012	2013	2014	2015	2016
Charlotte	32%	32%	40%		41%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



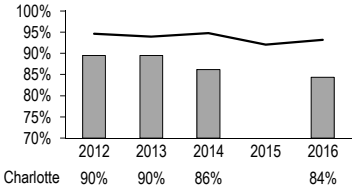
	2012	2013	2014	2015	2016
Charlotte	80%	85%	55%		
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



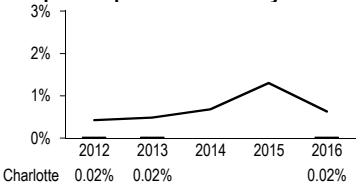
	2012	2013	2014	2015	2016
Charlotte	84%	76%	99%		59%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Charlotte	90%	90%	86%		84%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Charlotte	0.02%	0.02%			0.02%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Concord — Fleet Maintenance

Fiscal Year 2015–16

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.

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.

A drop in repeat repairs was driven by analysis which showed that a large portion of comebacks were due to A/C and charging system issues. Better equipment was purchased for these repairs and a Master Mechanic was hired to do most of the A/C repair work, leading to lower repeat repairs.

Municipal Profile

Population (OSBM 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426

Service Profile

FTE Positions—Technician	7.50
FTE Positions—Other	5.5
Work Bays	8

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	10	10.1 Years
Cars—Severe Usage	179	5.1 Years
Light Vehicles	228	7.2 Years
Medium Vehicles	47	8.9 Years
Heavy—Sanitation	12	5.8 Years
Heavy—Sewer	3	8.6 Years
Heavy—Fire Apparatus	23	11.6 Years
Heavy—Other	58	8.0 Years
Trailed Equipment	162	11.6 Years
Off-Road/Construction/Tractors	93	8.1 Years
Buses	16	6.9 Years
TOTAL	831	

Vehicle Equivalent Units (VEUs)	2,658
Average Rolling Stock Units Available per Day	823
Hours Billed	9,685
Work Orders	3,877
Repeat Repairs within 30 Days	14
Work Orders Completed within 24 hours	3,838
Preventive Maintenance Jobs (PMs)	1,753
PMs Completed as Scheduled	1,679

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	40.8%
Operating Costs	54.6%
Capital Costs	4.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$872,919
Operating Costs	$1,168,422
Capital Costs	$97,818
TOTAL	$2,139,159

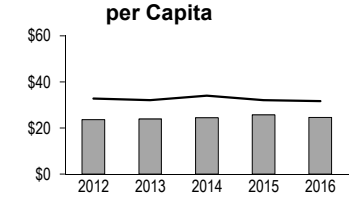
Concord

Fleet Maintenance

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

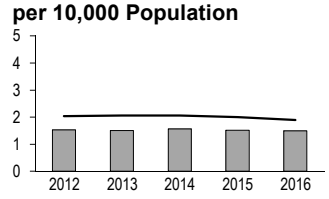
Resource Measures

Fleet Maintenance Services Cost per Capita



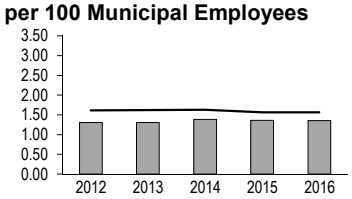
	2012	2013	2014	2015	2016
Concord	$23.58	$23.94	$24.45	$25.66	$24.55
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	1.53	1.50	1.56	1.52	1.49
Average	2.03	2.06	2.06	2.01	1.89

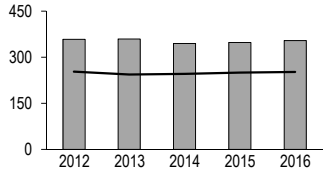
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Concord	1.31	1.31	1.38	1.37	1.35
Average	1.61	1.62	1.63	1.56	1.57

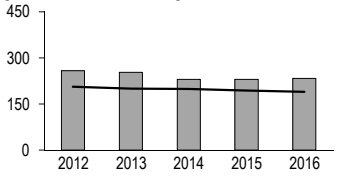
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Concord	358	359	346	348	354
Average	253	244	246	250	253

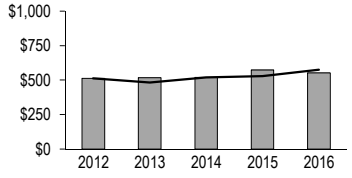
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Concord	259	253	230	230	234
Average	207	200	199	194	190

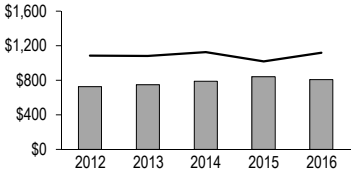
Efficiency Measures

Fleet Maintenance Cost per Work Order



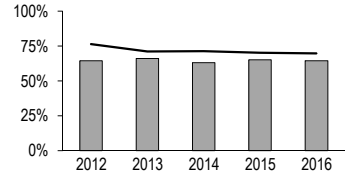
	2012	2013	2014	2015	2016
Concord	$514	$516	$519	$573	$552
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Concord	$725	$748	$786	$839	$805
Average	$1,085	$1,078	$1,123	$1,015	$1,116

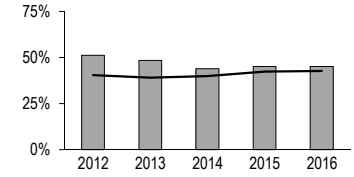
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Concord	64%	66%	63%	65%	64%
Average	76%	71%	71%	70%	70%

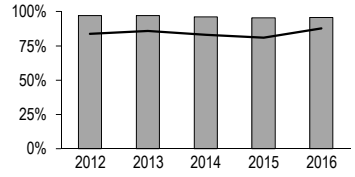
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



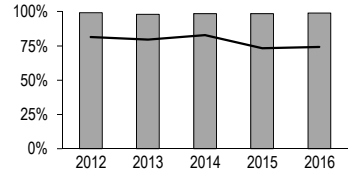
	2012	2013	2014	2015	2016
Concord	51%	49%	44%	45%	45%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



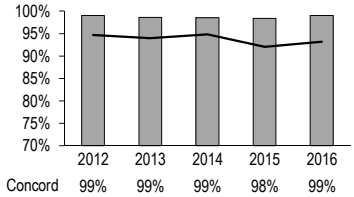
	2012	2013	2014	2015	2016
Concord	97%	97%	96%	96%	96%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



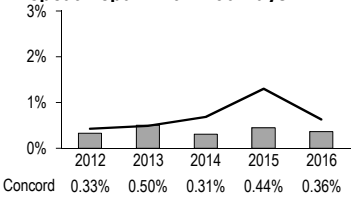
	2012	2013	2014	2015	2016
Concord	99%	98%	99%	98%	99%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Concord	99%	99%	99%	98%	99%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Concord	0.33%	0.50%	0.31%	0.44%	0.36%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Greensboro — Fleet Maintenance

Fiscal Year 2015–16

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 the fiscal year 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.

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 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208

Service Profile

FTE Positions—Technician	32.0
FTE Positions—Other	17.0
Work Bays	34

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	178	4.0 Years
Cars—Severe Usage	338	4.0 Years
Light Vehicles	339	6.0 Years
Medium Vehicles	102	8.5 Years
Heavy—Sanitation	98	6.0 Years
Heavy—Sewer	8	6.0 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	135	8.0 Years
Trailed Equipment	175	12.0 Years
Off-Road/Construction/Tractors	138	9.0 Years
Buses	3	16.0 Years
TOTAL	1,514	

Vehicle Equivalent Units (VEUs)	5,265
Average Rolling Stock Units Available per Day	1,402
Hours Billed	52,509
Work Orders	12,212
Repeat Repairs within 30 Days	34
Work Orders Completed within 24 hours	11,333
Preventive Maintenance Jobs (PMs)	5,864
PMs Completed as Scheduled	5,864

Full Cost Profile

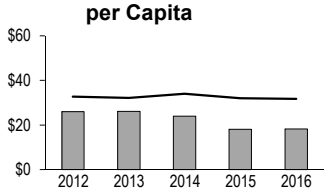
Cost Breakdown by Percentage	
Personal Services	66.0%
Operating Costs	34.0%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,400,835
Operating Costs	$1,752,633
Capital Costs	$0
TOTAL	$5,153,468

Greensboro — Fleet Maintenance

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

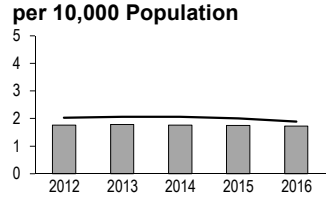
Resource Measures

Fleet Maintenance Services Cost per Capita



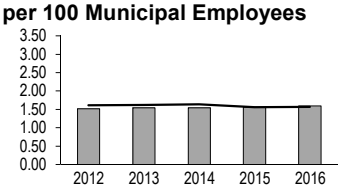
	2012	2013	2014	2015	2016
Greensboro	$26.05	$26.18	$24.03	$18.07	$18.22
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	1.76	1.78	1.76	1.74	1.73
Average	2.03	2.06	2.06	2.01	1.89

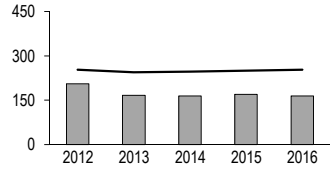
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greensboro	1.51	1.54	1.54	1.56	1.60
Average	1.61	1.62	1.63	1.56	1.57

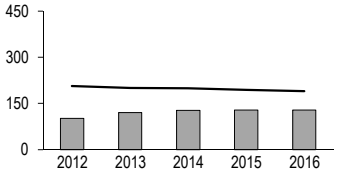
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Greensboro	205	167	165	170	165
Average	253	244	246	250	253

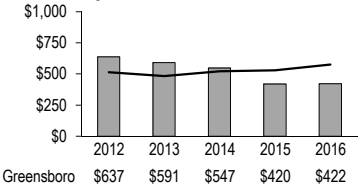
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Greensboro	101	121	127	128	128
Average	207	200	199	194	190

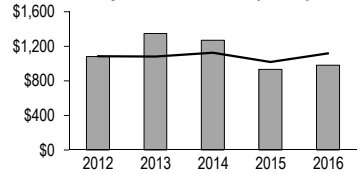
Efficiency Measures

Fleet Maintenance Cost per Work Order



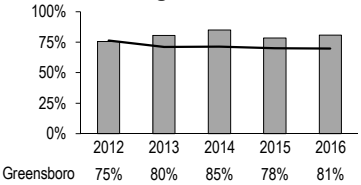
	2012	2013	2014	2015	2016
Greensboro	$637	$591	$547	$420	$422
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Greensboro	$1,080	$1,348	$1,268	$933	$979
Average	$1,085	$1,078	$1,123	$1,015	$1,116

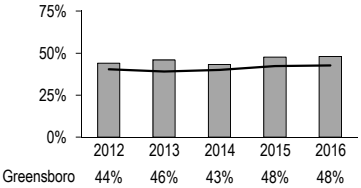
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Greensboro	75%	80%	85%	78%	81%
Average	76%	71%	71%	70%	70%

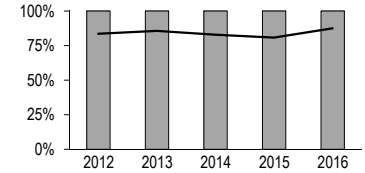
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



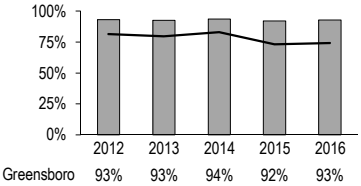
	2012	2013	2014	2015	2016
Greensboro	44%	46%	43%	48%	48%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



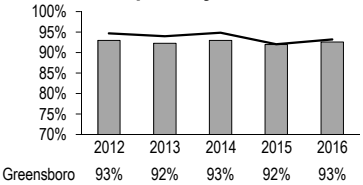
	2012	2013	2014	2015	2016
Greensboro	100%	100%	100%	100%	100%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



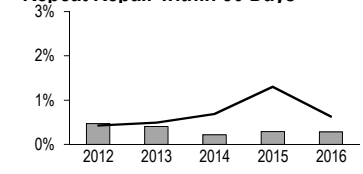
	2012	2013	2014	2015	2016
Greensboro	93%	93%	94%	92%	93%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Greensboro	93%	92%	93%	92%	93%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Greensboro	0.47%	0.40%	0.21%	0.29%	0.28%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Greenville — Fleet Maintenance

Fiscal Year 2015–16

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 15 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 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520

Service Profile

FTE Positions—Technician	13.0
FTE Positions—Other	4.0
Work Bays	12

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	24	10.5 Years
Cars—Severe Usage	165	5.0 Years
Light Vehicles	182	7.8 Years
Medium Vehicles	10	4.2 Years
Heavy—Sanitation	50	4.1 Years
Heavy—Sewer	1	1.1 Years
Heavy—Fire Apparatus	11	9.1 Years
Heavy—Other	33	5.8 Years
Trailed Equipment	122	13.0 Years
Off-Road/Construction/Tractors	38	19.0 Years
Buses	14	8.5 Years
TOTAL	650	

Vehicle Equivalent Units (VEUs)	2,366
Average Rolling Stock Units Available per Day	NA
Hours Billed	18,985
Work Orders	4,964
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	2,036
PMs Completed as Scheduled	NA

Full Cost Profile

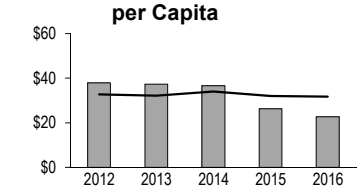
Cost Breakdown by Percentage	
Personal Services	68.4%
Operating Costs	22.9%
Capital Costs	8.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,364,506
Operating Costs	$457,428
Capital Costs	$174,238
TOTAL	$1,996,172

Greenville — Fleet Maintenance

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

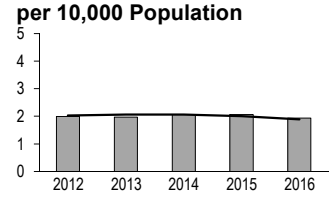
Resource Measures

Fleet Maintenance Services Cost per Capita



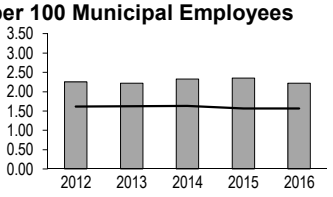
	2012	2013	2014	2015	2016
Greenville	$37.85	$37.41	$36.55	$26.23	$22.69
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	2.00	1.97	2.06	2.06	1.93
Average	2.03	2.06	2.06	2.01	1.89

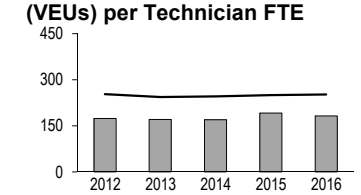
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greenville	2.25	2.22	2.33	2.35	2.22
Average	1.61	1.62	1.63	1.56	1.57

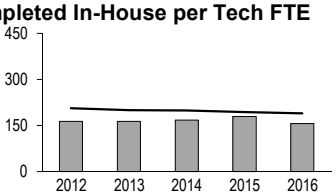
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Greenville	174	171	170	191	182
Average	253	244	246	250	253

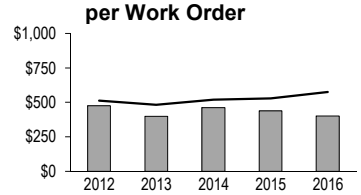
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Greenville	164	164	168	179	157
Average	207	200	199	194	190

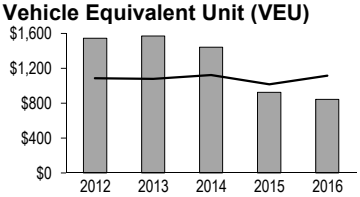
Efficiency Measures

Fleet Maintenance Cost per Work Order



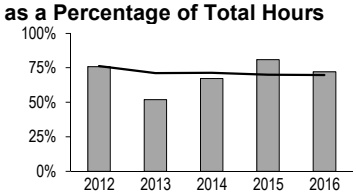
	2012	2013	2014	2015	2016
Greenville	$476	$398	$461	$439	$402
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Greenville	$1,544	$1,571	$1,440	$923	$844
Average	$1,085	$1,078	$1,123	$1,015	$1,116

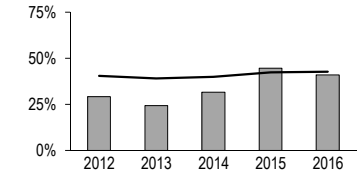
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Greenville	76%	52%	67%	81%	72%
Average	76%	71%	71%	70%	70%

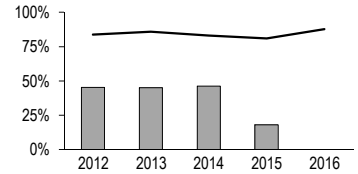
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



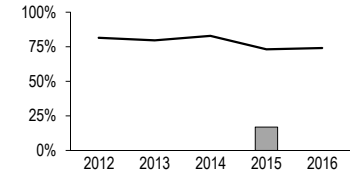
	2012	2013	2014	2015	2016
Greenville	29%	24%	32%	45%	41%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



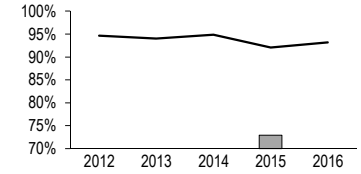
	2012	2013	2014	2015	2016
Greenville	45%	45%	46%	18%	
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



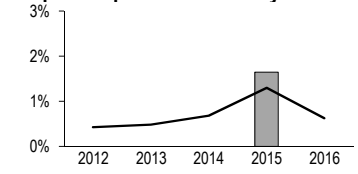
	2012	2013	2014	2015	2016
Greenville				17%	
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Greenville				73%	
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Greenville				1.65%	
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Hickory — Fleet Maintenance

Fiscal Year 2015–16

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 $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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352

Service Profile

FTE Positions—Technician	6.0
FTE Positions—Other	4.0
Work Bays	14

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	20	10.9 Years
Cars—Severe Usage	136	6.9 Years
Light Vehicles	102	9.0 Years
Medium Vehicles	33	13.7 Years
Heavy—Sanitation	29	9.5 Years
Heavy—Sewer	6	8.5 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	16	14.8 Years
Trailed Equipment	56	10.1 Years
Off-Road/Construction/Tractors	139	22.8 Years
Buses	0	NA
TOTAL	537	

Vehicle Equivalent Units (VEUs)	1,874
Average Rolling Stock Units Available per Day	505
Hours Billed	10,520
Work Orders	4,986
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	NA
PMs Completed as Scheduled	NA

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	34.7%
Operating Costs	64.6%
Capital Costs	0.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$556,397
Operating Costs	$1,037,183
Capital Costs	$11,774
TOTAL	$1,605,354

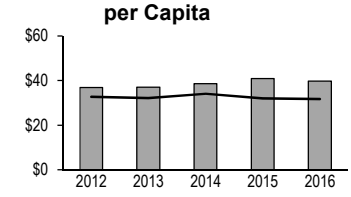
Hickory

Fleet Maintenance

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

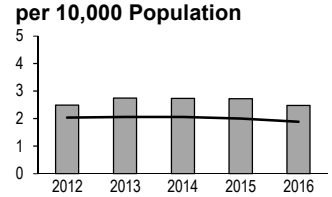
Resource Measures

Fleet Maintenance Services Cost per Capita



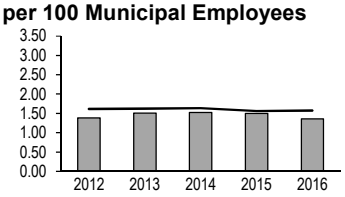
	2012	2013	2014	2015	2016
Hickory	$36.88	$37.00	$38.64	$40.84	$39.78
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	2.49	2.75	2.73	2.73	2.48
Average	2.03	2.06	2.06	2.01	1.89

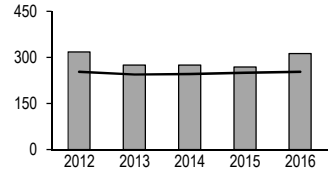
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Hickory	1.38	1.51	1.53	1.50	1.36
Average	1.61	1.62	1.63	1.56	1.57

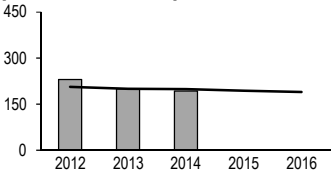
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Hickory	318	275	275	269	312
Average	253	244	246	250	253

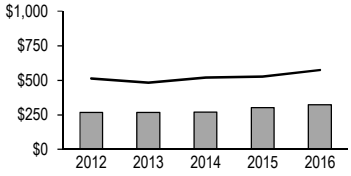
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Hickory	230	201	193		
Average	207	200	199	194	190

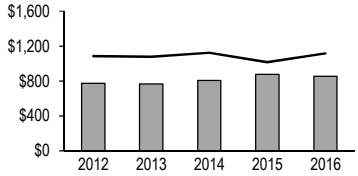
Efficiency Measures

Fleet Maintenance Cost per Work Order



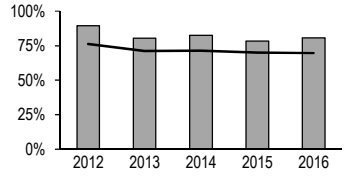
	2012	2013	2014	2015	2016
Hickory	$266	$268	$270	$301	$322
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Hickory	$774	$768	$806	$876	$857
Average	$1,085	$1,078	$1,123	$1,015	$1,116

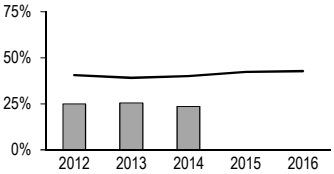
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Hickory	90%	81%	83%	78%	81%
Average	76%	71%	71%	70%	70%

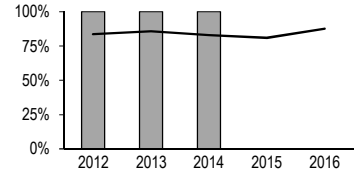
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



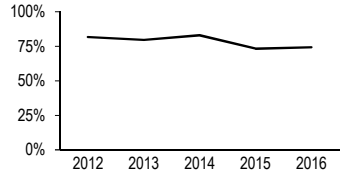
	2012	2013	2014	2015	2016
Hickory	25%	25%	23%		
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



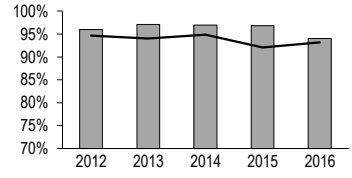
	2012	2013	2014	2015	2016
Hickory	100%	100%	100%		
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



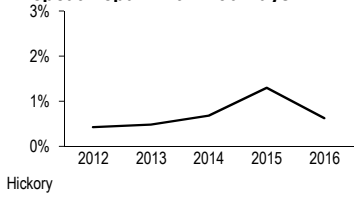
	2012	2013	2014	2015	2016
Hickory					
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Hickory	96%	97%	97%	97%	94%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Hickory					
Average	0.42%	0.49%	0.68%	1.30%	0.63%

High Point — Fleet Maintenance

Fiscal Year 2015–16

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 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993

Service Profile

FTE Positions—Technician	10.0
FTE Positions—Other	9.0
Work Bays	18

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	29	8.0 Years
Cars—Severe Usage	240	8.0 Years
Light Vehicles	283	10.0 Years
Medium Vehicles	26	10.0 Years
Heavy—Sanitation	30	8.0 Years
Heavy—Sewer	3	8.0 Years
Heavy—Fire Apparatus	25	0.0 Years
Heavy—Other	61	10.0 Years
Trailed Equipment	129	10.0 Years
Off-Road/Construction/Tractors	166	10.0 Years
Buses	0	NA
TOTAL	992	

Vehicle Equivalent Units (VEUs)	3,309
Average Rolling Stock Units Available per Day	942
Hours Billed	11,876
Work Orders	4,976
Repeat Repairs within 30 Days	25
Work Orders Completed within 24 hours	0
Preventive Maintenance Jobs (PMs)	2,326
PMs Completed as Scheduled	2,290

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	28.4%
Operating Costs	61.8%
Capital Costs	9.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,259,874
Operating Costs	$2,746,988
Capital Costs	$436,520
TOTAL	$4,443,382

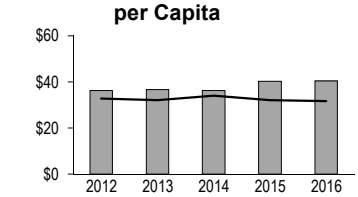
High Point

Fleet Maintenance

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

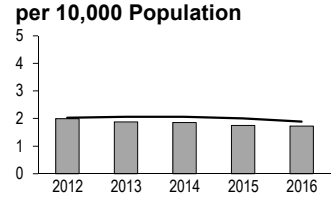
Resource Measures

Fleet Maintenance Services Cost per Capita



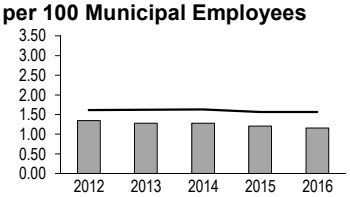
	2012	2013	2014	2015	2016
High Point	$36.30	$36.75	$36.24	$40.35	$40.49
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	1.99	1.88	1.86	1.75	1.73
Average	2.03	2.06	2.06	2.01	1.89

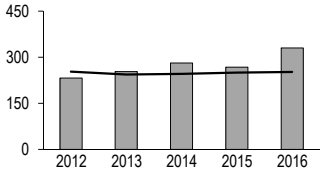
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
High Point	1.35	1.28	1.28	1.20	1.16
Average	1.61	1.62	1.63	1.56	1.57

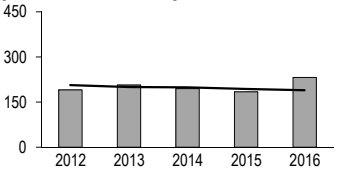
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
High Point	232	253	281	267	331
Average	253	244	246	250	253

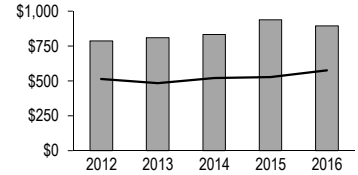
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
High Point	191	207	195	184	233
Average	207	200	199	194	190

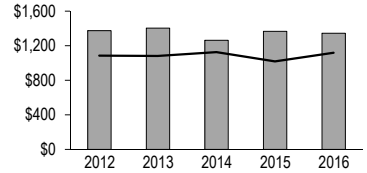
Efficiency Measures

Fleet Maintenance Cost per Work Order



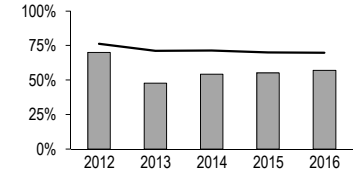
	2012	2013	2014	2015	2016
High Point	$786	$809	$832	$937	$893
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
High Point	$1,374	$1,403	$1,260	$1,365	$1,343
Average	$1,085	$1,078	$1,123	$1,015	$1,116

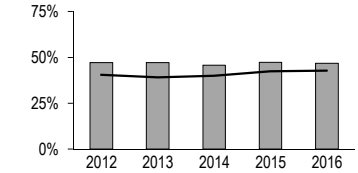
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
High Point	70%	48%	54%	55%	57%
Average	76%	71%	71%	70%	70%

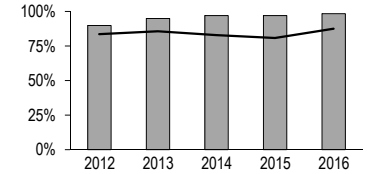
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



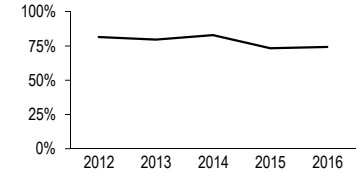
	2012	2013	2014	2015	2016
High Point	47%	47%	46%	47%	47%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



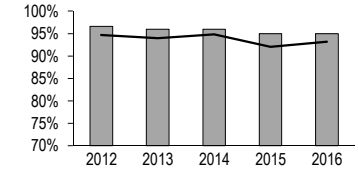
	2012	2013	2014	2015	2016
High Point	90%	95%	97%	97%	98%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



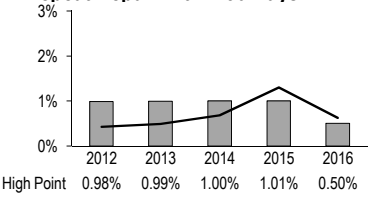
	2012	2013	2014	2015	2016
High Point					
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
High Point	97%	96%	96%	95%	95%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
High Point	0.98%	0.99%	1.00%	1.01%	0.50%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Raleigh — Fleet Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Vehicle Fleet Service Divsion is under the Engineering Services Department for the City of Raleigh. The Division provides maintenance and repair services for all city vehicles and motorized equipment except for Fire Department vehicles and city buses, which are handled by their own department. The Division also handles replacement of new vehicles and equipment, managing fuel operations, and the city motor pool. The Division is run as an internal service fund for the City.

Varying labor rates are used for different types of worker ranging from $27 per hour for preventative maintenance technicians up to $65 for heavy equipment mechanics. A markup of 25 percent is added for parts and a 15 percent markup is added for sublet work.

The following services were contracted out:

- body work
- painting of new vehicles
- transmission work and overhauls
- some engine replacements
- spring work
- natural gas tank inspections
- onsite lubrication services for refuse vehicles
- towing.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

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 Raleigh, the preventive maintenance (PM) completion standard for "percentage of PMs completed as scheduled" is 45 days and a 30 percent variance for meters, which could be miles or hours.

In addition to maintenance responsibilities for the city's rolling stock, the Division also has responsibility for equipment, including pumps, weed eaters, concrete saws, mowers, blowers, compressors, light towers, scissor lifts, vacuums, pipe saws, flashing light arrows, chippers, spray washes, line markers, leaf vacuums, outboard motors, spreaders, generators, paint sprayers, grass trimmers, yard waste handlers, power rodders, golf carts, forklifts, and other city equipment.

The Raleigh Fire Department takes care of the maintenance for its own vehicles.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036

Service Profile

FTE Positions—Technician	49.0
FTE Positions—Other	28.0
Work Bays	51

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	234	6.9 Years
Cars—Severe Usage	491	5.3 Years
Light Vehicles	901	6.4 Years
Medium Vehicles	138	7.5 Years
Heavy—Sanitation	106	4.3 Years
Heavy—Sewer	19	7.3 Years
Heavy—Fire Apparatus	0	NA
Heavy—Other	125	6.2 Years
Trailed Equipment	356	9.5 Years
Off-Road/Construction/Tractors	207	8.2 Years
Buses	21	8.6 Years
TOTAL	2,598	

Vehicle Equivalent Units (VEUs)	7,686
Average Rolling Stock Units Available per Day	2,496
Hours Billed	54,177
Work Orders	13,920
Repeat Repairs within 30 Days	143
Work Orders Completed within 24 hours	6,594
Preventive Maintenance Jobs (PMs)	9,912
PMs Completed as Scheduled	7,644

Full Cost Profile

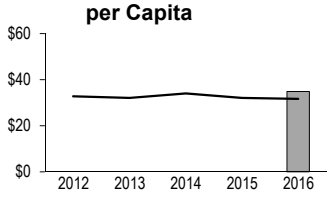
Cost Breakdown by Percentage	
Personal Services	28.3%
Operating Costs	67.4%
Capital Costs	4.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,359,308
Operating Costs	$10,378,560
Capital Costs	$655,673
TOTAL	$15,393,541

Raleigh — Fleet Maintenance

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

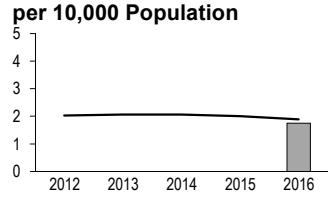
Resource Measures

Fleet Maintenance Services Cost per Capita



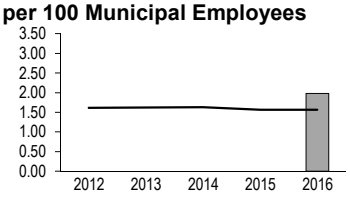
	2012	2013	2014	2015	2016
Raleigh					$34.93
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					1.75
Average	2.03	2.06	2.06	2.01	1.89

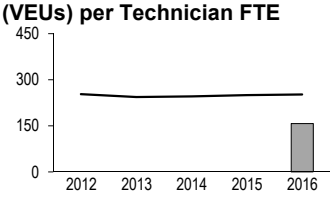
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Raleigh					1.98
Average	1.61	1.62	1.63	1.56	1.57

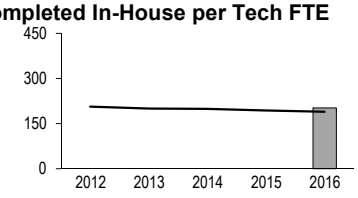
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Raleigh					157
Average	253	244	246	250	253

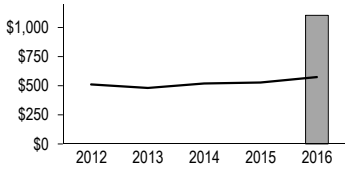
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Raleigh					202
Average	207	200	199	194	190

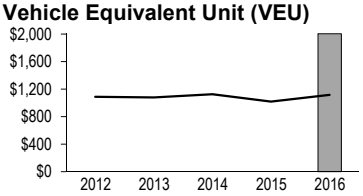
Efficiency Measures

Fleet Maintenance Cost per Work Order



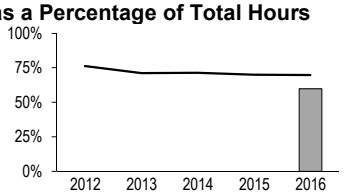
	2012	2013	2014	2015	2016
Raleigh					$1,106
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Raleigh					$2,003
Average	$1,085	$1,078	$1,123	$1,015	$1,116

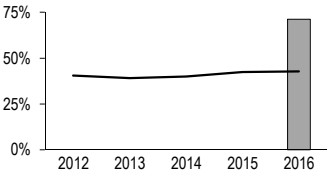
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Raleigh					60%
Average	76%	71%	71%	70%	70%

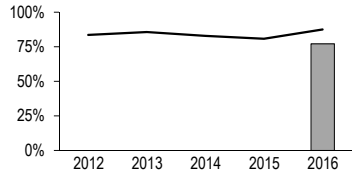
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



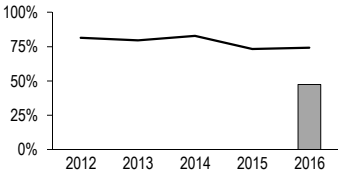
	2012	2013	2014	2015	2016
Raleigh					71%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



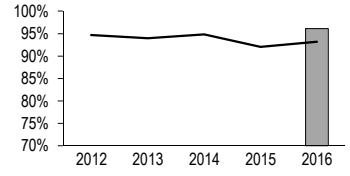
	2012	2013	2014	2015	2016
Raleigh					77%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



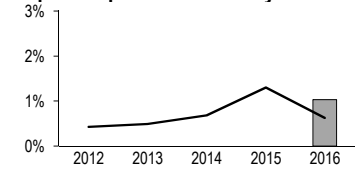
	2012	2013	2014	2015	2016
Raleigh					47%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Raleigh					96%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Raleigh					1.03%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Salisbury — Fleet Maintenance

Fiscal Year 2015–16

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 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543

Service Profile

FTE Positions—Technician	10.0
FTE Positions—Other	3.0
Work Bays	17

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	4	13.8 Years
Cars—Severe Usage	105	5.9 Years
Light Vehicles	135	11.5 Years
Medium Vehicles	30	13.4 Years
Heavy—Sanitation	13	8.9 Years
Heavy—Sewer	3	12.3 Years
Heavy—Fire Apparatus	11	14.4 Years
Heavy—Other	27	13.3 Years
Trailed Equipment	97	14.0 Years
Off-Road/Construction/Tractors	81	11.7 Years
Buses	9	11.2 Years
TOTAL	515	

Vehicle Equivalent Units (VEUs)	1,686
Average Rolling Stock Units Available per Day	499
Hours Billed	NA
Work Orders	4,751
Repeat Repairs within 30 Days	7
Work Orders Completed within 24 hours	NA
Preventive Maintenance Jobs (PMs)	1,923
PMs Completed as Scheduled	1,886

Full Cost Profile

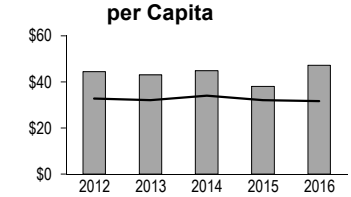
Cost Breakdown by Percentage	
Personal Services	43.2%
Operating Costs	53.2%
Capital Costs	3.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$699,280
Operating Costs	$861,263
Capital Costs	$57,427
TOTAL	$1,617,970

Salisbury — Fleet Maintenance

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

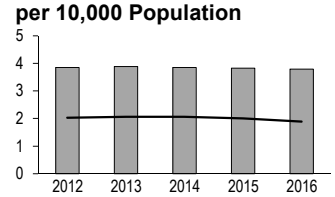
Resource Measures

Fleet Maintenance Services Cost per Capita



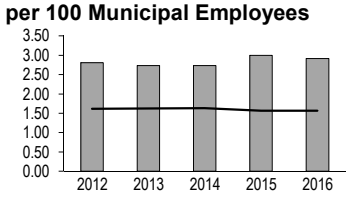
	2012	2013	2014	2015	2016
Salisbury	$44.40	$43.13	$44.93	$38.01	$47.19
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	3.86	3.89	3.85	3.83	3.79
Average	2.03	2.06	2.06	2.01	1.89

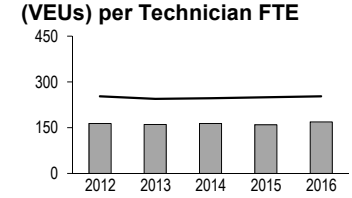
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Salisbury	2.81	2.73	2.73	3.00	2.91
Average	1.61	1.62	1.63	1.56	1.57

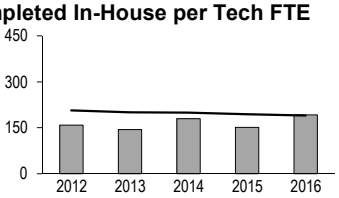
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Salisbury	164	160	163	160	169
Average	253	244	246	250	253

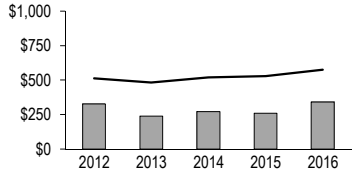
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Salisbury	159	144	179	151	192
Average	207	200	199	194	190

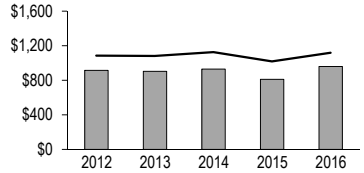
Efficiency Measures

Fleet Maintenance Cost per Work Order



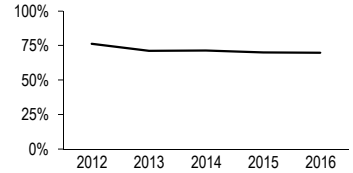
	2012	2013	2014	2015	2016
Salisbury	$328	$240	$272	$260	$341
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Salisbury	$913	$902	$928	$808	$959
Average	$1,085	$1,078	$1,123	$1,015	$1,116

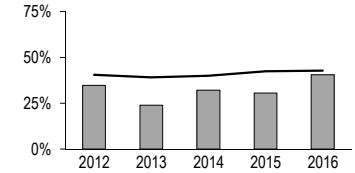
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Salisbury					
Average	76%	71%	71%	70%	70%

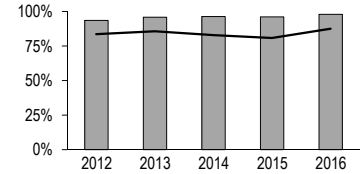
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



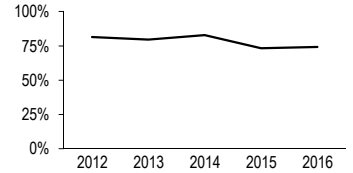
	2012	2013	2014	2015	2016
Salisbury	35%	24%	32%	30%	40%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



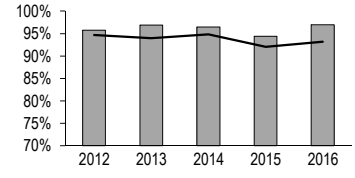
	2012	2013	2014	2015	2016
Salisbury	94%	96%	96%	96%	98%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



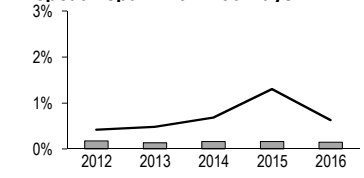
	2012	2013	2014	2015	2016
Salisbury					
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Salisbury	96%	97%	96%	94%	97%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Salisbury	0.18%	0.13%	0.16%	0.16%	0.15%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Wilson — Fleet Maintenance

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Wilson's Fleet Maintenance Division is 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 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617

Service Profile

FTE Positions—Technician	11.0
FTE Positions—Other	5.0
Work Bays	15

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	33	11.9 Years
Cars—Severe Usage	119	6.6 Years
Light Vehicles	186	10.0 Years
Medium Vehicles	58	12.0 Years
Heavy—Sanitation	33	8.7 Years
Heavy—Sewer	5	9.6 Years
Heavy—Fire Apparatus	10	14.1 Years
Heavy—Other	57	11.3 Years
Trailed Equipment	149	14.0 Years
Off-Road/Construction/Tractors	174	13.0 Years
Buses	5	11.0 Years
TOTAL	829	

Vehicle Equivalent Units (VEUs)	2,827
Average Rolling Stock Units Available per Day	787
Hours Billed	18,555
Work Orders	7,735
Repeat Repairs within 30 Days	39
Work Orders Completed within 24 hours	6,574
Preventive Maintenance Jobs (PMs)	1,214
PMs Completed as Scheduled	1,092

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	32.6%
Operating Costs	62.6%
Capital Costs	4.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,197,557
Operating Costs	$2,298,304
Capital Costs	$174,506
TOTAL	$3,670,367

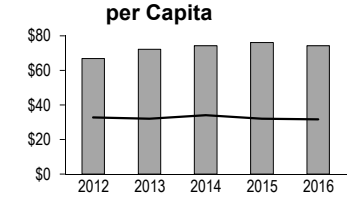
Wilson

Fleet Maintenance

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

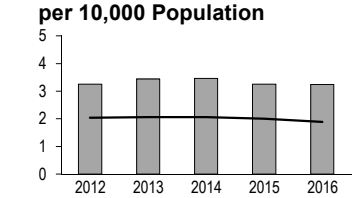
Resource Measures

Fleet Maintenance Services Cost per Capita



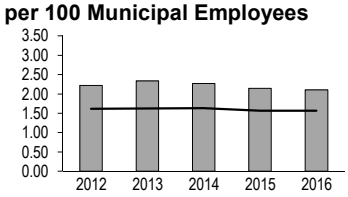
	2012	2013	2014	2015	2016
Wilson	$66.83	$72.24	$74.31	$76.14	$74.36
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	3.26	3.44	3.46	3.25	3.24
Average	2.03	2.06	2.06	2.01	1.89

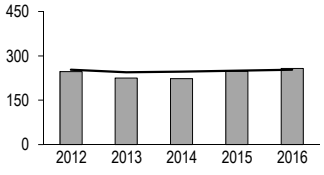
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Wilson	2.22	2.34	2.27	2.15	2.11
Average	1.61	1.62	1.63	1.56	1.57

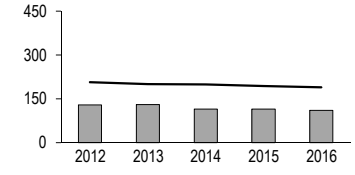
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Wilson	246	226	223	248	257
Average	253	244	246	250	253

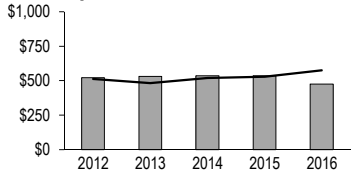
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Wilson	130	130	115	115	110
Average	207	200	199	194	190

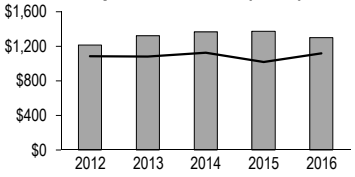
Efficiency Measures

Fleet Maintenance Cost per Work Order



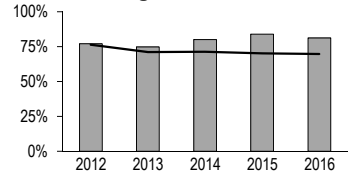
	2012	2013	2014	2015	2016
Wilson	$522	$531	$536	$536	$475
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Wilson	$1,212	$1,320	$1,364	$1,375	$1,298
Average	$1,085	$1,078	$1,123	$1,015	$1,116

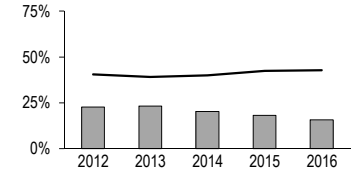
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Wilson	77%	75%	80%	84%	81%
Average	76%	71%	71%	70%	70%

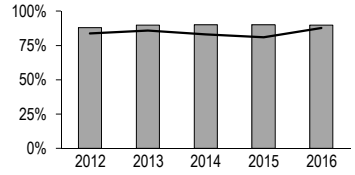
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



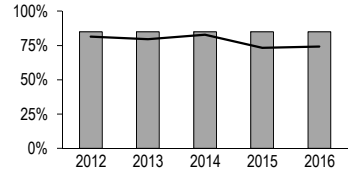
	2012	2013	2014	2015	2016
Wilson	23%	23%	20%	18%	16%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



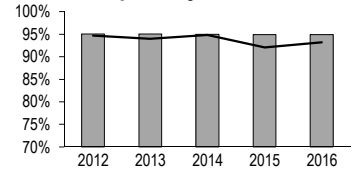
	2012	2013	2014	2015	2016
Wilson	88%	90%	90%	90%	90%
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



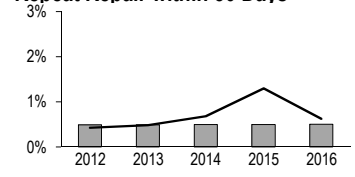
	2012	2013	2014	2015	2016
Wilson	85%	85%	85%	85%	85%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Wilson	95%	95%	95%	95%	95%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Wilson	0.49%	0.49%	0.50%	0.50%	0.50%
Average	0.42%	0.49%	0.68%	1.30%	0.63%

Winston-Salem Fleet Maintenance

Fiscal Year 2015–16

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 seventeen technician FTEs were actually working during the fiscal year 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, whacker tamps, pavement stripers, tractor implements, leaf blowers, power trimmers, salt spreaders, snow plows, and other city equipment.

Municipal Profile

Population (OSBM 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804

Service Profile

FTE Positions—Technician	16.0
FTE Positions—Other	13.0
Work Bays	31

Rolling Stock Maintained	No.	Average Age
Cars—Normal Usage	280	7.1 Years
Cars—Severe Usage	450	4.9 Years
Light Vehicles	405	8.2 Years
Medium Vehicles	146	9.9 Years
Heavy—Sanitation	50	21.6 Years
Heavy—Sewer	7	na
Heavy—Fire Apparatus	0	9.5 Years
Heavy—Other	50	19.3 Years
Trailed Equipment	152	14.7 Years
Off-Road/Construction/Tractors	260	na
Buses	0	0.0 Years
TOTAL	1,800	

Vehicle Equivalent Units (VEUs)	5,115
Average Rolling Stock Units Available per Day	1,689
Hours Billed	25,732
Work Orders	8,135
Repeat Repairs within 30 Days	NA
Work Orders Completed within 24 hours	5,677
Preventive Maintenance Jobs (PMs)	2,268
PMs Completed as Scheduled	NA

Full Cost Profile

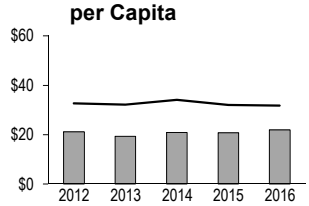
Cost Breakdown by Percentage	
Personal Services	28.2%
Operating Costs	70.1%
Capital Costs	1.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,474,209
Operating Costs	$3,661,958
Capital Costs	$88,112
TOTAL	$5,224,279

Winston-Salem — Fleet Maintenance

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

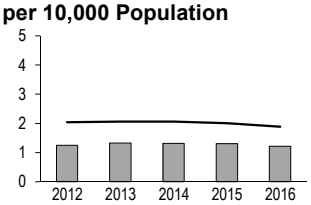
Resource Measures

Fleet Maintenance Services Cost per Capita



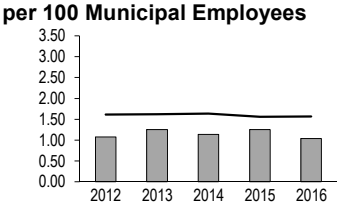
	2012	2013	2014	2015	2016
Winston-Salem	$21.10	$19.35	$20.85	$20.78	$21.87
Average	$32.74	$32.15	$34.09	$32.06	$31.73

Fleet Maintenance FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	1.25	1.33	1.32	1.30	1.21
Average	2.03	2.06	2.06	2.01	1.89

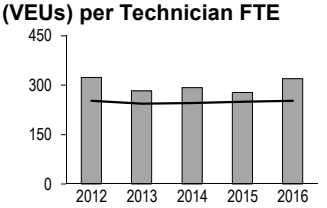
Fleet Maintenance FTEs per 100 Municipal Employees



	2012	2013	2014	2015	2016
Winston-Salem	1.08	1.25	1.14	1.25	1.04
Average	1.61	1.62	1.63	1.56	1.57

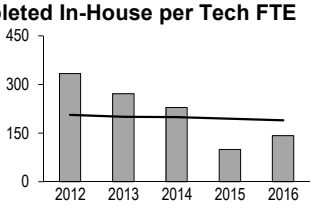
Workload Measures

Number of Vehicle Equivalent Units (VEUs) per Technician FTE



	2012	2013	2014	2015	2016
Winston-Salem	324	283	293	278	320
Average	253	244	246	250	253

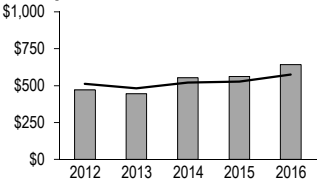
Preventive Maintenances (PMs) Completed In-House per Tech FTE



	2012	2013	2014	2015	2016
Winston-Salem	334	271	229	100	142
Average	207	200	199	194	190

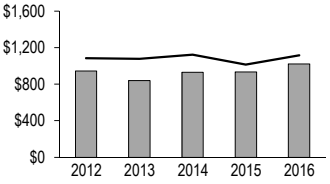
Efficiency Measures

Fleet Maintenance Cost per Work Order



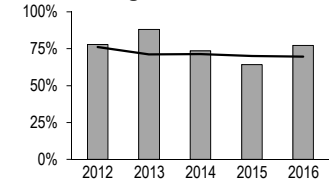
	2012	2013	2014	2015	2016
Winston-Salem	$470	$446	$552	$563	$642
Average	$512	$482	$520	$528	$574

Fleet Maintenance Cost per Vehicle Equivalent Unit (VEU)



	2012	2013	2014	2015	2016
Winston-Salem	$946	$839	$931	$935	$1,021
Average	$1,085	$1,078	$1,123	$1,015	$1,116

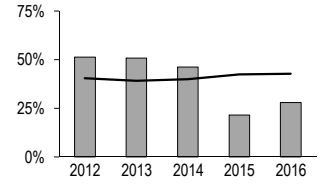
Hours Billed as a Percentage of Total Hours



	2012	2013	2014	2015	2016
Winston-Salem	78%	88%	73%	64%	77%
Average	76%	71%	71%	70%	70%

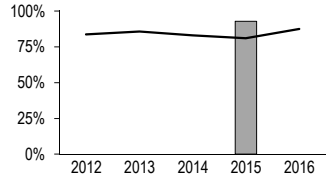
Effectiveness Measures

Preventive Maintenances (PMs) as a Percentage of All Work Orders



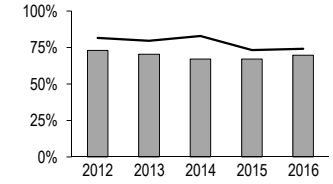
	2012	2013	2014	2015	2016
Winston-Salem	51%	51%	46%	22%	28%
Average	40%	39%	40%	42%	43%

Percentage of Preventive Maintenances (PMs) Completed as Scheduled



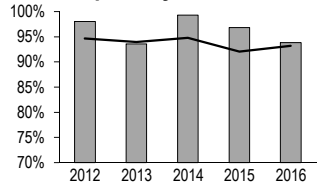
	2012	2013	2014	2015	2016
Winston-Salem				93%	
Average	84%	86%	83%	81%	88%

Percentage of Work Orders Completed within 24 Hours



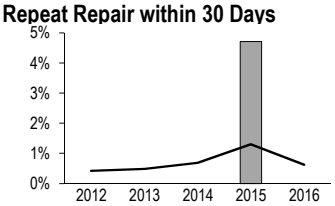
	2012	2013	2014	2015	2016
Winston-Salem	73%	70%	67%	67%	70%
Average	82%	80%	83%	73%	74%

Percentage of Rolling Stock Available per Day



	2012	2013	2014	2015	2016
Winston-Salem	98%	94%	99%	97%	94%
Average	95%	94%	95%	92%	93%

Percentage of Work Orders Requiring Repeat Repair within 30 Days



	2012	2013	2014	2015	2016
Winston-Salem				4.71%	
Average	0.42%	0.49%	0.68%	1.30%	0.63%


UNC
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GOVERNMENT

Performance and Cost Data

CENTRAL HUMAN RESOURCES


UNC
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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 the 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 employees in the 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	386	7.1	69	3,792	28	6 & 12 months	9.6%	2.8
Asheville	1,199	10.7	287	13,194	204	6 months	11.8%	19.8
Burlington	1,046	11.1	110	4,793	22	6 & 12 months	18.9%	3.5
Cary	1,261	10.9	501	8,118	215	6 & 12 months	7.3%	14.6
Chapel Hill	782	12.0	128	8,977	222	6 & 12 months	9.3%	8.0
Charlotte	7,237	10.5	683	64,766	2,843	6 & 12 months	7.9%	36.0
Concord	960	10.3	153	8,410	152	6 & 12 months	13.3%	8.5
Greensboro	3,065	11.1	386	26,200	1,579	6 & 12 months	6.5%	35.0
Greenville	765	10.3	73	6,507	245	6 & 12 months	8.0%	9.0
Hickory	736	10.1	84	4,910	25	12 months	14.8%	6.0
High Point	1,637	10.8	356	6,541	85	12 months	8.3%	12.5
Raleigh	3,886	10.0	796	95,074	310	6 & 12 months	7.5%	31.0
Salisbury	446	8.9	72	1,101	67	6 & 12 months	16.6%	6.0
Wilson	760	10.3	75	2,395	225	12 months	7.8%	5.5
Winston-Salem	2,795	11.4	500	19,806	422	6 & 12 months	9.6%	15.0

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

Apex Central Human Resources

Fiscal Year 2015–16

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.

Three employee compensation studies were completed during the fiscal year covering 111 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

Municipal Profile

Population (OSBM 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Median Family Income U.S. Census 2010	$97,201
County Unemployment Rate (2013) N.C. Employment Security Commission	6.6%

Service Profile

Central HR FTE Positions	
Administration	1.0
Generalist/Specialist	1.0
Staff Support/Clerical	0.75
Total Authorized Workforce	386.0
Authorized FTEs	383.2
Average Length of Service (Months)	85
Number of Position Requisitions	69
Employment Applications Processed	3,792
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	3
Positions Studied	111
Employee Turnover	
Voluntary Separations	31
Involuntary Separations	6
TOTAL SEPARATIONS	37
Formal Grievances Filed by Employees	0
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	57.5%
Operating Costs	40.3%
Capital Costs	2.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$250,533
Operating Costs	$175,413
Capital Costs	$9,620
TOTAL	$435,566

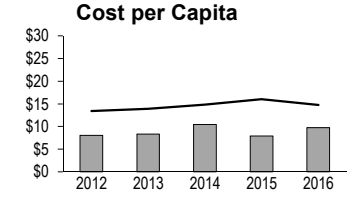
Apex

Central Human Resources

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

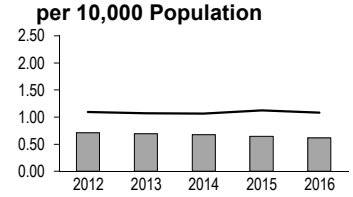
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Apex	$8.05	$8.36	$10.46	$7.94	$9.73
Average	$13.43	$13.90	$14.80	$16.05	$14.73

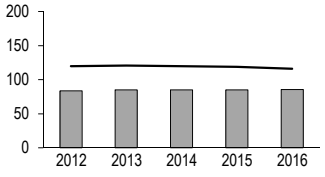
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	0.71	0.69	0.67	0.64	0.61
Average	1.09	1.07	1.07	1.12	1.08

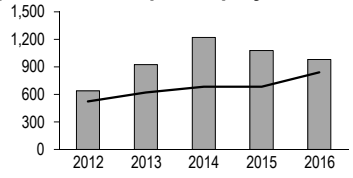
Workload Measures

Total Municipal FTEs per 10,000 Population



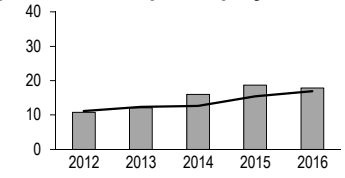
	2012	2013	2014	2015	2016
Apex	84	85	85	85	86
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Apex	638	925	1,221	1,078	982
Average	525	622	684	685	840

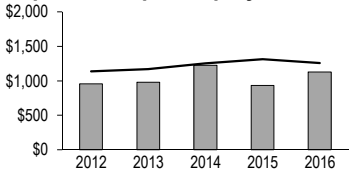
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Apex	10.8	12.1	16.0	18.7	17.9
Average	11.1	12.3	12.7	15.5	16.9

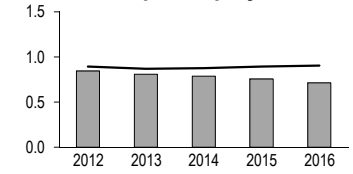
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Apex	$958	$978	$1,226	$932	$1,128
Average	$1,139	$1,169	$1,255	$1,313	$1,259

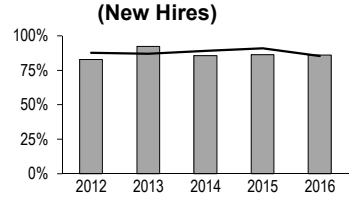
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Apex	0.85	0.81	0.79	0.76	0.71
Average	0.89	0.87	0.88	0.90	0.90

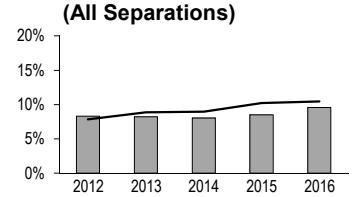
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



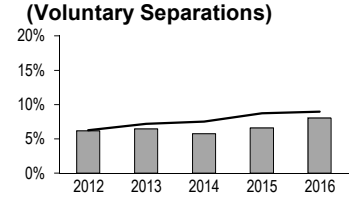
	2012	2013	2014	2015	2016
Apex	83%	93%	86%	86%	86%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



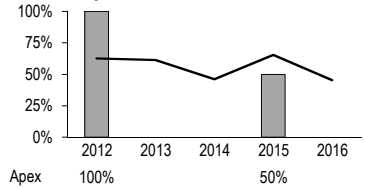
	2012	2013	2014	2015	2016
Apex	8.3%	8.2%	8.0%	8.5%	9.6%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



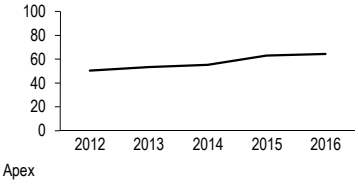
	2012	2013	2014	2015	2016
Apex	6.2%	6.5%	5.7%	6.6%	8.0%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Apex	100%			50%	
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Apex					
Average	50	53	55	63	64

Asheville — Central Human Resources

Fiscal Year 2015–16

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 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Median Family Income U.S. Census 2010	$53,350
County Unemployment Rate (2013) N.C. Employment Security Commission	6.4%

Service Profile

Central HR FTE Positions	
Administration	5.00
Generalist/Specialist	9.00
Staff Support/Clerical	5.80
Total Authorized Workforce	1,199.0
Authorized FTEs	1,188.4
Average Length of Service (Months)	128.52
Number of Position Requisitions	287
Employment Applications Processed	13,194
Length of Probationary Employment Period	6 months
Compensation Studies Completed	1
Positions Studied	55
Employee Turnover	
Voluntary Separations	128
Involuntary Separations	13
TOTAL SEPARATIONS	141
Formal Grievances Filed by Employees	18
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

Full Cost Profile

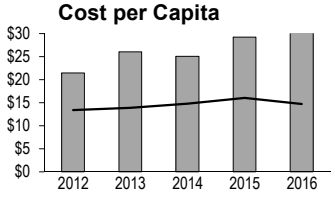
Cost Breakdown by Percentage	
Personal Services	56.6%
Operating Costs	40.3%
Capital Costs	3.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,592,959
Operating Costs	$1,134,096
Capital Costs	$85,109
TOTAL	$2,812,164

Asheville — Central Human Resources

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

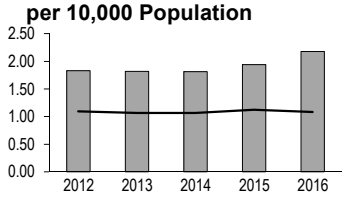
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Asheville	$21.48	$26.04	$25.12	$29.28	$30.93
Average	$13.43	$13.90	$14.80	$16.05	$14.73

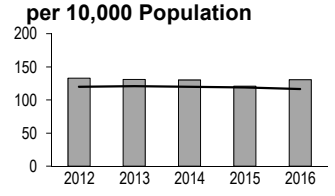
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	1.83	1.82	1.82	1.94	2.18
Average	1.09	1.07	1.07	1.12	1.08

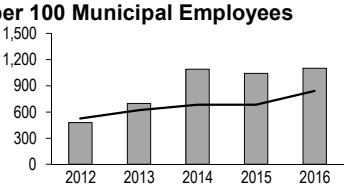
Workload Measures

Total Municipal FTEs per 10,000 Population



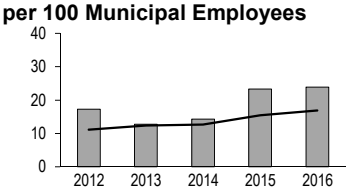
	2012	2013	2014	2015	2016
Asheville	133	131	130	121	131
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Asheville	478	697	1,090	1,042	1,100
Average	525	622	684	685	840

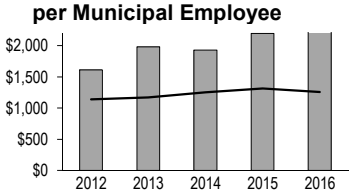
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Asheville	17.3	12.7	14.3	23.3	23.9
Average	11.1	12.3	12.7	15.5	16.9

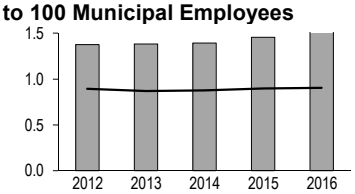
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Asheville	$1,614	$1,981	$1,929	$2,198	$2,345
Average	$1,139	$1,169	$1,255	$1,313	$1,259

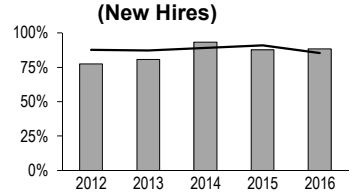
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Asheville	1.38	1.38	1.39	1.46	1.65
Average	0.89	0.87	0.88	0.90	0.90

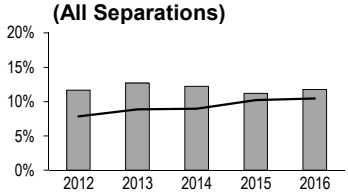
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



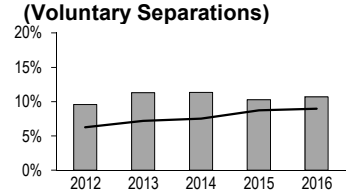
	2012	2013	2014	2015	2016
Asheville	77%	81%	93%	88%	88%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



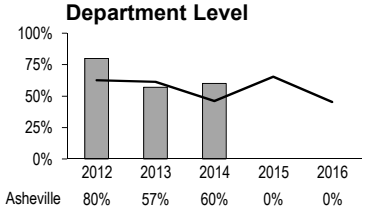
	2012	2013	2014	2015	2016
Asheville	11.7%	12.7%	12.2%	11.2%	11.8%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



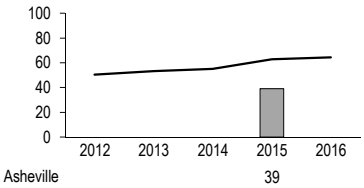
	2012	2013	2014	2015	2016
Asheville	9.6%	11.3%	11.3%	10.3%	10.7%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Asheville	80%	57%	60%	0%	0%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Asheville				39	
Average	50	53	55	63	64

Burlington Central Human Resources

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Burlington's Human Resources (HR) Department is a separate department consisting of four positions: an HR director, two HR specialists, and a half-time 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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
Median Family Income U.S. Census 2010	$46,461
County Unemployment Rate (2013) N.C. Employment Security Commission	8.4%

Service Profile

Central HR FTE Positions	
Administration	1.0
Generalist/Specialist	2.0
Staff Support/Clerical	0.5
Total Authorized Workforce	1,046.0
Authorized FTEs	804.0
Average Length of Service (Months)	132.92
Number of Position Requisitions	110
Employment Applications Processed	4,793
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	0
Positions Studied	0
Employee Turnover	
Voluntary Separations	174
Involuntary Separations	24
TOTAL SEPARATIONS	198
Formal Grievances Filed by Employees	2
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

Full Cost Profile

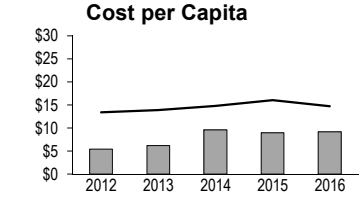
Cost Breakdown by Percentage	
Personal Services	54.8%
Operating Costs	42.2%
Capital Costs	3.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$262,803
Operating Costs	$202,295
Capital Costs	$14,238
TOTAL	$479,336

Burlington — Central Human Resources

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

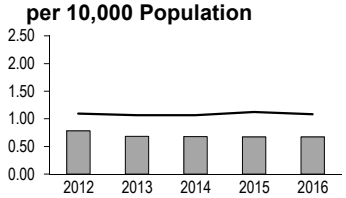
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Burlington	$5.45	$6.17	$9.57	$8.96	$9.18
Average	$13.43	$13.90	$14.80	$16.05	$14.73

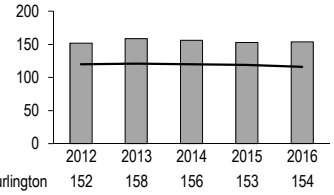
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	0.78	0.68	0.68	0.67	0.67
Average	1.09	1.07	1.07	1.12	1.08

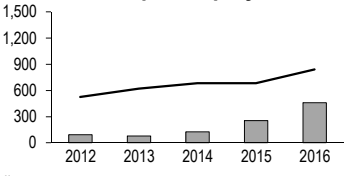
Workload Measures

Total Municipal FTEs per 10,000 Population



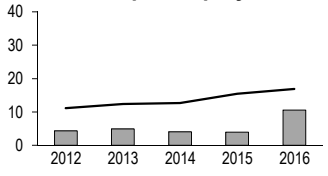
	2012	2013	2014	2015	2016
Burlington	152	158	156	153	154
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Burlington	94	77	125	254	458
Average	525	622	684	685	840

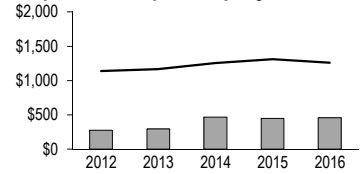
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Burlington	4.3	4.8	4.0	3.9	10.5
Average	11.1	12.3	12.7	15.5	16.9

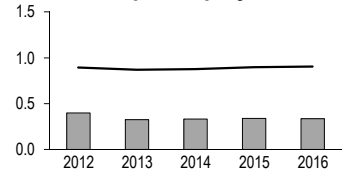
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Burlington	$276	$293	$466	$451	$458
Average	$1,139	$1,169	$1,255	$1,313	$1,259

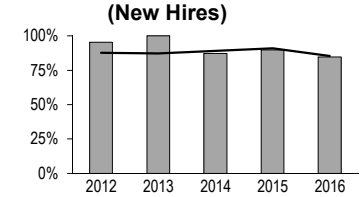
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Burlington	0.40	0.33	0.33	0.34	0.33
Average	0.89	0.87	0.88	0.90	0.90

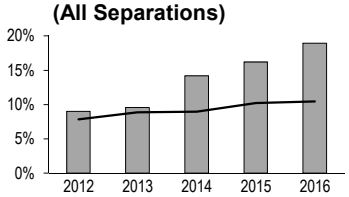
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



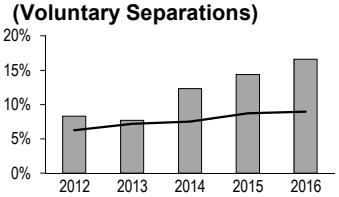
	2012	2013	2014	2015	2016
Burlington	95%	100%	87%	90%	85%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



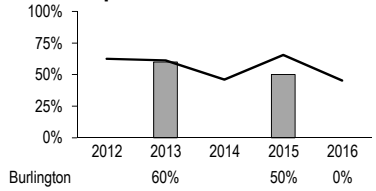
	2012	2013	2014	2015	2016
Burlington	9.0%	9.6%	14.2%	16.2%	18.9%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



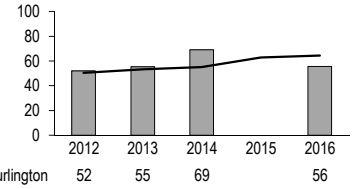
	2012	2013	2014	2015	2016
Burlington	8.3%	7.7%	12.3%	14.4%	16.6%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Burlington		60%		50%	0%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Burlington	52	55	69		56
Average	50	53	55	63	64

Cary Central Human Resources

Fiscal Year 2015–16

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, an employee compensation and recruitment manager, and an employee safety coordinator as part of the HR management team. A number of other consultants, assistants, and specialists provide support and services in carrying out the work performed by HR.

The town conducted one compensation study during the most recent fiscal year that involved the study of 253 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 2015)	152,627
Land Area (Square Miles)	56.47
Persons per Square Mile	2,703
Median Family Income U.S. Census 2010	$108,956
County Unemployment Rate (2013) N.C. Employment Security Commission	6.6%

Service Profile

Central HR FTE Positions	
Administration	5.0
Generalist/Specialist	6.0
Staff Support/Clerical	3.63
Total Authorized Workforce	1,261.0
Authorized FTEs	1,255.4
Average Length of Service (Months)	131
Number of Position Requisitions	501
Employment Applications Processed	8,118
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	1
Positions Studied	253
Employee Turnover	
Voluntary Separations	91
Involuntary Separations	1
TOTAL SEPARATIONS	92
Formal Grievances Filed by Employees	3
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

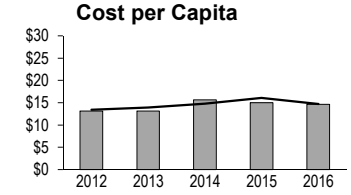
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	61.9%
Operating Costs	36.3%
Capital Costs	1.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,384,386
Operating Costs	$811,067
Capital Costs	$40,134
TOTAL	$2,235,587

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

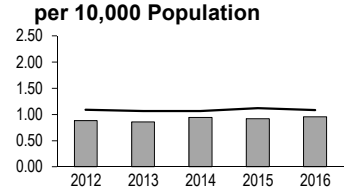
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Cary	$13.13	$13.12	$15.66	$14.98	$14.65
Average	$13.43	$13.90	$14.80	$16.05	$14.73

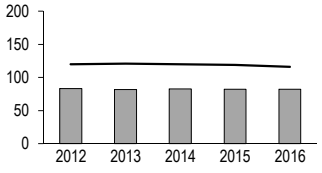
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	0.88	0.86	0.94	0.92	0.96
Average	1.09	1.07	1.07	1.12	1.08

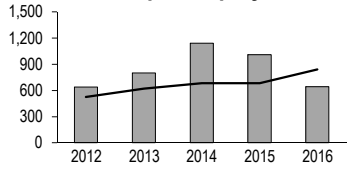
Workload Measures

Total Municipal FTEs per 10,000 Population



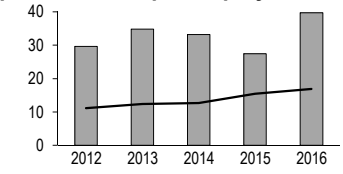
	2012	2013	2014	2015	2016
Cary	83	82	83	82	82
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Cary	640	801	1,141	1,009	644
Average	525	622	684	685	840

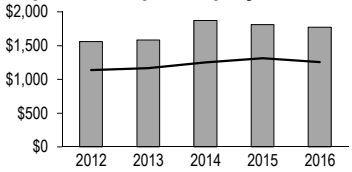
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Cary	29.7	34.9	33.3	27.4	39.7
Average	11.1	12.3	12.7	15.5	16.9

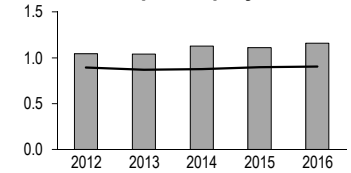
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Cary	$1,559	$1,586	$1,874	$1,812	$1,773
Average	$1,139	$1,169	$1,255	$1,313	$1,259

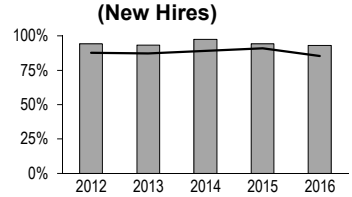
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Cary	1.05	1.04	1.13	1.11	1.16
Average	0.89	0.87	0.88	0.90	0.90

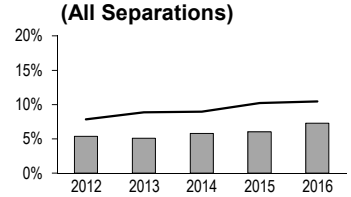
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



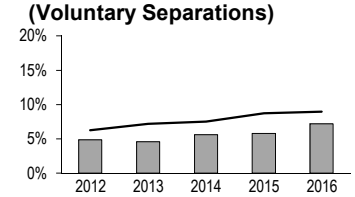
	2012	2013	2014	2015	2016
Cary	94%	93%	98%	94%	93%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



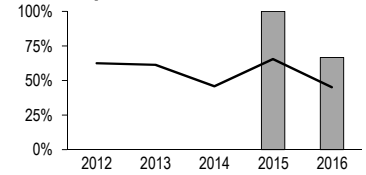
	2012	2013	2014	2015	2016
Cary	5.4%	5.1%	5.8%	6.0%	7.3%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



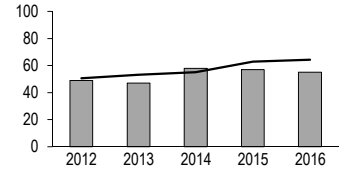
	2012	2013	2014	2015	2016
Cary	4.9%	4.6%	5.6%	5.8%	7.2%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Cary				100%	67%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Cary	49	47	58	57	55
Average	50	53	55	63	64

Chapel Hill — Central Human Resources

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill's Human Resource Development Department is organized into one centralized HR department using a specialist structure with several departmental HR liasons who facilitate communication of Town processes and procedures, benefits paperwork, and predisciplinary conferences. The department ensures standard operating procedures are followed and coordinates departmental interviews for job openings.

During the fiscal year, six compensation studies were conducted covering twenty-five positions. There were 8,977 applications processed electronically or online.

The town's probationary period for most new employees is six months. Department heads and police personnel serve a twelve-month period.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Median Family Income U.S. Census 2010	$61,405
County Unemployment Rate (2013) N.C. Employment Security Commission	8.5%

Service Profile

Central HR FTE Positions	
Administration	2.0
Generalist/Specialist	5.0
Staff Support/Clerical	1.0
Total Authorized Workforce	782.0
Authorized FTEs	761.21
Average Length of Service (Months)	144
Number of Position Requisitions	128
Employment Applications Processed	8,977
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	6
Positions Studied	25
Employee Turnover	
Voluntary Separations	60
Involuntary Separations	11
TOTAL SEPARATIONS	71
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	4

Full Cost Profile

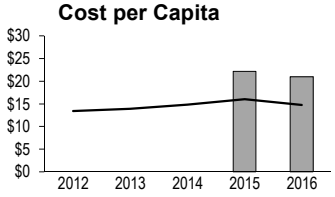
Cost Breakdown by Percentage	
Personal Services	42.0%
Operating Costs	57.5%
Capital Costs	0.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$525,580
Operating Costs	$719,311
Capital Costs	$5,683
TOTAL	$1,250,574

Chapel Hill — Central Human Resources

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2012 through 2016

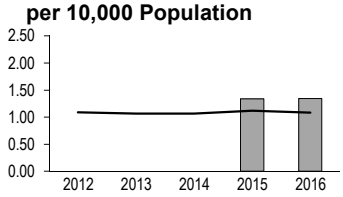
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Chapel Hill				$22.20	$20.98
Average	$13.43	$13.90	$14.80	$16.05	$14.73

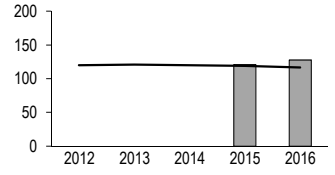
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Chapel Hill				1.34	1.34
Average	1.09	1.07	1.07	1.12	1.08

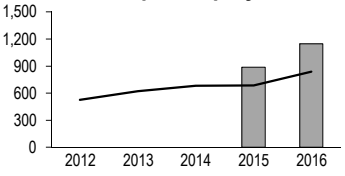
Workload Measures

Total Municipal FTEs per 10,000 Population



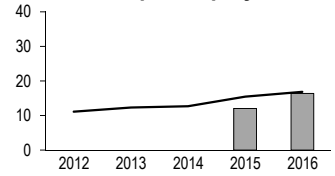
	2012	2013	2014	2015	2016
Chapel Hill				121	128
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Chapel Hill				889	1,148
Average	525	622	684	685	840

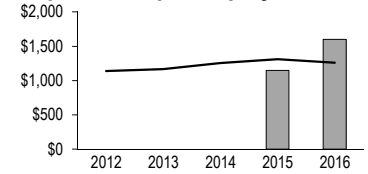
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Chapel Hill				12.0	16.4
Average	11.1	12.3	12.7	15.5	16.9

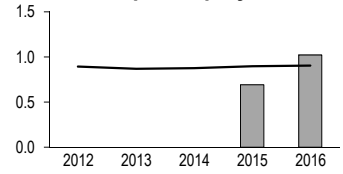
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Chapel Hill				$1,149	$1,599
Average	$1,139	$1,169	$1,255	$1,313	$1,259

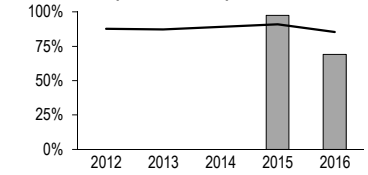
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Chapel Hill				0.69	1.02
Average	0.89	0.87	0.88	0.90	0.90

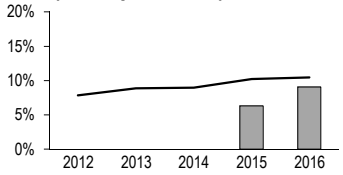
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



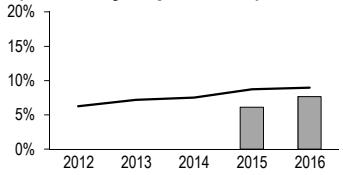
	2012	2013	2014	2015	2016
Chapel Hill				98%	69%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



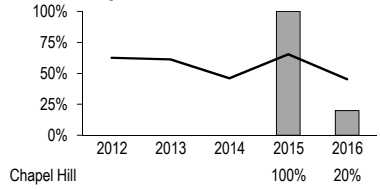
	2012	2013	2014	2015	2016
Chapel Hill				6.3%	9.1%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



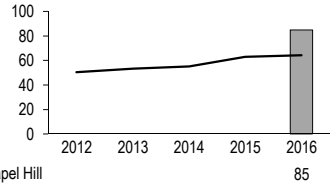
	2012	2013	2014	2015	2016
Chapel Hill				6.1%	7.7%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Chapel Hill				100%	20%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Chapel Hill					85
Average	50	53	55	63	64

Charlotte — Central Human Resources

Fiscal Year 2015–16

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 the fiscal year, eighteen compensation studies were conducted covering 435 positions. Surveys were done on the basis of national, regional, and other larger city comparisons. There were 64,766 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 did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

Charlotte has a very robust wellness program. Many resources are devoted to the success 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 2015)	818,480
Land Area (Square Miles)	305.37
Persons per Square Mile	2,680
Median Family Income U.S. Census 2010	$61,405
County Unemployment Rate (2013) N.C. Employment Security Commission	7.8%

Service Profile

Central HR FTE Positions	
Administration	4.0
Generalist/Specialist	29.0
Staff Support/Clerical	3.0
Total Authorized Workforce	7,236.8
Authorized FTEs	7,236.8
Average Length of Service (Months)	126.4
Number of Position Requisitions	683
Employment Applications Processed	64,766
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	18
Positions Studied	435
Employee Turnover	
Voluntary Separations	494
Involuntary Separations	78
TOTAL SEPARATIONS	572
Formal Grievances Filed by Employees	13
Equal Employment Opportunity Commission (EEOC) Complaints Filed	13

Full Cost Profile

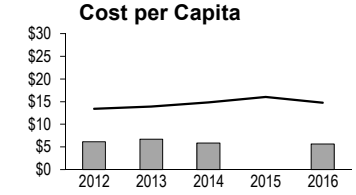
Cost Breakdown by Percentage	
Personal Services	74.4%
Operating Costs	25.4%
Capital Costs	0.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,462,307
Operating Costs	$1,182,568
Capital Costs	$7,900
TOTAL	$4,652,775

Charlotte — Central Human Resources

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

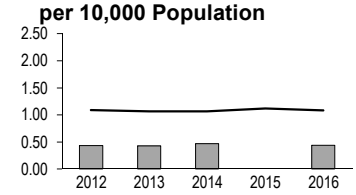
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Charlotte	$6.15	$6.72	$5.87		$5.68
Average	$13.43	$13.90	$14.80	$16.05	$14.73

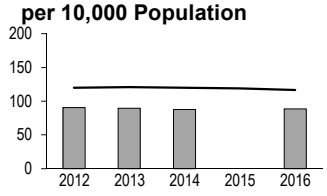
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	0.44	0.43	0.47		0.44
Average	1.09	1.07	1.07	1.12	1.08

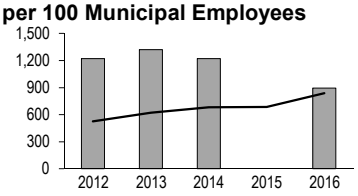
Workload Measures

Total Municipal FTEs per 10,000 Population



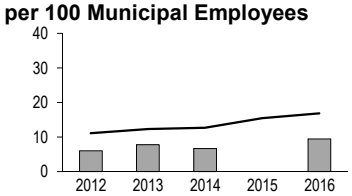
	2012	2013	2014	2015	2016
Charlotte	90	89	88		88
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Charlotte	1,221	1,322	1,221		895
Average	525	622	684	685	840

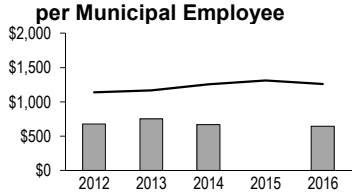
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Charlotte	6.1	7.8	6.7		9.4
Average	11.1	12.3	12.7	15.5	16.9

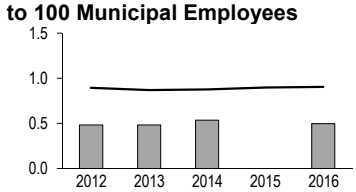
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Charlotte	$678	$750	$670		$643
Average	$1,139	$1,169	$1,255	$1,313	$1,259

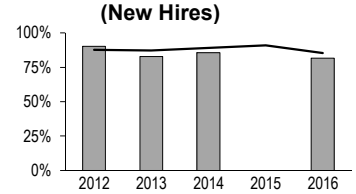
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Charlotte	0.48	0.48	0.54		0.50
Average	0.89	0.87	0.88	0.90	0.90

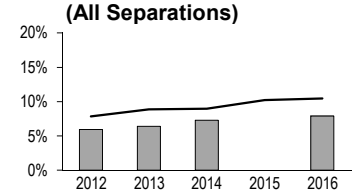
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



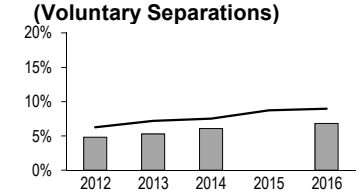
	2012	2013	2014	2015	2016
Charlotte	90%	83%	86%		82%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



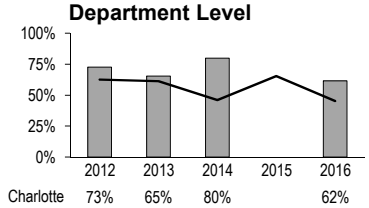
	2012	2013	2014	2015	2016
Charlotte	5.9%	6.4%	7.3%		7.9%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



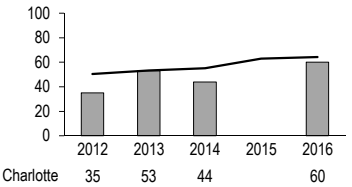
	2012	2013	2014	2015	2016
Charlotte	4.8%	5.3%	6.1%		6.8%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Charlotte	73%	65%	80%		62%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Charlotte	35	53	44		60
Average	50	53	55	63	64

Concord Central Human Resources

Fiscal Year 2015–16

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 three compensation studies during the most recent year covering nine 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 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
Median Family Income U.S. Census 2010	$63,643
County Unemployment Rate (2013) N.C. Employment Security Commission	7.8%

Service Profile

Central HR FTE Positions	
Administration	3.5
Generalist/Specialist	4.0
Staff Support/Clerical	1.0
Total Authorized Workforce	960.0
Authorized FTEs	944.5
Average Length of Service (Months)	123.5
Number of Position Requisitions	153
Employment Applications Processed	8,410
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	3
Positions Studied	9
Employee Turnover	
Voluntary Separations	114
Involuntary Separations	14
TOTAL SEPARATIONS	128
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	4

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	44.0%
Operating Costs	53.7%
Capital Costs	2.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$632,539
Operating Costs	$772,068
Capital Costs	$33,758
TOTAL	$1,438,365

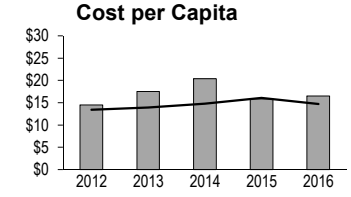
Concord

Central Human Resources

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

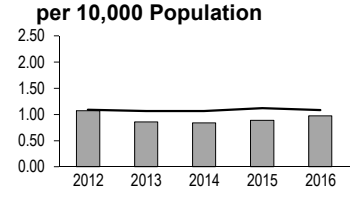
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Concord	$14.51	$17.54	$20.42	$15.85	$16.51
Average	$13.43	$13.90	$14.80	$16.05	$14.73

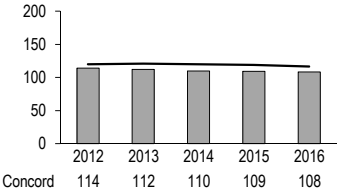
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	1.07	0.86	0.84	0.89	0.98
Average	1.09	1.07	1.07	1.12	1.08

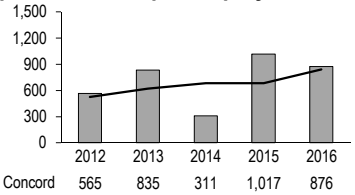
Workload Measures

Total Municipal FTEs per 10,000 Population



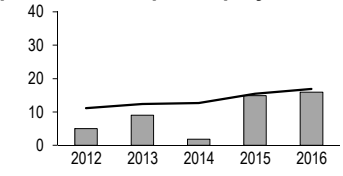
	2012	2013	2014	2015	2016
Concord	114	112	110	109	108
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Concord	565	835	311	1,017	876
Average	525	622	684	685	840

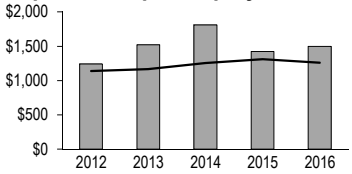
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Concord	5.0	9.0	1.8	14.8	15.9
Average	11.1	12.3	12.7	15.5	16.9

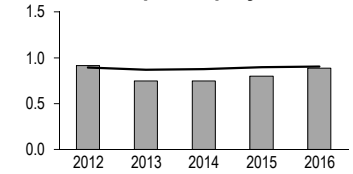
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Concord	$1,241	$1,523	$1,811	$1,424	$1,498
Average	$1,139	$1,169	$1,255	$1,313	$1,259

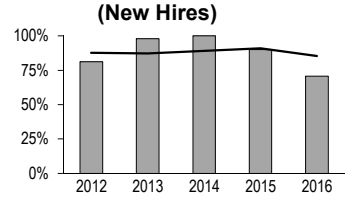
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Concord	0.91	0.75	0.75	0.80	0.89
Average	0.89	0.87	0.88	0.90	0.90

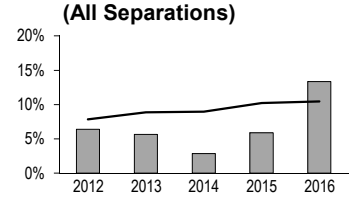
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



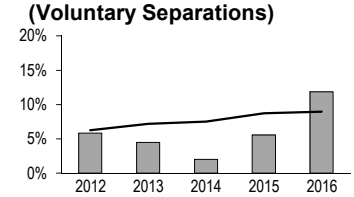
	2012	2013	2014	2015	2016
Concord	81%	98%	100%	90%	71%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



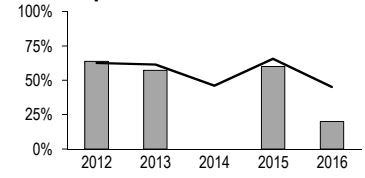
	2012	2013	2014	2015	2016
Concord	6.4%	5.7%	2.9%	5.9%	13.3%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



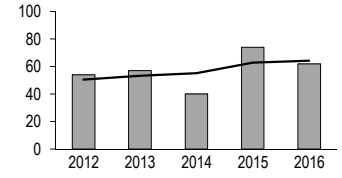
	2012	2013	2014	2015	2016
Concord	5.9%	4.5%	2.0%	5.6%	11.9%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Concord	64%	57%		60%	20%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Concord	54	57	40	74	62
Average	50	53	55	63	64

Greensboro Central Human Resources

Fiscal Year 2015–16

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 2015)	282,851
Land Area (Square Miles)	128.11
Persons per Square Mile	2,208
Median Family Income U.S. Census 2010	$52,752
County Unemployment Rate (2013) N.C. Employment Security Commission	8.7%

Service Profile

Central HR FTE Positions	
Administration	7.0
Generalist/Specialist	24.0
Staff Support/Clerical	4.0
Total Authorized Workforce	3,065.0
Authorized FTEs	3,053.0
Average Length of Service (Months)	133
Number of Position Requisitions	386
Employment Applications Processed	26,200
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	0
Positions Studied	0
Employee Turnover	
Voluntary Separations	171
Involuntary Separations	28
TOTAL SEPARATIONS	199
Formal Grievances Filed by Employees	25
Equal Employment Opportunity Commission (EEOC) Complaints Filed	3

Full Cost Profile

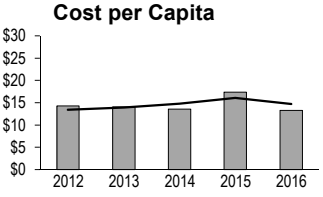
Cost Breakdown by Percentage	
Personal Services	65.5%
Operating Costs	34.5%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,459,504
Operating Costs	$1,296,797
Capital Costs	$0
TOTAL	$3,756,301

Greensboro — Central Human Resources

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

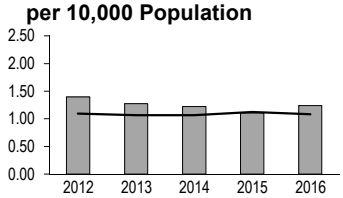
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Greensboro	$14.31	$14.11	$13.58	$17.39	$13.28
Average	$13.43	$13.90	$14.80	$16.05	$14.73

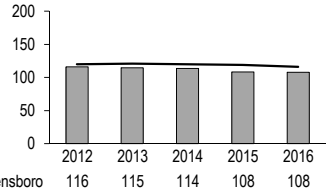
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	1.40	1.27	1.22	1.10	1.24
Average	1.09	1.07	1.07	1.12	1.08

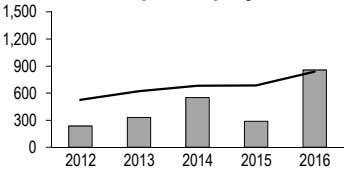
Workload Measures

Total Municipal FTEs per 10,000 Population



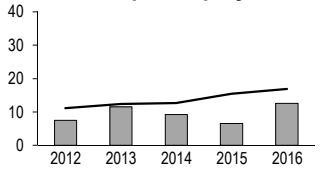
	2012	2013	2014	2015	2016
Greensboro	116	115	114	108	108
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greensboro	237	332	553	288	855
Average	525	622	684	685	840

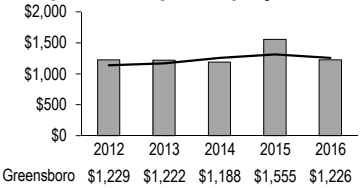
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greensboro	7.5	11.5	9.2	6.5	12.6
Average	11.1	12.3	12.7	15.5	16.9

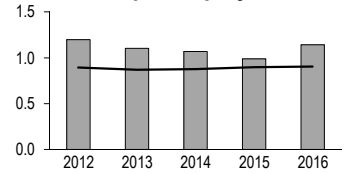
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Greensboro	$1,229	$1,222	$1,188	$1,555	$1,226
Average	$1,139	$1,169	$1,255	$1,313	$1,259

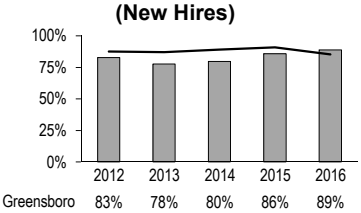
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Greensboro	1.20	1.10	1.07	0.99	1.14
Average	0.89	0.87	0.88	0.90	0.90

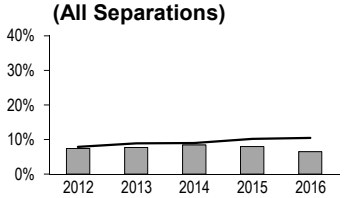
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



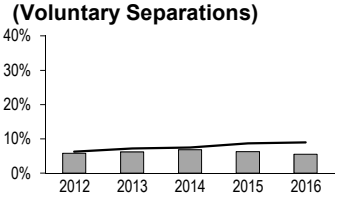
	2012	2013	2014	2015	2016
Greensboro	83%	78%	80%	86%	89%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



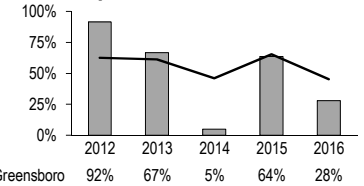
	2012	2013	2014	2015	2016
Greensboro	7.4%	7.7%	8.5%	8.0%	6.5%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



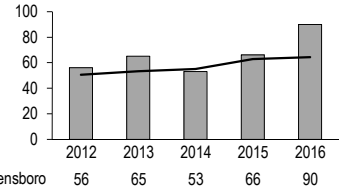
	2012	2013	2014	2015	2016
Greensboro	5.8%	6.2%	6.8%	6.3%	5.6%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Greensboro	92%	67%	5%	64%	28%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Greensboro	56	65	53	66	90
Average	50	53	55	63	64

Greenville Central Human Resources

Fiscal Year 2015–16

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 grievance by an employee in Greenville requires a written notice appealing a disciplinary action given to a supervisor . 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 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Median Family Income U.S. Census 2010	$50,395
County Unemployment Rate (2013) N.C. Employment Security Commission	8.5%

Service Profile

Central HR FTE Positions	
Administration	3.0
Generalist/Specialist	3.0
Staff Support/Clerical	3.0
Total Authorized Workforce	765.0
Authorized FTEs	760.25
Average Length of Service (Months)	123
Number of Position Requisitions	73
Employment Applications Processed	6,507
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	1
Positions Studied	126
Employee Turnover	
Voluntary Separations	54
Involuntary Separations	7
TOTAL SEPARATIONS	61
Formal Grievances Filed by Employees	NA
Equal Employment Opportunity Commission (EEOC) Complaints Filed	NA

Full Cost Profile

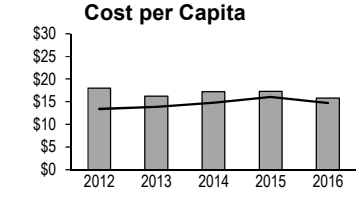
Cost Breakdown by Percentage	
Personal Services	61.1%
Operating Costs	38.4%
Capital Costs	0.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$846,578
Operating Costs	$532,645
Capital Costs	$7,050
TOTAL	$1,386,273

Greenville — Central Human Resources

Key: Greenville ■ Benchmarking Average — Fiscal Years 2012 through 2016

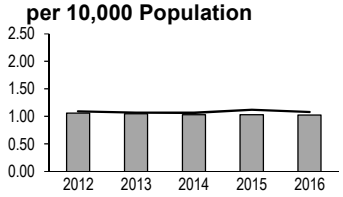
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Greenville	$17.98	$16.19	$17.24	$17.29	$15.76
Average	$13.43	$13.90	$14.80	$16.05	$14.73

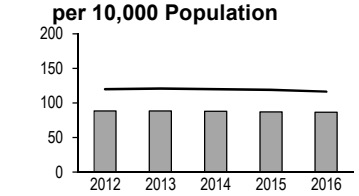
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greenville	1.06	1.04	1.03	1.03	1.02
Average	1.09	1.07	1.07	1.12	1.08

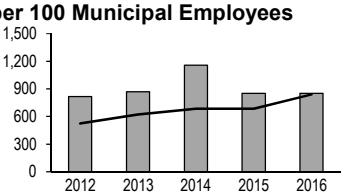
Workload Measures

Total Municipal FTEs per 10,000 Population



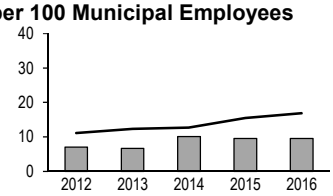
	2012	2013	2014	2015	2016
Greenville	88	88	88	87	86
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greenville	816	869	1,157	851	851
Average	525	622	684	685	840

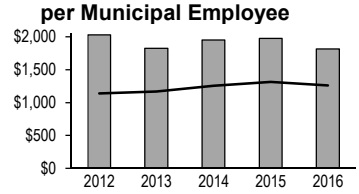
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Greenville	7.0	6.7	10.1	9.5	9.5
Average	11.1	12.3	12.7	15.5	16.9

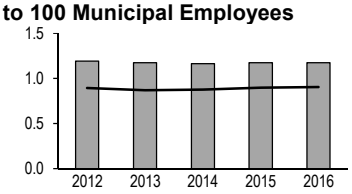
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Greenville	$2,026	$1,823	$1,948	$1,976	$1,812
Average	$1,139	$1,169	$1,255	$1,313	$1,259

Ratio of Human Resources Staff to 100 Municipal Employees



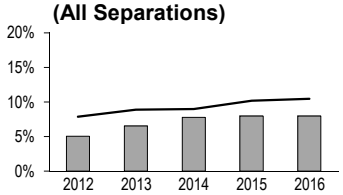
	2012	2013	2014	2015	2016
Greenville	1.19	1.18	1.17	1.18	1.18
Average	0.89	0.87	0.88	0.90	0.90

Effectiveness Measures

Probationary Period Completion Rate (New Hires)

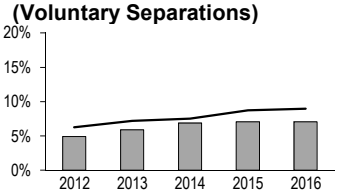
	2012	2013	2014	2015	2016
Greenville	96%	100%	91%	95%	95%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



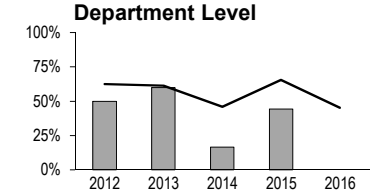
	2012	2013	2014	2015	2016
Greenville	5.0%	6.5%	7.8%	8.0%	8.0%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



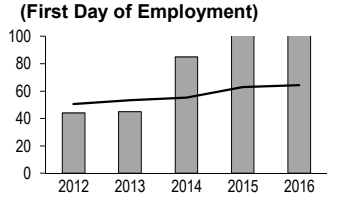
	2012	2013	2014	2015	2016
Greenville	4.9%	5.9%	6.9%	7.1%	7.1%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Greenville	50%	60%	17%	44%	
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Greenville	44	45	85	101	101
Average	50	53	55	63	64

Hickory Central Human Resources

Fiscal Year 2015–16

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 one compensation study during the fiscal year for 137 different positions.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
Median Family Income U.S. Census 2010	$54,093
County Unemployment Rate (2013) N.C. Employment Security Commission	9.6%

Service Profile

Central HR FTE Positions	
Administration	1.00
Generalist/Specialist	3.0
Staff Support/Clerical	2.00
Total Authorized Workforce	736.0
Authorized FTEs	695.0
Average Length of Service (Months)	121.31
Number of Position Requisitions	84
Employment Applications Processed	4,910
Length of Probationary Employment Period	12 months
Compensation Studies Completed	1
Positions Studied	137
Employee Turnover	
Voluntary Separations	94
Involuntary Separations	15
TOTAL SEPARATIONS	109
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	69.1%
Operating Costs	29.5%
Capital Costs	1.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$332,263
Operating Costs	$141,762
Capital Costs	$6,982
TOTAL	$481,007

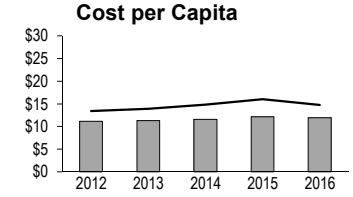
Hickory

Central Human Resources

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

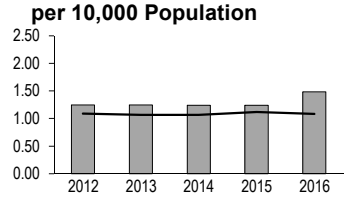
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Hickory	$11.18	$11.29	$11.56	$12.12	$11.92
Average	$13.43	$13.90	$14.80	$16.05	$14.73

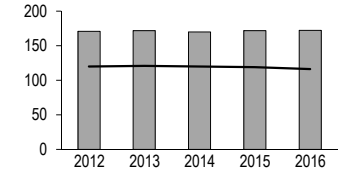
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	1.25	1.25	1.24	1.24	1.49
Average	1.09	1.07	1.07	1.12	1.08

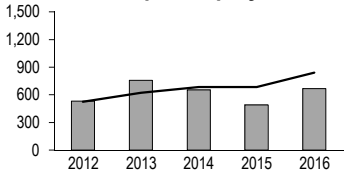
Workload Measures

Total Municipal FTEs per 10,000 Population



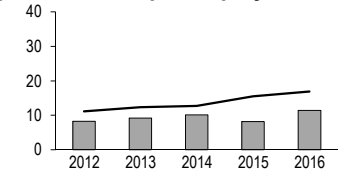
	2012	2013	2014	2015	2016
Hickory	171	172	170	172	172
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Hickory	532	759	654	489	667
Average	525	622	684	685	840

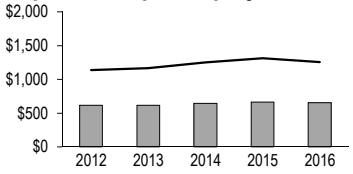
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Hickory	8.3	9.2	10.1	8.2	11.4
Average	11.1	12.3	12.7	15.5	16.9

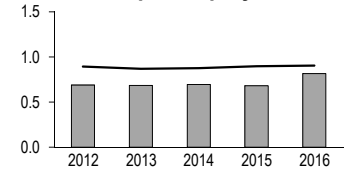
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Hickory	$618	$620	$645	$667	$654
Average	$1,139	$1,169	$1,255	$1,313	$1,259

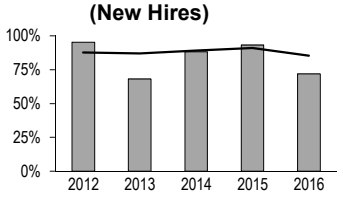
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Hickory	0.69	0.69	0.69	0.68	0.82
Average	0.89	0.87	0.88	0.90	0.90

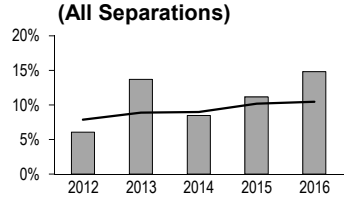
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



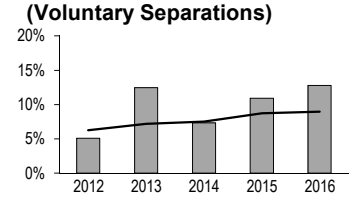
	2012	2013	2014	2015	2016
Hickory	95%	68%	88%	93%	72%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



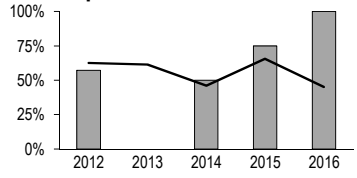
	2012	2013	2014	2015	2016
Hickory	6.1%	13.7%	8.5%	11.2%	14.8%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



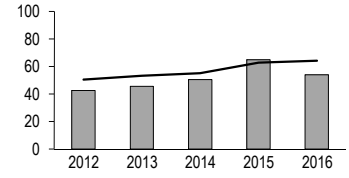
	2012	2013	2014	2015	2016
Hickory	5.1%	12.5%	7.4%	10.9%	12.8%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Hickory	57%		50%	75%	100%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Hickory	43	46	50	65	54
Average	50	53	55	63	64

High Point Central Human Resources

Fiscal Year 2015–16

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 regulations; and compliance with North Carolina workers' compensation regulations.

One compensation study was conducted during the most recent fiscal year covering 437 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 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Median Family Income U.S. Census 2010	$49,720
County Unemployment Rate (2013) N.C. Employment Security Commission	8.7%

Service Profile

Central HR FTE Positions	
Administration	5.0
Generalist/Specialist	6.5
Staff Support/Clerical	1.0
Total Authorized Workforce	1,637.0
Authorized FTEs	1,481.0
Average Length of Service (Months)	129.9
Number of Position Requisitions	356
Employment Applications Processed	6,541
Length of Probationary Employment Period	12 months
Compensation Studies Completed	1
Positions Studied	437
Employee Turnover	
Voluntary Separations	102
Involuntary Separations	34
TOTAL SEPARATIONS	136
Formal Grievances Filed by Employees	1
Equal Employment Opportunity Commission (EEOC) Complaints Filed	1

Full Cost Profile

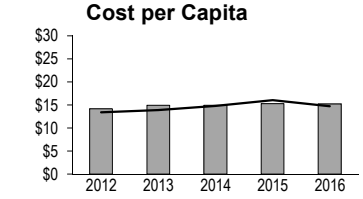
Cost Breakdown by Percentage	
Personal Services	71.3%
Operating Costs	27.8%
Capital Costs	1.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,188,096
Operating Costs	$463,269
Capital Costs	$16,111
TOTAL	$1,667,476

High Point — Central Human Resources

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

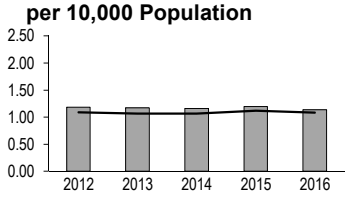
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
High Point	$14.19	$14.97	$14.94	$15.26	$15.19
Average	$13.43	$13.90	$14.80	$16.05	$14.73

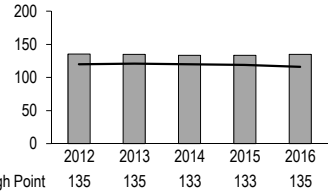
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	1.18	1.17	1.16	1.20	1.14
Average	1.09	1.07	1.07	1.12	1.08

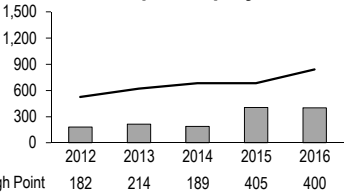
Workload Measures

Total Municipal FTEs per 10,000 Population



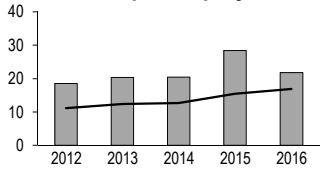
	2012	2013	2014	2015	2016
High Point	135	135	133	133	135
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
High Point	182	214	189	405	400
Average	525	622	684	685	840

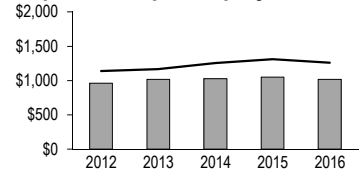
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
High Point	18.5	20.3	20.5	28.4	21.7
Average	11.1	12.3	12.7	15.5	16.9

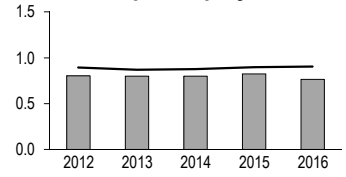
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
High Point	$961	$1,019	$1,029	$1,051	$1,019
Average	$1,139	$1,169	$1,255	$1,313	$1,259

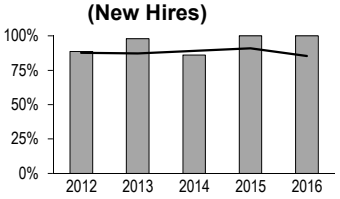
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
High Point	0.80	0.80	0.80	0.82	0.76
Average	0.89	0.87	0.88	0.90	0.90

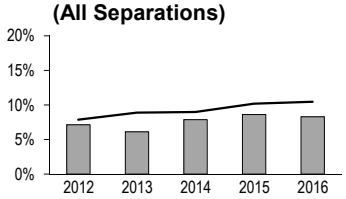
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



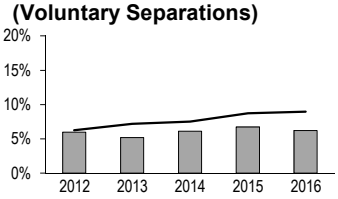
	2012	2013	2014	2015	2016
High Point	89%	98%	86%	100%	100%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



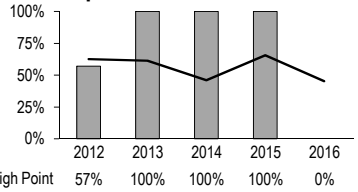
	2012	2013	2014	2015	2016
High Point	7.1%	6.1%	7.9%	8.6%	8.3%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



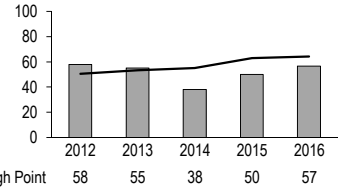
	2012	2013	2014	2015	2016
High Point	6.0%	5.2%	6.1%	6.7%	6.2%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
High Point	57%	100%	100%	100%	0%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
High Point	58	55	38	50	57
Average	50	53	55	63	64

Raleigh Central Human Resources

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Raleigh's Human Resource Department is organized around work units covering benefits, which includes employee health and wellness, employee training and organizational development, talent acquisition, compensation and HRIS, and safety. In addition, the Department has three business partners who align with the city's assistant city managers.

The City's probationary period for law enforcement officers is twelve months from the date of employement or successful completion of field training. For firefighters, the probationary period is from the date of employment to six months after graduation from the academy. For all other employees, the probation period lasts six months from the date of employment.

One compensation study covering 704 positions was conducted during the fiscal year. A market review of benchmark jobs was conducted for comparison.

All applications for employment must be completed electronically. HR conducts an initial scan based on minimum qualifications and secondarily by screening questions developed by the hiring manager.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Median Family Income U.S. Census 2010	$68,678
County Unemployment Rate (2013) N.C. Employment Security Commission	8.6%

Service Profile

Central HR FTE Positions	
Administration	13.0
Generalist/Specialist	14.0
Staff Support/Clerical	4.0
Total Authorized Workforce	3,886.0
Authorized FTEs	3,886.0
Average Length of Service (Months)	120
Number of Position Requisitions	796
Employment Applications Processed	95,074
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	1
Positions Studied	704
Employee Turnover	
Voluntary Separations	262
Involuntary Separations	29
TOTAL SEPARATIONS	291
Formal Grievances Filed by Employees	29
Equal Employment Opportunity Commission (EEOC) Complaints Filed	4

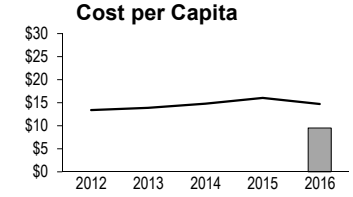
Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	70.8%
Operating Costs	28.0%
Capital Costs	1.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,969,225
Operating Costs	$1,175,224
Capital Costs	$51,571
TOTAL	$4,196,020

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

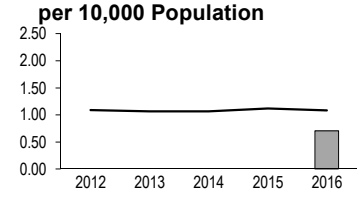
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Raleigh					$9.52
Average	$13.43	$13.90	$14.80	$16.05	$14.73

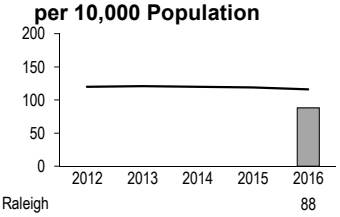
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					0.70
Average	1.09	1.07	1.07	1.12	1.08

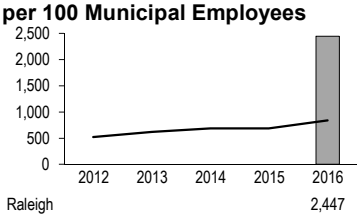
Workload Measures

Total Municipal FTEs per 10,000 Population



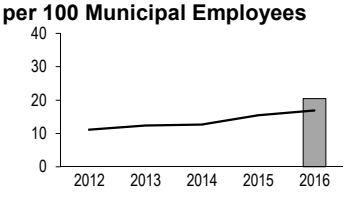
	2012	2013	2014	2015	2016
Raleigh					88
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Raleigh					2,447
Average	525	622	684	685	840

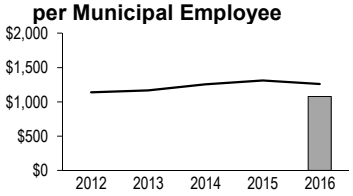
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Raleigh					20.5
Average	11.1	12.3	12.7	15.5	16.9

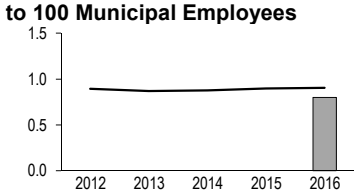
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Raleigh					$1,080
Average	$1,139	$1,169	$1,255	$1,313	$1,259

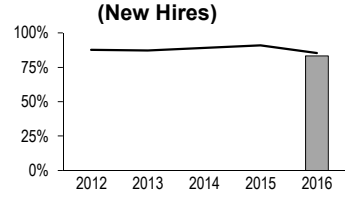
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Raleigh					0.80
Average	0.89	0.87	0.88	0.90	0.90

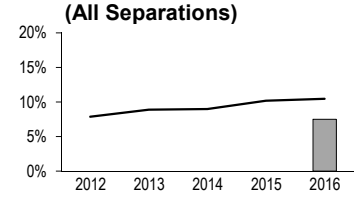
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



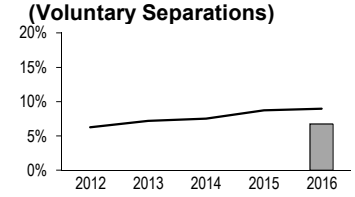
	2012	2013	2014	2015	2016
Raleigh					83%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



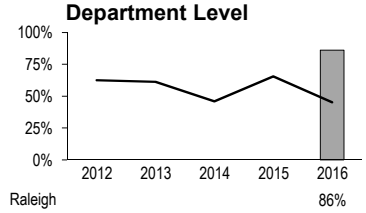
	2012	2013	2014	2015	2016
Raleigh					7.5%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



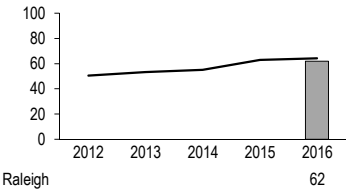
	2012	2013	2014	2015	2016
Raleigh					6.7%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Raleigh					86%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Raleigh					62
Average	50	53	55	63	64

Salisbury Central Human Resources

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Salisbury's Human Resources Department operates as an internal support service reporting directly to the Assistant City Manager for Human Resources. Human Resources handles the daily management of human capital while also helping to support community functions such as the Human Relations Council and the Salisbury Youth Council. The human resources function in Salisbury is a centralized unit with seven staff members

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 for the city.

The city's probationary period for new general employees is six months and twelve months for police and fire employees.

Compensation studies covering five positions were conducted during the fiscal year.

Conditions Affecting Service, Performance, and Costs

Municipal Profile

Population (OSBM 2015)	33,955
Land Area (Square Miles)	22.22
Persons per Square Mile	1,528
Median Family Income U.S. Census 2010	$40,192
County Unemployment Rate (2013) N.C. Employment Security Commission	8.6%

Service Profile

Central HR FTE Positions	
Administration	2.0
Generalist/Specialist	4.0
Staff Support/Clerical	1.0
Total Authorized Workforce	433.0
Authorized FTEs	433.0
Average Length of Service (Months)	108
Number of Position Requisitions	83
Employment Applications Processed	1,586
Length of Probationary Employment Period	6 or 12 months
Compensation Studies Completed	0
Positions Studied	5
Employee Turnover	
Voluntary Separations	57
Involuntary Separations	18
TOTAL SEPARATIONS	75
Formal Grievances Filed by Employees	4
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

Full Cost Profile

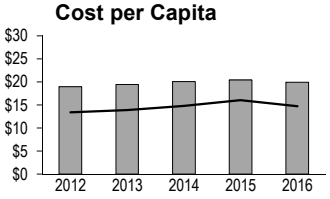
Cost Breakdown by Percentage	
Personal Services	77.6%
Operating Costs	22.4%
Capital Costs	0.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$530,894
Operating Costs	$153,414
Capital Costs	$0
TOTAL	$684,308

Salisbury — Central Human Resources

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

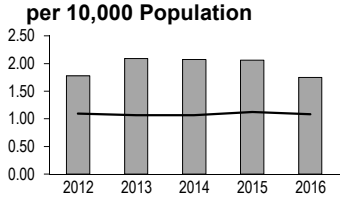
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Salisbury	$19.00	$19.45	$20.09	$20.46	$19.96
Average	$13.43	$13.90	$14.80	$16.05	$14.73

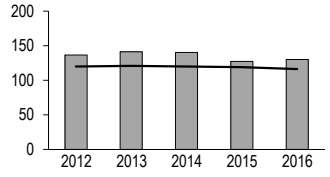
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	1.78	2.09	2.08	2.06	1.75
Average	1.09	1.07	1.07	1.12	1.08

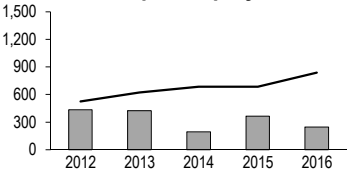
Workload Measures

Total Municipal FTEs per 10,000 Population



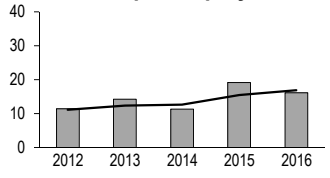
	2012	2013	2014	2015	2016
Salisbury	136	141	140	128	130
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Salisbury	435	424	194	366	247
Average	525	622	684	685	840

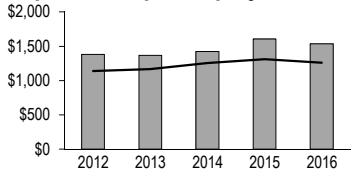
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Salisbury	11.4	14.3	11.3	19.2	16.1
Average	11.1	12.3	12.7	15.5	16.9

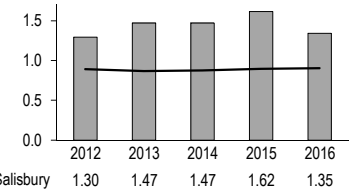
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Salisbury	$1,383	$1,366	$1,423	$1,605	$1,534
Average	$1,139	$1,169	$1,255	$1,313	$1,259

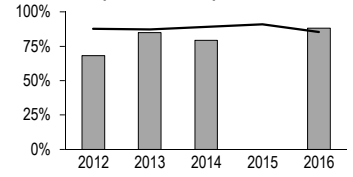
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Salisbury	1.30	1.47	1.47	1.62	1.35
Average	0.89	0.87	0.88	0.90	0.90

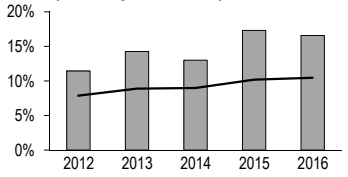
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



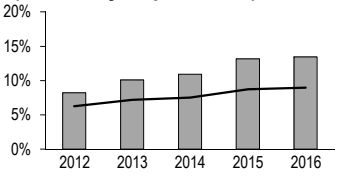
	2012	2013	2014	2015	2016
Salisbury	68%	85%	79%		88%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



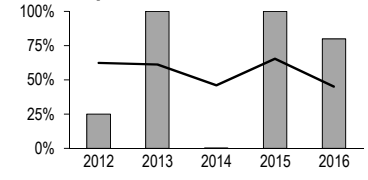
	2012	2013	2014	2015	2016
Salisbury	11.4%	14.3%	13.0%	17.3%	16.6%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



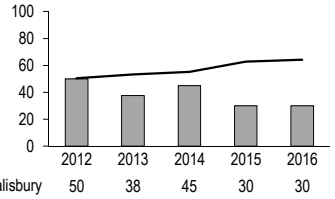
	2012	2013	2014	2015	2016
Salisbury	8.2%	10.1%	10.9%	13.2%	13.5%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Salisbury	25%	100%	0%	100%	80%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Salisbury	50	38	45	30	30
Average	50	53	55	63	64

Wilson — Central Human Resources

Fiscal Year 2015–16

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 one compensation study during the fiscal year covering thirteen positions.

The city's probationary period is twelve months for new city employees.

Conditions Affecting Service, Performance, and Costs

Wilson switched several contract positions working in HR to become city employees in FY 2013–14 causing a modest rise in service costs.

Municipal Profile

Population (OSBM 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Median Family Income U.S. Census 2010	$43,442
County Unemployment Rate (2013) N.C. Employment Security Commission	11.7%

Service Profile

Central HR FTE Positions	
Administration	0.5
Generalist/Specialist	3.0
Staff Support/Clerical	2.0
Total Authorized Workforce	760.0
Authorized FTEs	727.0
Average Length of Service (Months)	123
Number of Position Requisitions	75
Employment Applications Processed	2,395
Length of Probationary Employment Period	12 months
Compensation Studies Completed	1
Positions Studied	13
Employee Turnover	
Voluntary Separations	43
Involuntary Separations	16
TOTAL SEPARATIONS	59
Formal Grievances Filed by Employees	5
Equal Employment Opportunity Commission (EEOC) Complaints Filed	9

Full Cost Profile

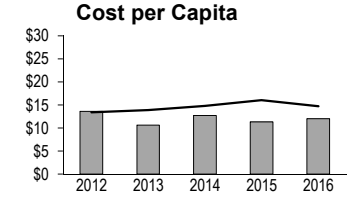
Cost Breakdown by Percentage	
Personal Services	74.8%
Operating Costs	22.6%
Capital Costs	2.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$444,061
Operating Costs	$134,011
Capital Costs	$15,243
TOTAL	$593,315

Wilson — Central Human Resources

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

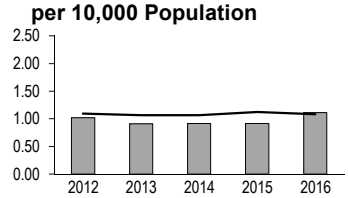
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Wilson	$13.60	$10.64	$12.71	$11.34	$12.02
Average	$13.43	$13.90	$14.80	$16.05	$14.73

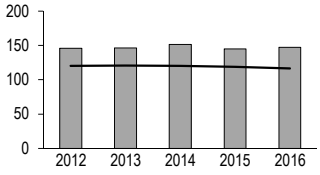
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	1.02	0.91	0.92	0.91	1.11
Average	1.09	1.07	1.07	1.12	1.08

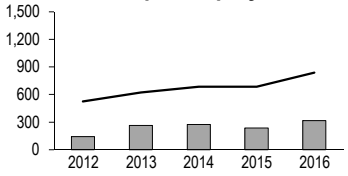
Workload Measures

Total Municipal FTEs per 10,000 Population



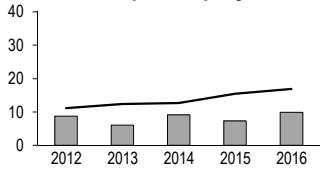
	2012	2013	2014	2015	2016
Wilson	146	146	152	145	147
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Wilson	142	264	274	236	315
Average	525	622	684	685	840

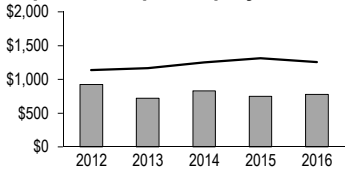
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Wilson	8.7	6.1	9.1	7.2	9.9
Average	11.1	12.3	12.7	15.5	16.9

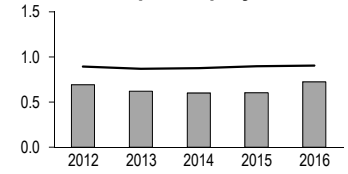
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Wilson	$926	$724	$832	$750	$781
Average	$1,139	$1,169	$1,255	$1,313	$1,259

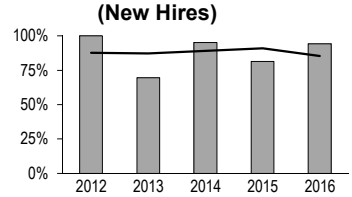
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Wilson	0.69	0.62	0.60	0.60	0.72
Average	0.89	0.87	0.88	0.90	0.90

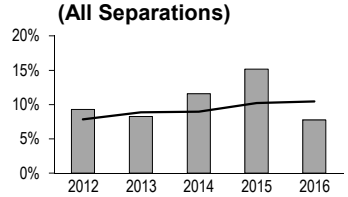
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



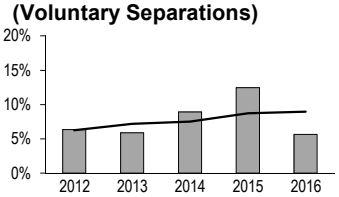
	2012	2013	2014	2015	2016
Wilson	100%	70%	95%	82%	94%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



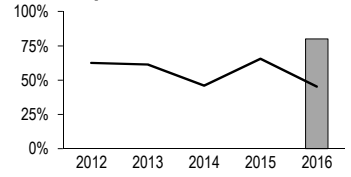
	2012	2013	2014	2015	2016
Wilson	9.3%	8.3%	11.6%	15.2%	7.8%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



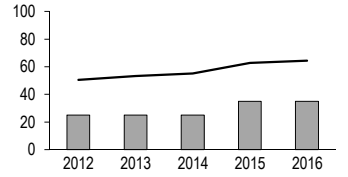
	2012	2013	2014	2015	2016
Wilson	6.4%	5.9%	8.9%	12.5%	5.7%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Wilson		0%			80%
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Wilson	25	25	25	35	35
Average	50	53	55	63	64

Winston-Salem Central Human Resources

Fiscal Year 2015–16

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 two compensation studies during the fiscal year covering 65 positions.

Winston-Salem began having employees go through a probationary period in FY 2015–16 for the first time. The city's probationary period for new general employees is six months and twelve months for police and fire personnel. No data are available for the measure "probationary period completion rate (new hires)" before FY 2015–16.

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 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Median Family Income U.S. Census 2010	$51,491
County Unemployment Rate (2013) N.C. Employment Security Commission	8.0%

Service Profile

Central HR FTE Positions	
Administration	3.0
Generalist/Specialist	9.0
Staff Support/Clerical	3.0
Total Authorized Workforce	2,795.0
Authorized FTEs	2,423.0
Average Length of Service (Months)	137
Number of Position Requisitions	500
Employment Applications Processed	19,806
Length of Probationary Employment Period	6 & 12 months
Compensation Studies Completed	2
Positions Studied	65
Employee Turnover	
Voluntary Separations	225
Involuntary Separations	42
TOTAL SEPARATIONS	267
Formal Grievances Filed by Employees	66
Equal Employment Opportunity Commission (EEOC) Complaints Filed	0

Full Cost Profile

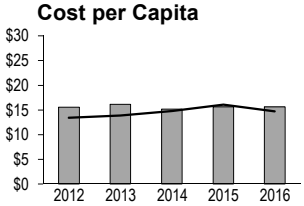
Cost Breakdown by Percentage	
Personal Services	36.6%
Operating Costs	59.9%
Capital Costs	3.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,369,641
Operating Costs	$2,241,058
Capital Costs	$127,972
TOTAL	$3,738,671

Winston-Salem — Central Human Resources

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

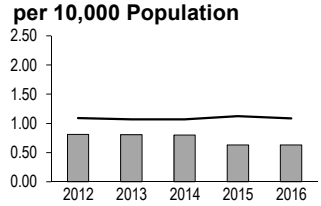
Resource Measures

Human Resources Services Cost per Capita



	2012	2013	2014	2015	2016
Winston-Salem	$15.59	$16.13	$15.20	$15.62	$15.65
Average	$13.43	$13.90	$14.80	$16.05	$14.73

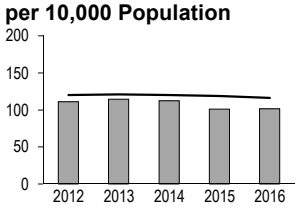
Human Resources FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	0.81	0.81	0.80	0.63	0.63
Average	1.09	1.07	1.07	1.12	1.08

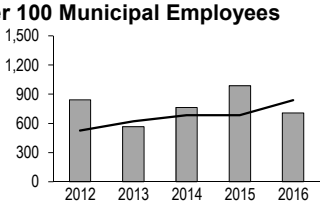
Workload Measures

Total Municipal FTEs per 10,000 Population



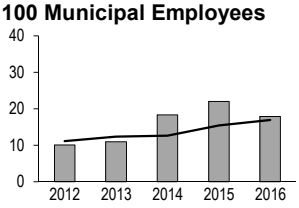
	2012	2013	2014	2015	2016
Winston-Salem	111	115	112	101	101
Average	120	121	120	119	116

Applications Processed per 100 Municipal Employees



	2012	2013	2014	2015	2016
Winston-Salem	843	567	763	989	709
Average	525	622	684	685	840

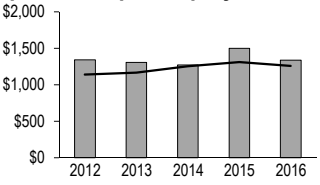
Position Requisitions per 100 Municipal Employees



	2012	2013	2014	2015	2016
Winston-Salem	10.1	11.0	18.3	22.0	17.9
Average	11.1	12.3	12.7	15.5	16.9

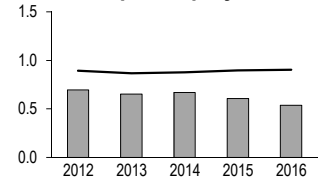
Efficiency Measures

Human Resources Cost per Municipal Employee



	2012	2013	2014	2015	2016
Winston-Salem	$1,342	$1,308	$1,274	$1,502	$1,338
Average	$1,139	$1,169	$1,255	$1,313	$1,259

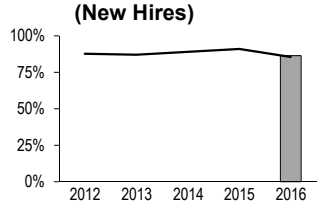
Ratio of Human Resources Staff to 100 Municipal Employees



	2012	2013	2014	2015	2016
Winston-Salem	0.70	0.65	0.67	0.61	0.54
Average	0.89	0.87	0.88	0.90	0.90

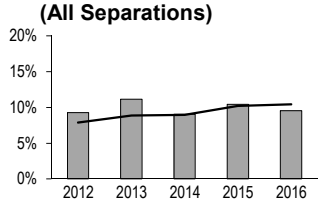
Effectiveness Measures

Probationary Period Completion Rate (New Hires)



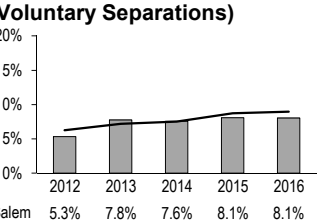
	2012	2013	2014	2015	2016
Winston-Salem					86%
Average	88%	87%	89%	91%	85%

Employee Turnover Rate (All Separations)



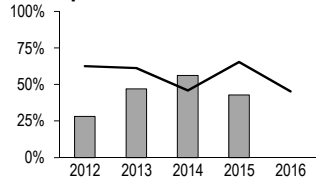
	2012	2013	2014	2015	2016
Winston-Salem	9.3%	11.2%	9.0%	10.4%	9.6%
Average	7.9%	8.9%	9.0%	10.2%	10.5%

Employee Turnover Rate (Voluntary Separations)



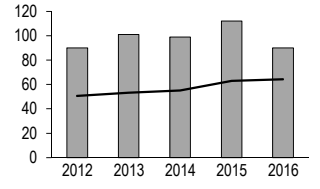
	2012	2013	2014	2015	2016
Winston-Salem	5.3%	7.8%	7.6%	8.1%	8.1%
Average	6.2%	7.2%	7.5%	8.7%	9.0%

Percentage of Grievances Resolved at Department Level



	2012	2013	2014	2015	2016
Winston-Salem	28%	47%	56%	43%	
Average	63%	61%	46%	65%	45%

Average Days from Post Date to Hire Date (First Day of Employment)



	2012	2013	2014	2015	2016
Winston-Salem	90	101	99	112	90
Average	50	53	55	63	64


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 Thousand 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 including treatment staff, line maintenance staff, meter readers, billing staff, and others to bring drinking water to customer taps. 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 meet not only 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 Thousand 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	47,525	24.0	3.4	Shared with Cary	NA	249.9	15,216	24.0
Asheville	124,300	183.0	19.9	3	43.5	1,690.5	58,570	149.0
Burlington	52,240	43.9	10.8	2	34.0	428.2	23,516	50.5
Cary	183,745	75.5	14.6	1	40.0	1,052.7	67,188	79.5
Charlotte	954,644	546.0	107.1	3	242.0	4,269.0	285,388	376.0
Concord	87,696	169.6	10.6	2	24.0	709.0	36,277	81.0
Greensboro	280,801	148.0	32.6	2	54.0	1,493.6	103,777	153.0
Hickory	99,530	326.0	11.1	1	32.0	931.0	29,111	57.5
High Point	110,638	64.0	12.8	1	24.0	617.1	42,115	61.4
Raleigh	549,112	299.0	49.0	2	102.0	2,373.0	185,160	328.0
Salisbury	53,500	47.5	9.3	1	25.0	421.1	19,474	39.5
Wilson	51,600	39.0	8.7	2	22.0	418.0	21,701	43.0
Winston-Salem	366,471	366.0	36.6	3	91.0	2,276.7	126,638	173.0

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

Apex Water Services

Fiscal Year 2015–16

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, all water meters are read by automatic means. Replacement of meters is based on a combination of factors, as is water line replacement.

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	47,525
Service Land Area (Square Miles)	24.0
Persons per Square Mile	1,980
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	4.0
Billing/Collection	4.0
Other	2.0
Total	24.0
Number of Treatment Plants	NA
Total Treatment Capacity	NA
Average Daily Demand	3.4 MG
Miles of Main Line Pipe	250
Average Age of Main Line Pipe	35 years
Number of Breaks/Leaks	82
Number of Water Meters	15,216
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$7,039,567

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	26.6%
Operating Costs	44.1%
Capital Costs	29.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,566,136
Operating Costs	$2,598,673
Capital Costs	$1,723,662
TOTAL	$5,888,471

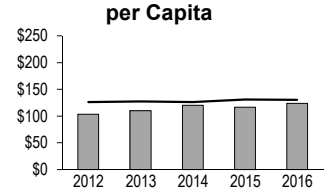
Apex

Water Services

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

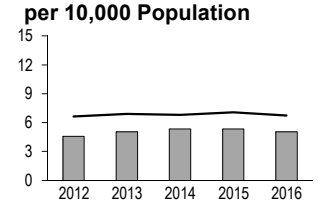
Resource Measures

Water Services Cost per Capita



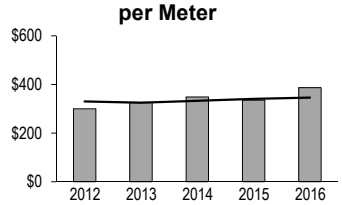
	2012	2013	2014	2015	2016
Apex	$103	$110	$120	$117	$124
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	4.6	5.0	5.4	5.3	5.0
Average	6.7	6.9	6.8	7.1	6.7

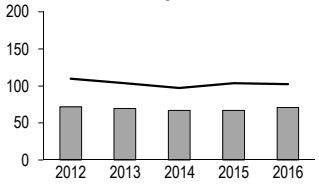
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Apex	$300	$327	$349	$336	$387
Average	$331	$325	$333	$340	$346

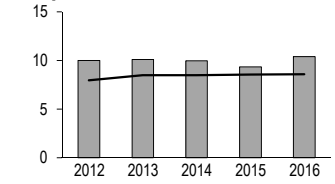
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Apex	71.9	69.4	67.0	67.0	70.8
Average	109.9	103.7	97.2	103.8	102.4

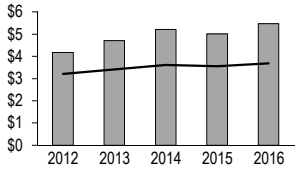
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Apex	10.0	10.1	10.0	9.4	10.4
Average	8.0	8.5	8.5	8.6	8.6

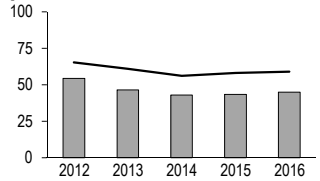
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



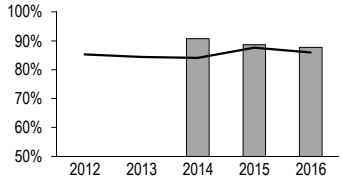
	2012	2013	2014	2015	2016
Apex	$4.17	$4.70	$5.21	$5.01	$5.47
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Apex	54.3	46.6	43.1	43.5	44.9
Average	65.3	61.0	56.2	58.2	59.0

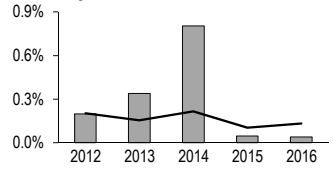
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Apex			91%	89%	88%
Average	85%	84%	84%	88%	86%

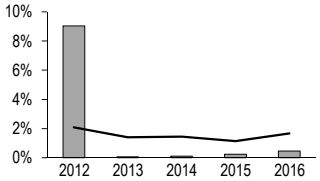
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



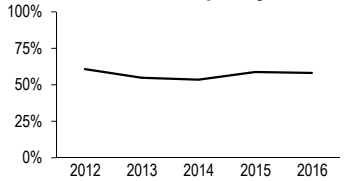
	2012	2013	2014	2015	2016
Apex	0.20%	0.34%	0.80%	0.05%	0.04%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



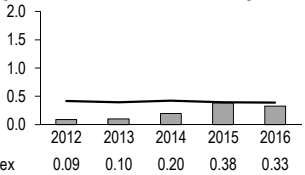
	2012	2013	2014	2015	2016
Apex	9.04%	0.06%	0.10%	0.24%	0.46%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



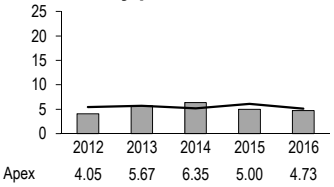
	2012	2013	2014	2015	2016
Apex					
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Apex	0.09	0.10	0.20	0.38	0.33
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Apex	4.05	5.67	6.35	5.00	4.73
Average	5.45	5.67	5.18	6.11	5.11

Asheville Water Services

Fiscal Year 2015–16

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 98 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 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 create 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.

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	43.0
Line Crews	42.0
Meter Readers	2.0
Billing/Collection	23.0
Other	39.0
Total	149.0
Number of Treatment Plants	3
Total Treatment Capacity	43.5 MG
Average Daily Demand	19.9 MG
Miles of Main Line Pipe	1,691
Average Age of Main Line Pipe	56 years
Number of Breaks/Leaks	814
Number of Water Meters	58,570
Percent of Meters Read Automatically	98.0%
Total Revenues Collected	$38,392,875

Full Cost Profile

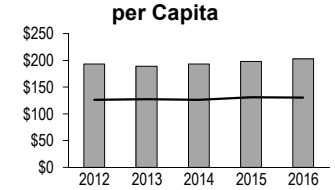
Cost Breakdown by Percentage	
Personal Services	34.9%
Operating Costs	34.9%
Capital Costs	30.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,804,361
Operating Costs	$8,818,373
Capital Costs	$7,624,127
TOTAL	$25,246,861

Asheville — Water Services

Key: Asheville ■ Benchmarking Average — Fiscal Years 2012 through 2016

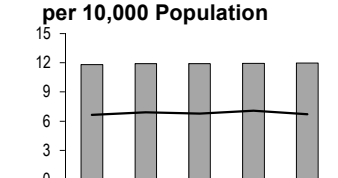
Resource Measures

Water Services Cost per Capita



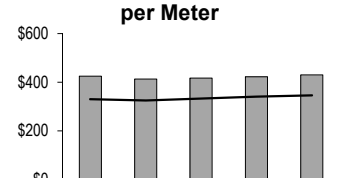
	2012	2013	2014	2015	2016
Asheville	$193	$189	$193	$198	$203
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Asheville	11.8	11.9	11.9	12.0	12.0
Average	6.7	6.9	6.8	7.1	6.7

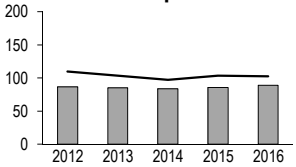
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Asheville	$426	$413	$417	$423	$431
Average	$331	$325	$333	$340	$346

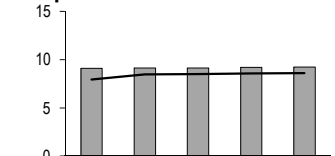
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Asheville	86.5	85.0	84.0	85.6	89.2
Average	109.9	103.7	97.2	103.8	102.4

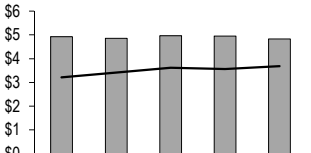
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Asheville	9.1	9.1	9.1	9.2	9.2
Average	8.0	8.5	8.5	8.6	8.6

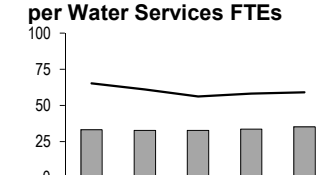
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



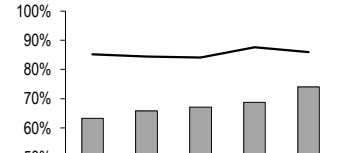
	2012	2013	2014	2015	2016
Asheville	$4.92	$4.86	$4.97	$4.95	$4.83
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Asheville	33.2	32.7	32.6	33.5	35.1
Average	65.3	61.0	56.2	58.2	59.0

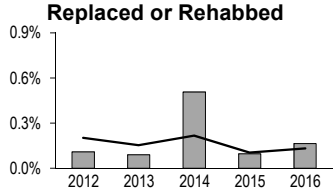
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Asheville	63%	66%	67%	69%	74%
Average	85%	84%	84%	88%	86%

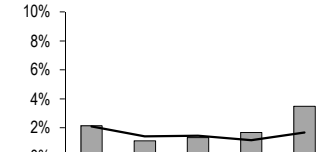
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



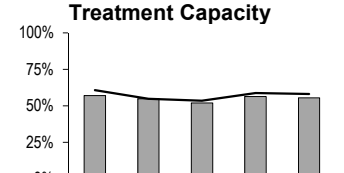
	2012	2013	2014	2015	2016
Asheville	0.11%	0.09%	0.51%	0.10%	0.17%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



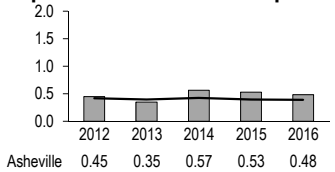
	2012	2013	2014	2015	2016
Asheville	2.14%	1.08%	1.32%	1.67%	3.49%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



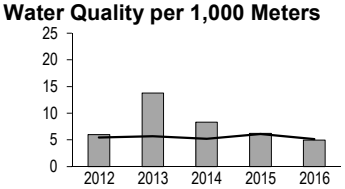
	2012	2013	2014	2015	2016
Asheville	57%	55%	52%	56%	55%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Asheville	0.45	0.35	0.57	0.53	0.48
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Asheville	5.99	13.81	8.33	6.20	4.93
Average	5.45	5.67	5.18	6.11	5.11

Burlington Water Services

Fiscal Year 2015–16

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 52,000 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 16 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	52,240
Service Land Area (Square Miles)	43.9
Persons per Square Mile	1,190
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	19.0
Line Crews	10.0
Meter Readers	4.0
Billing/Collection	10.0
Other	7.5
Total	50.5
Number of Treatment Plants	2
Total Treatment Capacity	34.0 MG
Average Daily Demand	10.8 MG
Miles of Main Line Pipe	428
Average Age of Main Line Pipe	48 years
Number of Breaks/Leaks	36
Number of Water Meters	23,516
Percent of Meters Read Automatically	16.1%
Total Revenues Collected	$13,404,879

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	$1,470,709
Operating Costs	$2,477,664
Capital Costs	$2,388,480
TOTAL	$6,336,853

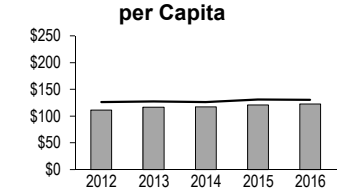
Burlington

Water Services

Key: Burlington ■ Benchmarking Average — Fiscal Years 2012 through 2016

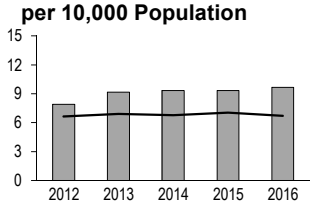
Resource Measures

Water Services Cost per Capita



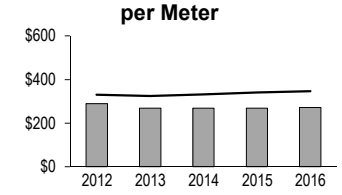
	2012	2013	2014	2015	2016
Burlington	$111	$117	$117	$121	$123
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Burlington	7.9	9.2	9.3	9.3	9.7
Average	6.7	6.9	6.8	7.1	6.7

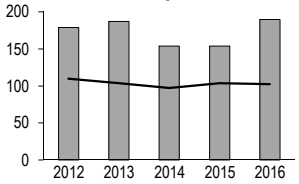
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Burlington	$290	$269	$269	$270	$272
Average	$331	$325	$333	$340	$346

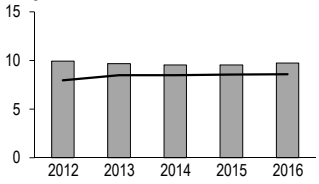
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Burlington	179.0	187.2	154.0	154.0	189.5
Average	109.9	103.7	97.2	103.8	102.4

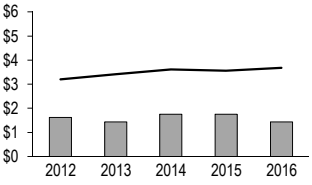
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Burlington	10.0	9.7	9.5	9.6	9.8
Average	8.0	8.5	8.5	8.6	8.6

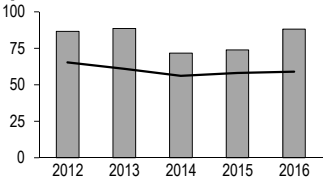
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



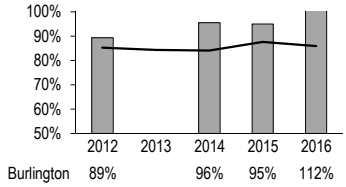
	2012	2013	2014	2015	2016
Burlington	$1.62	$1.43	$1.75	$1.75	$1.44
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Burlington	86.7	88.7	71.7	73.9	88.3
Average	65.3	61.0	56.2	58.2	59.0

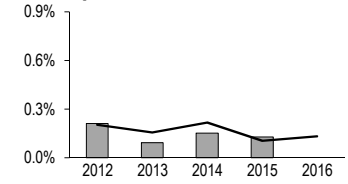
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Burlington	89%		96%	95%	112%
Average	85%	84%	84%	88%	86%

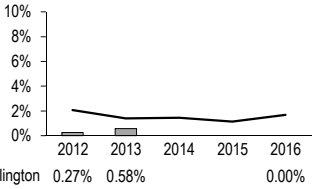
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



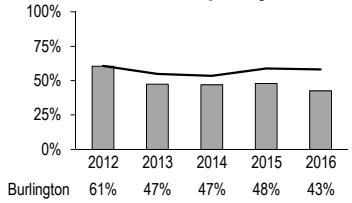
	2012	2013	2014	2015	2016
Burlington	0.21%	0.09%	0.15%	0.13%	0.00%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



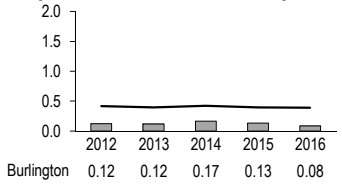
	2012	2013	2014	2015	2016
Burlington	0.27%	0.58%			0.00%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



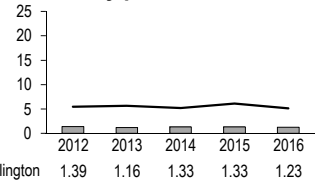
	2012	2013	2014	2015	2016
Burlington	61%	47%	47%	48%	43%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Burlington	0.12	0.12	0.17	0.13	0.08
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Burlington	1.39	1.16	1.33	1.33	1.23
Average	5.45	5.67	5.18	6.11	5.11

Cary Water Services

Fiscal Year 2015–16

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 184,000 people are served by the system, covering an area of seventy-six 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 100 percent of meters being read automatically with a Sensus Flexnet system. Meters are replaced approximately every seventeen years.

Conditions Affecting Service, Performance, and Costs

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 began 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	183,745
Service Land Area (Square Miles)	75.5
Persons per Square Mile	2,434
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	21.0
Line Crews	35.9
Meter Readers	0.0
Billing/Collection	8.8
Other	13.8
Total	79.5
Number of Treatment Plants	1
Total Treatment Capacity	40.0 MG
Average Daily Demand	14.6 MG
Miles of Main Line Pipe	1,053
Average Age of Main Line Pipe	NA
Number of Breaks/Leaks	178
Number of Water Meters	67,188
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$28,157,513

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	29.6%
Operating Costs	36.4%
Capital Costs	34.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,756,432
Operating Costs	$8,290,680
Capital Costs	$7,749,372
TOTAL	$22,796,484

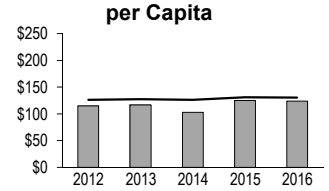
Cary

Water Services

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

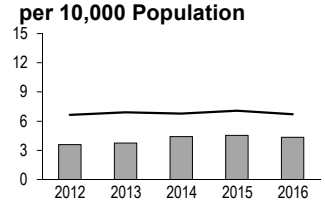
Resource Measures

Water Services Cost per Capita



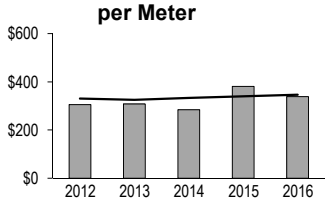
	2012	2013	2014	2015	2016
Cary	$115	$117	$103	$125	$124
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	3.6	3.7	4.4	4.5	4.3
Average	6.7	6.9	6.8	7.1	6.7

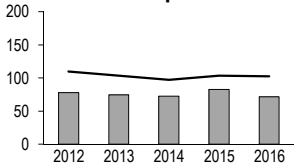
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Cary	$306	$308	$284	$381	$339
Average	$331	$325	$333	$340	$346

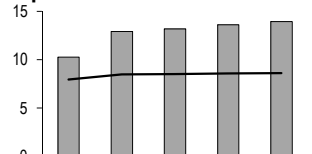
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Cary	77.8	74.5	72.9	82.8	71.6
Average	109.9	103.7	97.2	103.8	102.4

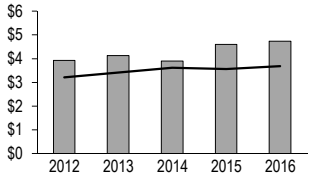
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Cary	10.3	12.9	13.2	13.6	13.9
Average	8.0	8.5	8.5	8.6	8.6

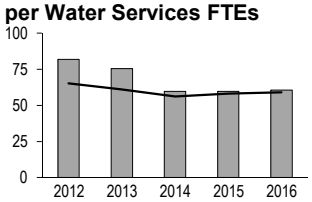
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



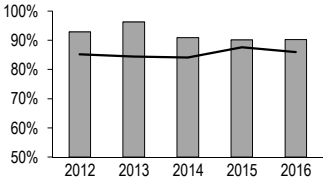
	2012	2013	2014	2015	2016
Cary	$3.93	$4.13	$3.90	$4.61	$4.74
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Cary	81.8	75.5	59.7	59.8	60.5
Average	65.3	61.0	56.2	58.2	59.0

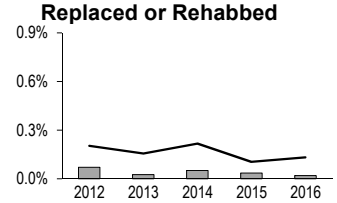
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Cary	93%	96%	91%	90%	90%
Average	85%	84%	84%	88%	86%

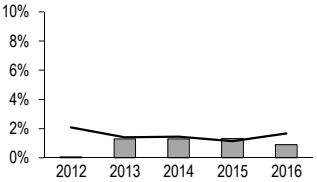
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



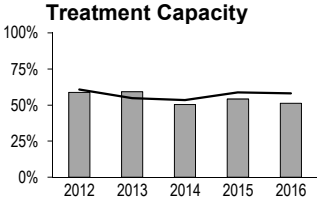
	2012	2013	2014	2015	2016
Cary	0.07%	0.03%	0.05%	0.04%	0.02%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



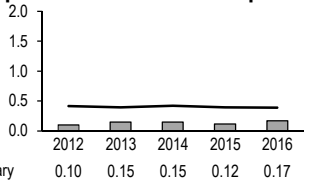
	2012	2013	2014	2015	2016
Cary	0.06%	1.28%	1.28%	1.31%	0.91%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



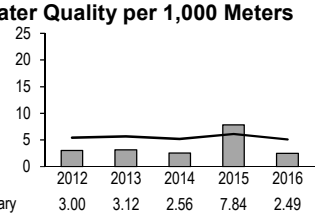
	2012	2013	2014	2015	2016
Cary	59%	59%	50%	54%	51%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Cary	0.10	0.15	0.15	0.12	0.17
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Cary	3.00	3.12	2.56	7.84	2.49
Average	5.45	5.67	5.18	6.11	5.11

Charlotte — Water Services

Fiscal Year 2015–16

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 955,000 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 rapid mix, flocculation, settling, filtration, and chemical application.

The estimated average age of main line pipes in the system is twenty-nine 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

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

The costs of water services as captured here do not include debt service but do capture depreciation.

The reduction in reported leaks and breaks over time 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	954,644
Service Land Area (Square Miles)	546.0
Persons per Square Mile	1,748
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	60.0
Line Crews	151.0
Meter Readers	4.0
Billing/Collection	9.0
Other	152.0
Total	376.0
Number of Treatment Plants	3
Total Treatment Capacity	242.0 MG
Average Daily Demand	107.1 MG
Miles of Main Line Pipe	4,269
Average Age of Main Line Pipe	29 years
Number of Breaks/Leaks	3,032
Number of Water Meters	285,388
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$168,081,802

Full Cost Profile

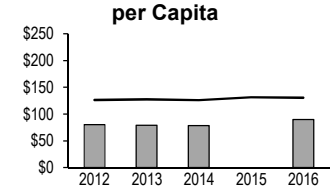
Cost Breakdown by Percentage	
Personal Services	20.1%
Operating Costs	32.5%
Capital Costs	47.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$17,217,407
Operating Costs	$27,867,531
Capital Costs	$40,535,795
TOTAL	$85,620,733

Charlotte — Water Services

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

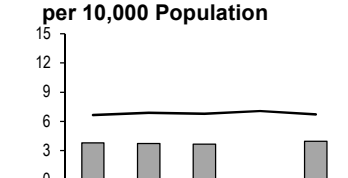
Resource Measures

Water Services Cost per Capita



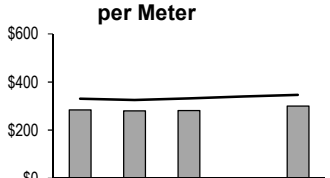
	2012	2013	2014	2015	2016
Charlotte	$80	$79	$79		$90
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	3.8	3.7	3.7		3.9
Average	6.7	6.9	6.8	7.1	6.7

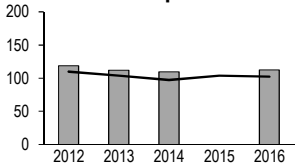
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Charlotte	$285	$280	$282		$300
Average	$331	$325	$333	$340	$346

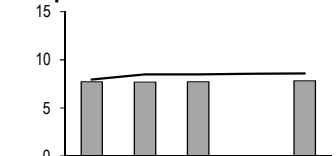
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Charlotte	118.9	112.1	109.6		112.3
Average	109.9	103.7	97.2	103.8	102.4

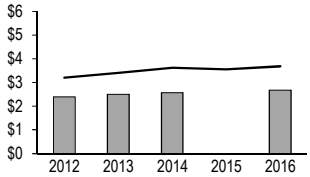
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Charlotte	7.7	7.7	7.7		7.8
Average	8.0	8.5	8.5	8.6	8.6

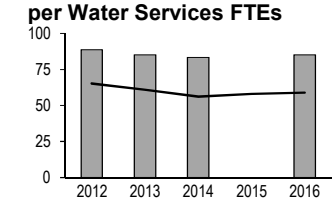
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



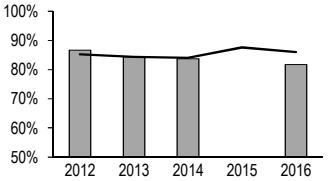
	2012	2013	2014	2015	2016
Charlotte	$2.39	$2.50	$2.58		$2.67
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Charlotte	88.6	85.2	83.5		85.2
Average	65.3	61.0	56.2	58.2	59.0

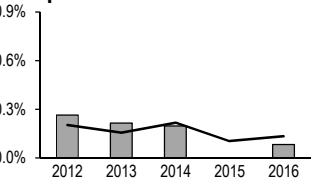
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Charlotte	87%	84%	84%		82%
Average	85%	84%	84%	88%	86%

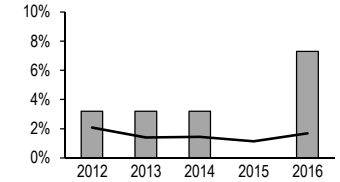
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



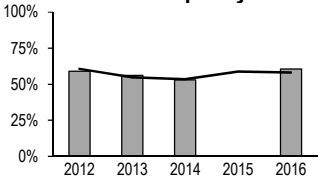
	2012	2013	2014	2015	2016
Charlotte	0.26%	0.22%	0.20%		0.08%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



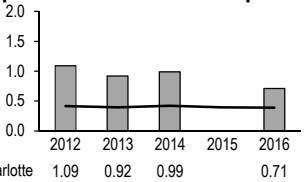
	2012	2013	2014	2015	2016
Charlotte	3.20%	3.20%	3.20%		7.29%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



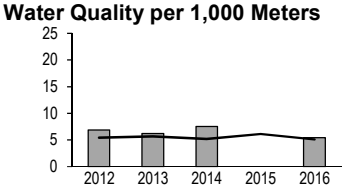
	2012	2013	2014	2015	2016
Charlotte	59%	56%	53%		60%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Charlotte	1.09	0.92	0.99		0.71
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Charlotte	6.89	6.21	7.55		5.45
Average	5.45	5.67	5.18	6.11	5.11

Concord Water Services

Fiscal Year 2015–16

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 maintenanceand one for each of two treatment plants. Meter reading, billing, and collections are handled by the city Finance Department.

Concord's system serves approximately 88,000 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-four years. Water meters are read monthly with all being 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.

Municipal Profile

Estimated Service Population	87,696
Service Land Area (Square Miles)	169.6
Persons per Square Mile	517
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	30.0
Line Crews	26.0
Meter Readers	4.0
Billing/Collection	11.0
Other	10.0
Total	81.0
Number of Treatment Plants	2
Total Treatment Capacity	24.0 MG
Average Daily Demand	10.6 MG
Miles of Main Line Pipe	709
Average Age of Main Line Pipe	34 years
Number of Breaks/Leaks	1,131
Number of Water Meters	36,277
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$23,147,800

Full Cost Profile

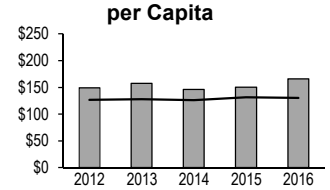
Cost Breakdown by Percentage	
Personal Services	32.6%
Operating Costs	42.7%
Capital Costs	24.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,742,279
Operating Costs	$6,207,630
Capital Costs	$3,595,398
TOTAL	$14,545,307

Concord — Water Services

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

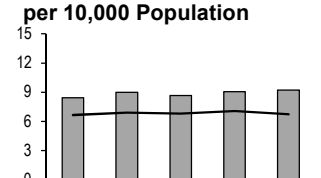
Resource Measures

Water Services Cost per Capita



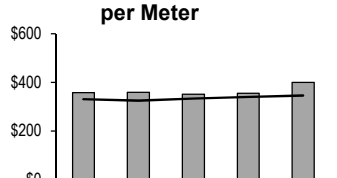
	2012	2013	2014	2015	2016
Concord	$149	$158	$146	$150	$166
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	8.4	9.0	8.7	9.1	9.2
Average	6.7	6.9	6.8	7.1	6.7

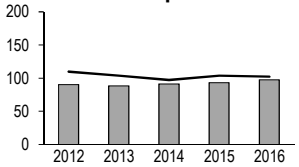
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Concord	$358	$360	$351	$356	$401
Average	$331	$325	$333	$340	$346

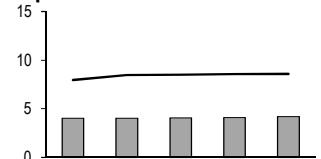
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Concord	90.2	88.4	91.2	93.2	97.4
Average	109.9	103.7	97.2	103.8	102.4

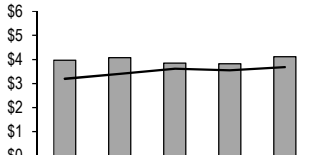
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Concord	4.0	4.0	4.1	4.1	4.2
Average	8.0	8.5	8.5	8.6	8.6

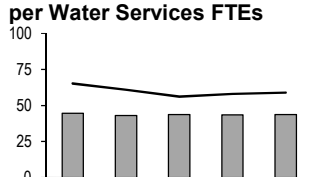
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



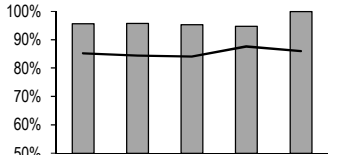
	2012	2013	2014	2015	2016
Concord	$3.97	$4.07	$3.86	$3.82	$4.12
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Concord	44.6	43.1	43.7	43.4	43.6
Average	65.3	61.0	56.2	58.2	59.0

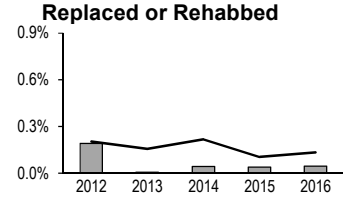
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Concord	96%	96%	95%	95%	100%
Average	85%	84%	84%	88%	86%

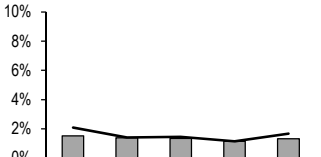
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



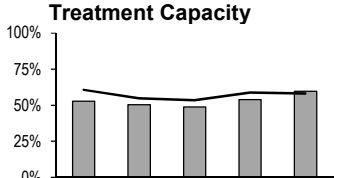
	2012	2013	2014	2015	2016
Concord	0.19%	0.01%	0.04%	0.04%	0.04%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



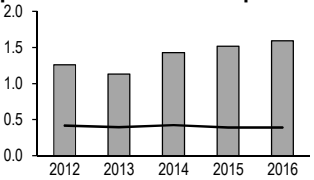
	2012	2013	2014	2015	2016
Concord	1.50%	1.37%	1.34%	1.13%	1.31%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



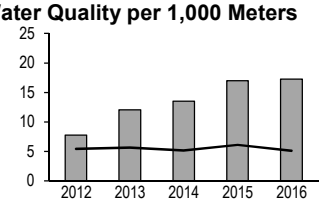
	2012	2013	2014	2015	2016
Concord	53%	50%	49%	54%	60%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Concord	1.26	1.13	1.43	1.52	1.60
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Concord	7.76	12.07	13.50	17.01	17.26
Average	5.45	5.67	5.18	6.11	5.11

Greensboro — Water Services

Fiscal Year 2015–16

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 281,000 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 estimate 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-eight 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 large 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 in FY 2013–14. 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	280,801
Service Land Area (Square Miles)	148.0
Persons per Square Mile	1,897
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	52.0
Line Crews	62.0
Meter Readers	15.0
Billing/Collection	9.0
Other	15.0
Total	153.0
Number of Treatment Plants	2
Total Treatment Capacity	54.0 MG
Average Daily Demand	32.6 MG
Miles of Main Line Pipe	1,494
Average Age of Main Line Pipe	38 years
Number of Breaks/Leaks	304
Number of Water Meters	103,777
Percent of Meters Read Automatically	100.0%
Total Revenues Collected	$51,595,840

Full Cost Profile

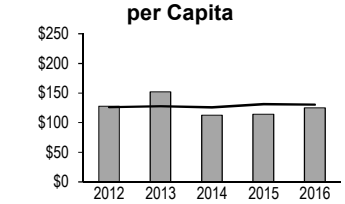
Cost Breakdown by Percentage	
Personal Services	17.0%
Operating Costs	67.9%
Capital Costs	15.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,966,031
Operating Costs	$23,826,939
Capital Costs	$5,312,494
TOTAL	$35,105,464

Greensboro — Water Services

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

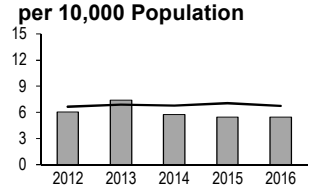
Resource Measures

Water Services Cost per Capita



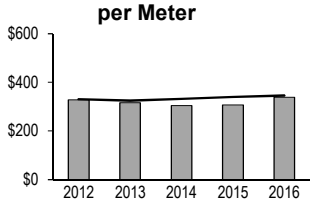
	2012	2013	2014	2015	2016
Greensboro	$128	$152	$113	$114	$125
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	6.0	7.4	5.8	5.5	5.4
Average	6.7	6.9	6.8	7.1	6.7

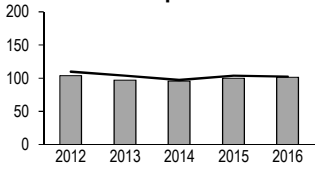
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Greensboro	$328	$317	$304	$307	$338
Average	$331	$325	$333	$340	$346

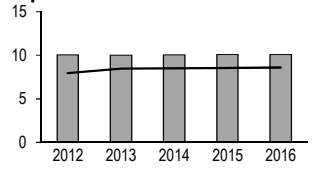
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Greensboro	103.8	97.1	95.8	99.9	101.6
Average	109.9	103.7	97.2	103.8	102.4

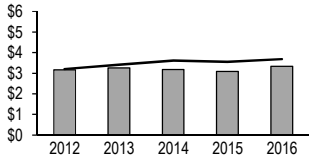
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Greensboro	10.1	10.0	10.0	10.1	10.1
Average	8.0	8.5	8.5	8.6	8.6

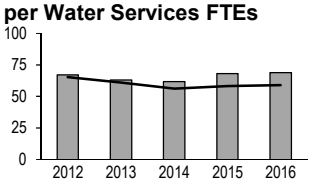
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



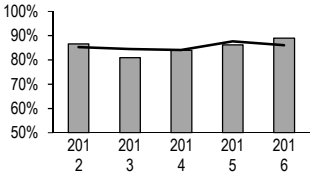
	2012	2013	2014	2015	2016
Greensboro	$3.16	$3.26	$3.18	$3.08	$3.33
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Greensboro	67.1	63.0	61.7	68.0	68.9
Average	65.3	61.0	56.2	58.2	59.0

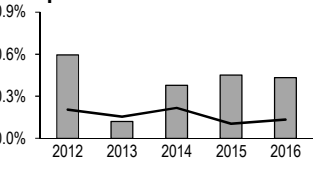
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Greensboro	87%	81%	84%	86%	89%
Average	85%	84%	84%	88%	86%

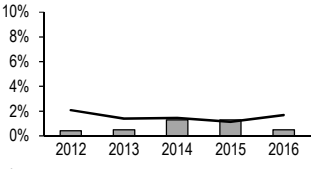
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



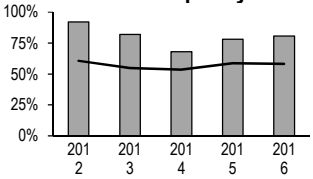
	2012	2013	2014	2015	2016
Greensboro	0.59%	0.12%	0.38%	0.45%	0.43%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



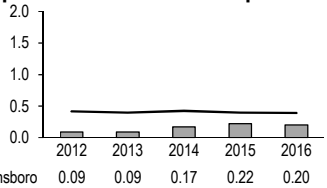
	2012	2013	2014	2015	2016
Greensboro	0.43%	0.50%	1.28%	1.28%	0.50%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



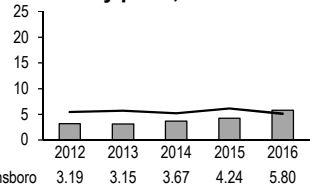
	2012	2013	2014	2015	2016
Greensboro	92%	82%	68%	78%	81%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Greensboro	0.09	0.09	0.17	0.22	0.20
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Greensboro	3.19	3.15	3.67	4.24	5.80
Average	5.45	5.67	5.18	6.11	5.11

Hickory — Water Services

Fiscal Year 2015–16

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 100,000 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 13.7 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	99,530
Service Land Area (Square Miles)	326.0
Persons per Square Mile	305
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	11.1 MG
Miles of Main Line Pipe	931
Average Age of Main Line Pipe	40 years
Number of Breaks/Leaks	217
Number of Water Meters	29,111
Percent of Meters Read Automatically	13.7%
Total Revenues Collected	$14,396,029

Full Cost Profile

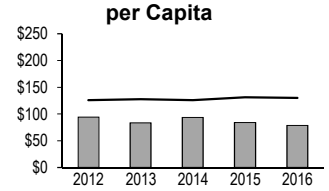
Cost Breakdown by Percentage	
Personal Services	30.5%
Operating Costs	53.4%
Capital Costs	16.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,392,882
Operating Costs	$4,197,423
Capital Costs	$1,266,965
TOTAL	$7,857,270

Hickory — Water Services

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

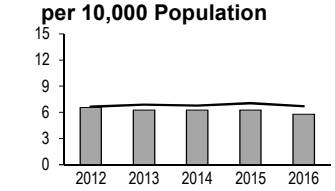
Resource Measures

Water Services Cost per Capita



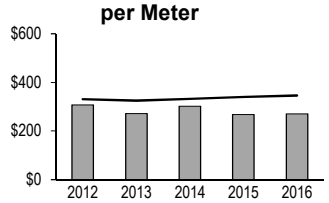
	2012	2013	2014	2015	2016
Hickory	$94	$84	$94	$84	$79
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	6.6	6.3	6.3	6.3	5.8
Average	6.7	6.9	6.8	7.1	6.7

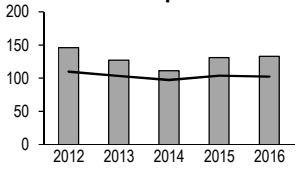
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Hickory	$307	$271	$302	$268	$270
Average	$331	$325	$333	$340	$346

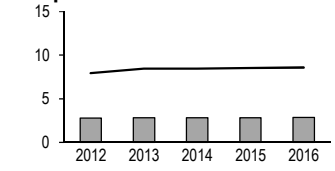
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Hickory	146.0	127.0	111.0	130.8	133.0
Average	109.9	103.7	97.2	103.8	102.4

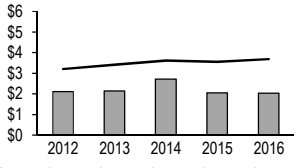
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Hickory	2.8	2.8	2.8	2.8	2.9
Average	8.0	8.5	8.5	8.6	8.6

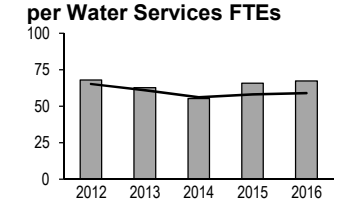
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



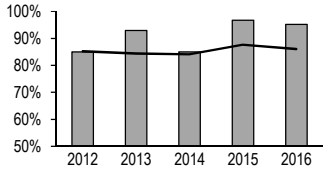
	2012	2013	2014	2015	2016
Hickory	$2.10	$2.14	$2.72	$2.05	$2.03
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Hickory	68.0	62.6	55.2	65.7	67.3
Average	65.3	61.0	56.2	58.2	59.0

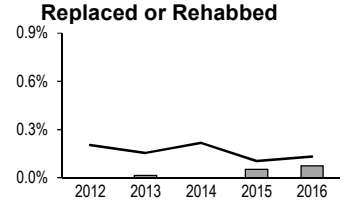
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Hickory	85%	93%	85%	97%	95%
Average	85%	84%	84%	88%	86%

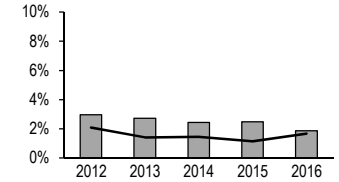
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



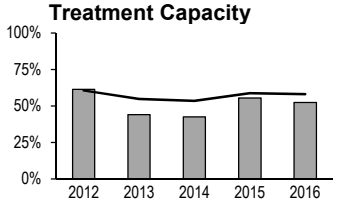
	2012	2013	2014	2015	2016
Hickory	0.00%	0.02%	0.00%	0.05%	0.07%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



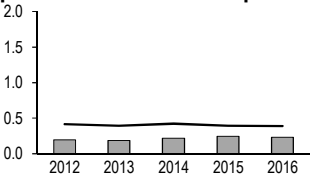
	2012	2013	2014	2015	2016
Hickory	2.96%	2.73%	2.44%	2.47%	1.86%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



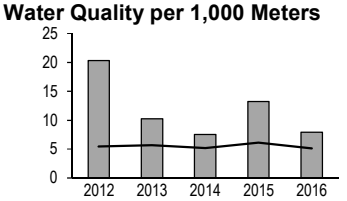
	2012	2013	2014	2015	2016
Hickory	61%	44%	43%	55%	53%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Hickory	0.19	0.19	0.22	0.24	0.23
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Hickory	20.35	10.26	7.53	13.22	7.94
Average	5.45	5.67	5.18	6.11	5.11

High Point — Water Services

Fiscal Year 2015–16

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 111,000 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 19 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 several 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	110,638
Service Land Area (Square Miles)	64.0
Persons per Square Mile	1,729
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	13.0
Line Crews	24.8
Meter Readers	5.0
Billing/Collection	4.0
Other	14.6
Total	61.4
Number of Treatment Plants	1
Total Treatment Capacity	24.0 MG
Average Daily Demand	12.8 MG
Miles of Main Line Pipe	617
Average Age of Main Line Pipe	38 years
Number of Breaks/Leaks	71
Number of Water Meters	42,115
Percent of Meters Read Automatically	19.0%
Total Revenues Collected	$17,615,644

Full Cost Profile

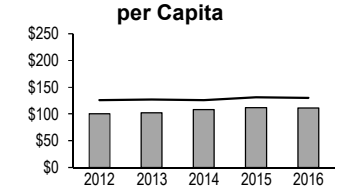
Cost Breakdown by Percentage	
Personal Services	29.0%
Operating Costs	38.8%
Capital Costs	32.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,573,584
Operating Costs	$4,774,616
Capital Costs	$3,968,771
TOTAL	$12,316,971

High Point Water Services

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

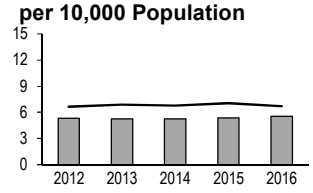
Resource Measures

Water Services Cost per Capita



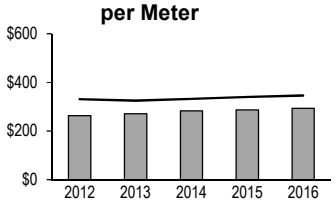
	2012	2013	2014	2015	2016
High Point	$100	$102	$108	$111	$111
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	5.3	5.2	5.3	5.3	5.5
Average	6.7	6.9	6.8	7.1	6.7

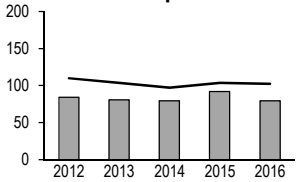
Water Services Cost per Meter



	2012	2013	2014	2015	2016
High Point	$263	$271	$282	$286	$292
Average	$331	$325	$333	$340	$346

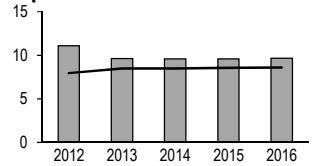
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
High Point	84.3	80.5	79.2	92.0	79.3
Average	109.9	103.7	97.2	103.8	102.4

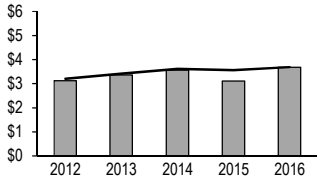
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
High Point	11.1	9.6	9.6	9.6	9.6
Average	8.0	8.5	8.5	8.6	8.6

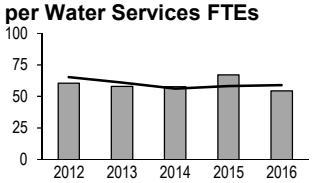
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



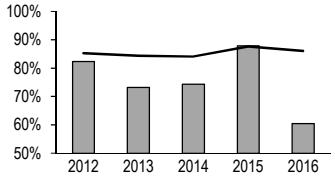
	2012	2013	2014	2015	2016
High Point	$3.12	$3.37	$3.56	$3.11	$3.69
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
High Point	60.5	57.9	57.7	67.0	54.4
Average	65.3	61.0	56.2	58.2	59.0

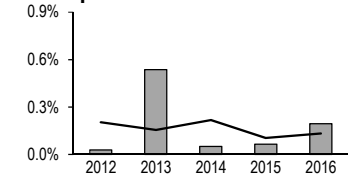
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
High Point	82%	73%	74%	88%	60%
Average	85%	84%	84%	88%	86%

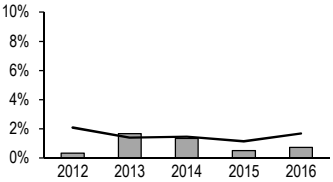
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



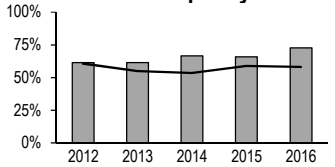
	2012	2013	2014	2015	2016
High Point	0.03%	0.54%	0.05%	0.07%	0.19%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



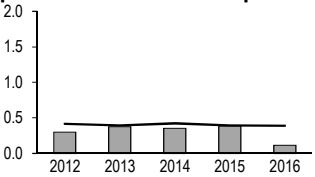
	2012	2013	2014	2015	2016
High Point	0.33%	1.67%	1.35%	0.50%	0.73%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



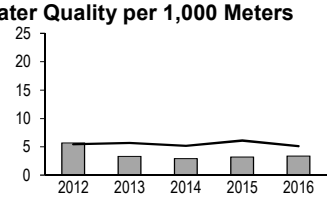
	2012	2013	2014	2015	2016
High Point	62%	61%	67%	66%	73%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
High Point	0.30	0.37	0.35	0.38	0.12
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
High Point	5.68	3.30	2.94	3.22	3.35
Average	5.45	5.67	5.18	6.11	5.11

Raleigh Water Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Public Utilities is a department within the City of Raleigh. It is a combined enterprise system that provides drinking water services to the City of Raleigh and several meger towns, including Garner, Rolesville, Knightdale, Wake Forest, Wendell, and Zebulon. Approximately 549,000 people live in the service area of roughly 299 square miles.

The water system collects its water from Falls Lake located in the Neuse River watershed and from Lake Wheeler and Lake Benson, which are in the Swift Creek watershed. The estimated 50-year safe yield of the system is 77.3 million gallons per day.

Public Utilities operates two threatment plants with a total permitted treatment capacity of 102 million gallons per day. Both plants are surface water treatment plants. One plant uses a conventional treatment process with the addition of settled water ozone. The second plant uses raw water ozone, a super pulsator, a two-stage filter process, and ultraviolet disinfection prior to clearwell storage.

Water meters are read once per month. Currently, nearly all meters are read by automatic means. The standard for meter replacement is fifteen years.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

The costs of water services as captured here do not include debt service but do capture depreciation.

Municipal Profile

Estimated Service Population	549,112
Service Land Area (Square Miles)	299.0
Persons per Square Mile	1,836
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$68,678

Service Profile

FTE Staff Positions	
Treatment Plant	53.0
Line Crews	86.0
Meter Readers	2.0
Billing/Collection	28.0
Other	159.0
Total	328.0
Number of Treatment Plants	2
Total Treatment Capacity	102.0 MG
Average Daily Demand	49.0 MG
Miles of Main Line Pipe	2,373
Average Age of Main Line Pipe	42 years
Number of Breaks/Leaks	385
Number of Water Meters	185,160
Percent of Meters Read Automatically	97.7%
Total Revenues Collected	$102,182,606

Full Cost Profile

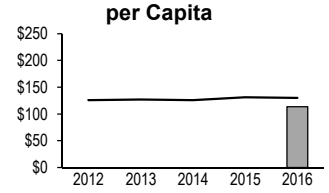
Cost Breakdown by Percentage	
Personal Services	25.3%
Operating Costs	49.3%
Capital Costs	25.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$15,801,996
Operating Costs	$30,777,906
Capital Costs	$15,884,497
TOTAL	$62,464,399

Raleigh — Water Services

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

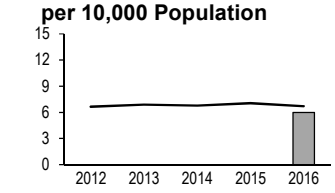
Resource Measures

Water Services Cost per Capita



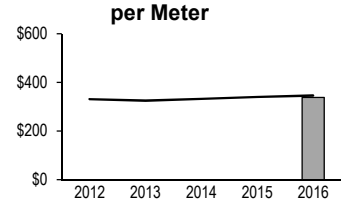
	2012	2013	2014	2015	2016
Raleigh					$114
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					6.0
Average	6.7	6.9	6.8	7.1	6.7

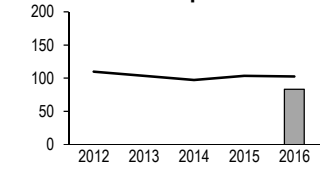
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Raleigh					$337
Average	$331	$325	$333	$340	$346

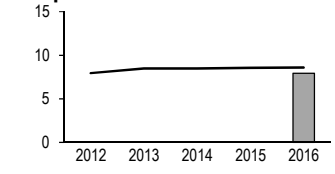
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Raleigh					83.2
Average	109.9	103.7	97.2	103.8	102.4

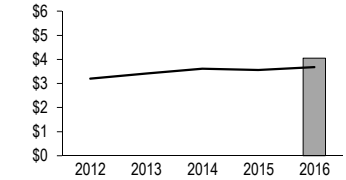
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Raleigh					7.9
Average	8.0	8.5	8.5	8.6	8.6

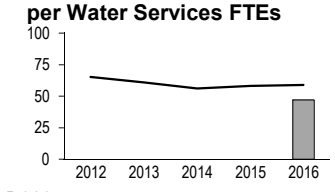
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



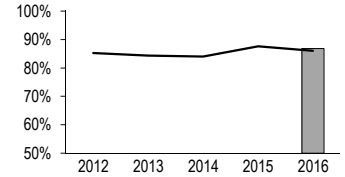
	2012	2013	2014	2015	2016
Raleigh					$4.06
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Raleigh					47.0
Average	65.3	61.0	56.2	58.2	59.0

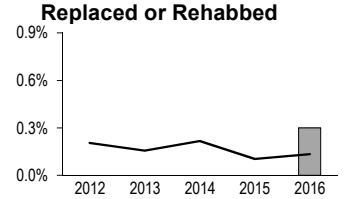
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Raleigh					87%
Average	85%	84%	84%	88%	86%

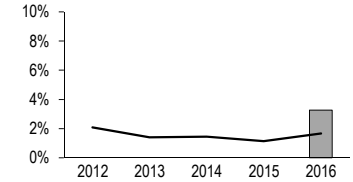
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



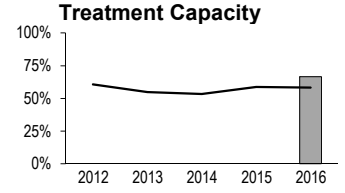
	2012	2013	2014	2015	2016
Raleigh					0.30%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



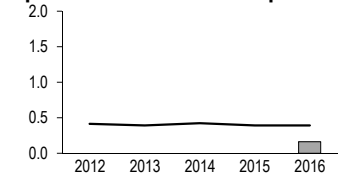
	2012	2013	2014	2015	2016
Raleigh					3.28%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



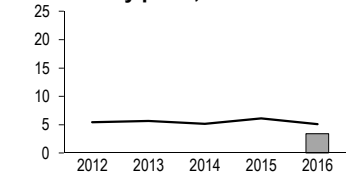
	2012	2013	2014	2015	2016
Raleigh					67%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Raleigh					0.16
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Raleigh					3.40
Average	5.45	5.67	5.18	6.11	5.11

Salisbury — Water Services

Fiscal Year 2015–16

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 47.5 square miles and covers much of Rowan County. Approximately 53,500 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 15 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	53,500
Service Land Area (Square Miles)	47.5
Persons per Square Mile	1,126
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	11.5
Meter Readers	6.0
Billing/Collection	6.0
Other	8.0
Total	39.5
Number of Treatment Plants	1
Total Treatment Capacity	25.0 MG
Average Daily Demand	9.3 MG
Miles of Main Line Pipe	421
Average Age of Main Line Pipe	49 years
Number of Breaks/Leaks	280
Number of Water Meters	19,474
Percent of Meters Read Automatically	15.4%
Total Revenues Collected	$12,555,613

Full Cost Profile

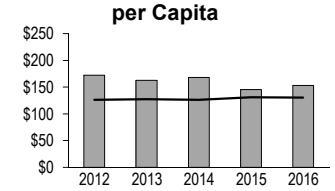
Cost Breakdown by Percentage	
Personal Services	26.8%
Operating Costs	42.9%
Capital Costs	30.3%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,196,180
Operating Costs	$3,517,699
Capital Costs	$2,482,569
TOTAL	$8,196,448

Salisbury — Water Services

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

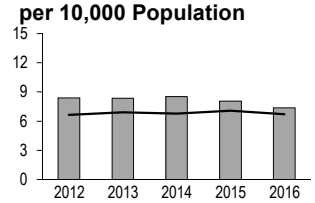
Resource Measures

Water Services Cost per Capita



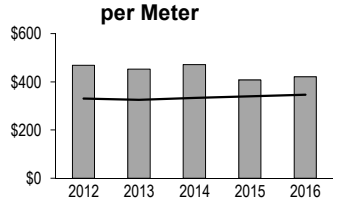
	2012	2013	2014	2015	2016
Salisbury	$172	$163	$168	$145	$153
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	8.4	8.4	8.5	8.1	7.4
Average	6.7	6.9	6.8	7.1	6.7

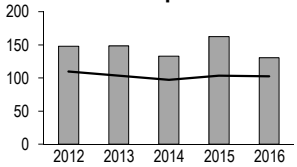
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Salisbury	$469	$453	$471	$407	$421
Average	$331	$325	$333	$340	$346

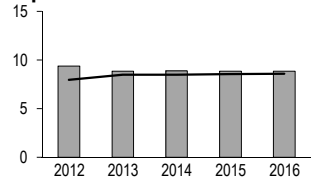
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Salisbury	148.1	148.6	132.8	162.3	130.4
Average	109.9	103.7	97.2	103.8	102.4

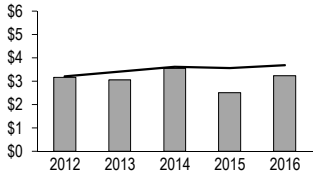
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Salisbury	9.4	8.9	8.9	8.9	8.9
Average	8.0	8.5	8.5	8.6	8.6

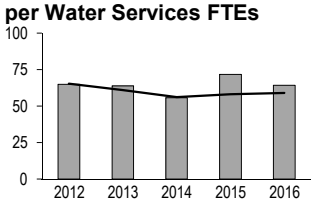
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



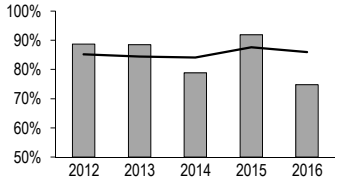
	2012	2013	2014	2015	2016
Salisbury	$3.17	$3.05	$3.55	$2.51	$3.23
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Salisbury	64.9	63.9	55.8	71.7	64.3
Average	65.3	61.0	56.2	58.2	59.0

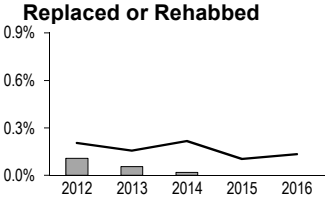
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Salisbury	89%	89%	79%	92%	75%
Average	85%	84%	84%	88%	86%

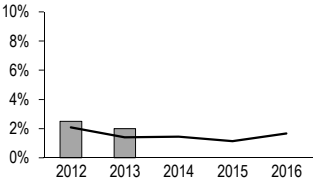
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



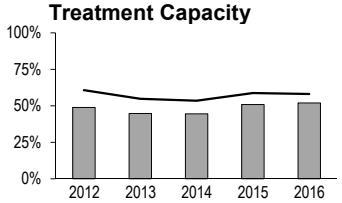
	2012	2013	2014	2015	2016
Salisbury	0.11%	0.06%	0.02%	0.00%	0.00%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



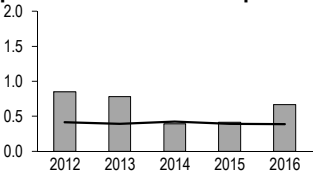
	2012	2013	2014	2015	2016
Salisbury	2.50%	2.00%			0.00%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



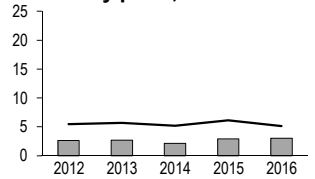
	2012	2013	2014	2015	2016
Salisbury	49%	45%	44%	51%	52%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Salisbury	0.85	0.78	0.39	0.42	0.66
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Salisbury	2.62	2.70	2.17	2.95	3.03
Average	5.45	5.67	5.18	6.11	5.11

Wilson — Water Services

Fiscal Year 2015–16

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 52,000 people over 39 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 10 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 in FY 2012–13 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	51,600
Service Land Area (Square Miles)	39.0
Persons per Square Mile	1,323
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	20.0
Meter Readers	2.0
Billing/Collection	2.0
Other	1.0
Total	43.0
Number of Treatment Plants	2
Total Treatment Capacity	22.0 MG
Average Daily Demand	8.7 MG
Miles of Main Line Pipe	418
Average Age of Main Line Pipe	44 years
Number of Breaks/Leaks	51
Number of Water Meters	21,701
Percent of Meters Read Automatically	10.4%
Total Revenues Collected	$11,424,611

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	29.6%
Operating Costs	45.9%
Capital Costs	24.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,054,367
Operating Costs	$4,735,790
Capital Costs	$2,523,210
TOTAL	$10,313,367

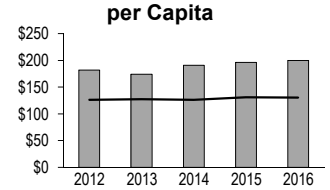
Wilson

Water Services

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

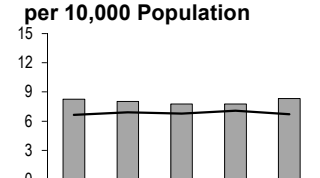
Resource Measures

Water Services Cost per Capita



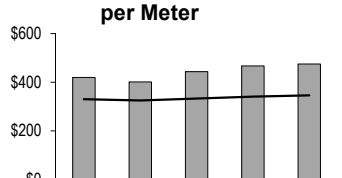
	2012	2013	2014	2015	2016
Wilson	$182	$174	$191	$196	$200
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	8.2	8.0	7.8	7.8	8.3
Average	6.7	6.9	6.8	7.1	6.7

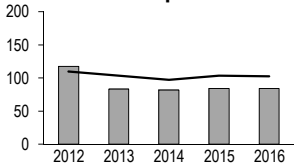
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Wilson	$420	$401	$444	$468	$475
Average	$331	$325	$333	$340	$346

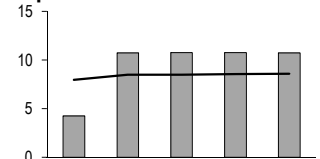
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Wilson	117.5	83.1	81.6	84.2	84.1
Average	109.9	103.7	97.2	103.8	102.4

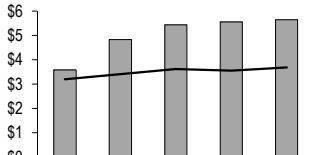
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Wilson	4.2	10.7	10.8	10.8	10.7
Average	8.0	8.5	8.5	8.6	8.6

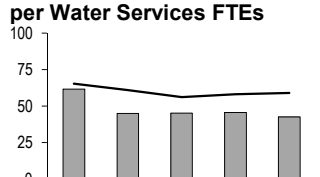
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



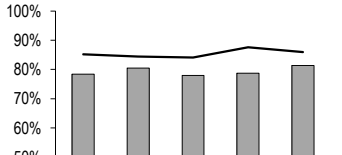
	2012	2013	2014	2015	2016
Wilson	$3.57	$4.83	$5.44	$5.56	$5.65
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Wilson	61.7	45.0	45.3	45.5	42.4
Average	65.3	61.0	56.2	58.2	59.0

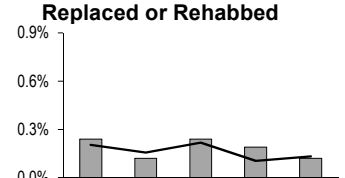
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Wilson	78%	80%	78%	79%	81%
Average	85%	84%	84%	88%	86%

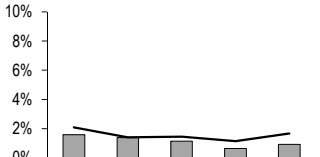
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



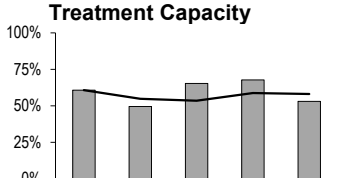
	2012	2013	2014	2015	2016
Wilson	0.24%	0.12%	0.24%	0.19%	0.12%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



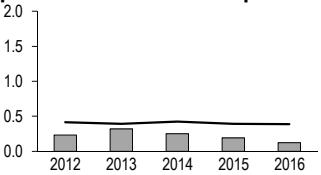
	2012	2013	2014	2015	2016
Wilson	1.57%	1.39%	1.13%	0.64%	0.92%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



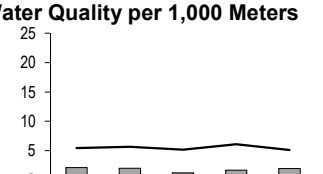
	2012	2013	2014	2015	2016
Wilson	61%	50%	65%	68%	53%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Wilson	0.23	0.32	0.25	0.19	0.12
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Wilson	2.13	2.03	1.17	1.66	1.94
Average	5.45	5.67	5.18	6.11	5.11

Winston-Salem Water Services

Fiscal Year 2015–16

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 2,277 miles of pipeline. 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 13 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	366,471
Service Land Area (Square Miles)	366.0
Persons per Square Mile	1,001
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	75.0
Meter Readers	16.0
Billing/Collection	9.0
Other	20.0
Total	173.0
Number of Treatment Plants	3
Total Treatment Capacity	91.0 MG
Average Daily Demand	36.6 MG
Miles of Main Line Pipe	2,277
Average Age of Main Line Pipe	75 years
Number of Breaks/Leaks	441
Number of Water Meters	126,638
Percent of Meters Read Automatically	12.8%
Total Revenues Collected	$54,553,542

Full Cost Profile

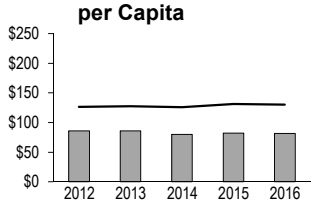
Cost Breakdown by Percentage	
Personal Services	24.8%
Operating Costs	37.7%
Capital Costs	37.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$7,431,254
Operating Costs	$11,283,783
Capital Costs	$11,245,958
TOTAL	$29,960,995

Winston-Salem — Water Services

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

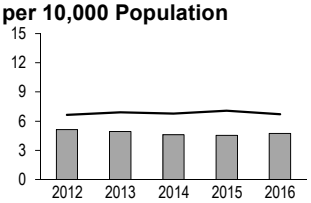
Resource Measures

Water Services Cost per Capita



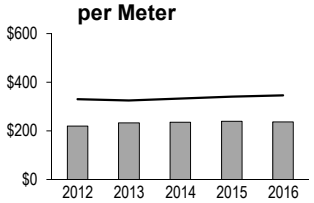
	2012	2013	2014	2015	2016
Winston-Salem	$86	$86	$80	$82	$82
Average	$126	$127	$126	$131	$130

Water Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	5.1	4.9	4.6	4.5	4.7
Average	6.7	6.9	6.8	7.1	6.7

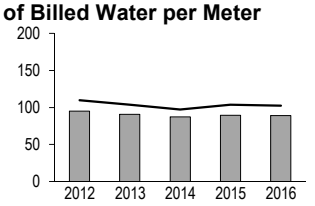
Water Services Cost per Meter



	2012	2013	2014	2015	2016
Winston-Salem	$220	$233	$235	$240	$237
Average	$331	$325	$333	$340	$346

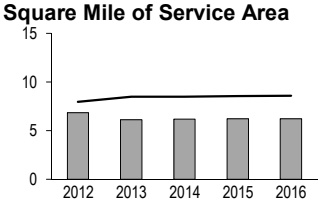
Workload Measures

Thousands of Gallons of Billed Water per Meter



	2012	2013	2014	2015	2016
Winston-Salem	95.2	90.8	87.1	89.6	88.9
Average	109.9	103.7	97.2	103.8	102.4

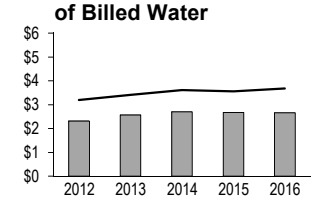
Miles of Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Winston-Salem	6.9	6.1	6.2	6.2	6.2
Average	8.0	8.5	8.5	8.6	8.6

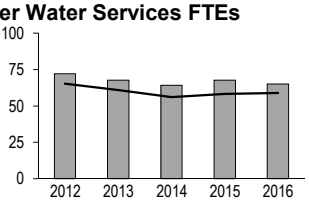
Efficiency Measures

Total Cost per Thousand Gallons of Billed Water



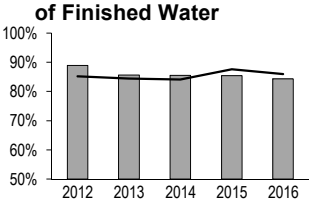
	2012	2013	2014	2015	2016
Winston-Salem	$2.32	$2.57	$2.70	$2.68	$2.66
Average	$3.20	$3.41	$3.62	$3.56	$3.69

Million Gallons of Billed Water per Water Services FTEs



	2012	2013	2014	2015	2016
Winston-Salem	72.2	67.6	64.2	67.8	65.1
Average	65.3	61.0	56.2	58.2	59.0

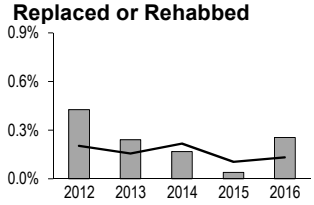
Billed Water as a Percentage of Finished Water



	2012	2013	2014	2015	2016
Winston-Salem	89%	86%	86%	85%	84%
Average	85%	84%	84%	88%	86%

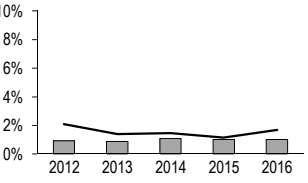
Effectiveness Measures

Percentage of Existing Pipeline Replaced or Rehabbed



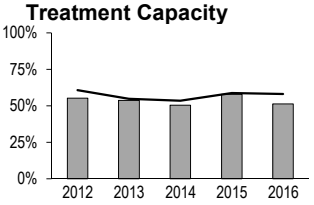
	2012	2013	2014	2015	2016
Winston-Salem	0.43%	0.24%	0.17%	0.04%	0.26%
Average	0.20%	0.15%	0.22%	0.10%	0.13%

Percentage of Water Bills Not Collected



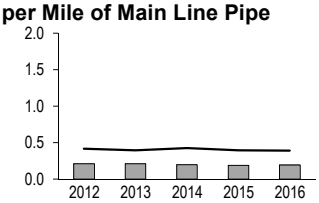
	2012	2013	2014	2015	2016
Winston-Salem	0.93%	0.87%	1.08%	1.02%	1.02%
Average	2.08%	1.40%	1.45%	1.14%	1.67%

Peak Daily Demand as a Percentage of Treatment Capacity



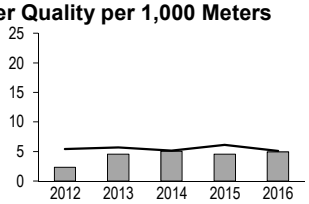
	2012	2013	2014	2015	2016
Winston-Salem	55%	54%	50%	58%	51%
Average	61%	55%	53%	59%	58%

Breaks and Leaks per Mile of Main Line Pipe



	2012	2013	2014	2015	2016
Winston-Salem	0.21	0.21	0.20	0.19	0.19
Average	0.42	0.39	0.42	0.39	0.39

Customer Complaints about Water Quality per 1,000 Meters



	2012	2013	2014	2015	2016
Winston-Salem	2.34	4.55	5.07	4.56	4.93
Average	5.45	5.67	5.18	6.11	5.11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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 Thousand 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 Thousand 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 meet not only 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 Main Line 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 Accounts	Sewer System FTE Positions
Apex	46,362	18.0	1 + 1 jointly operated with Cary	2.8	9.7	239.4	15,420	25.5
Cary	183,745	75.5	3	17.3	42.8	930.4	58,876	109.8
Charlotte	954,644	546.0	5	85.4	123.0	4,363.6	251,904	446.0
Concord	87,696	169.6	0	NA	NA	544.5	34,070	42.5
Greensboro	280,801	148.0	2	33.9	56.0	1,487.0	101,099	159.0
Hickory	37,478	65.0	3	5.7	16.5	540.0	15,241	44.0
High Point	110,638	79.5	2	16.2	32.2	671.9	40,131	91.6
Raleigh	549,112	299.0	3	49.9	65.0	2,425.0	168,639	324.0
Salisbury	52,400	45.5	2	8.7	12.5	429.8	16,462	53.5
Wilson	53,600	34.0	1	9.5	14.0	353.0	19,879	60.0
Winston-Salem	349,664	366.0	2	33.0	51.0	1,750.0	97,245	176.0

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

Apex Wastewater Services

Fiscal Year 2015–16

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, biological nutrient 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. Apex also pays for one-third of the operation of a separate treatment plant which is jointly owned with the Town of Cary.

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	46,362
Service Land Area (Square Miles)	18.0
Persons per Square Mile	2,576
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$97,201

Service Profile

Total FTE Staff Positions	25.5
Treatment Plant	8.5
Line Crews	13.0
Billing/Collection	2.0
Other	2.0
Number of Treatment Plants	1
Total Treatment Capacity	9.7 MGD
Average Daily Flow	2.8 MGD
River Basin into Which System Discharges	Neuse
Miles of Gravity Main Line Pipe	205
Miles of Forced Main Line Pipe	35
Average Age of Main Line Pipe	19 years
Blocks in Sewer Mains	59
Number of System Breaks	60
Sanitary System Overflows	1
Number of Customer Accounts	15,420
Total Revenues Collected	$8,981,401

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	30.4%
Operating Costs	35.4%
Capital Costs	34.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,595,367
Operating Costs	$3,022,450
Capital Costs	$2,917,717
TOTAL	$8,535,534

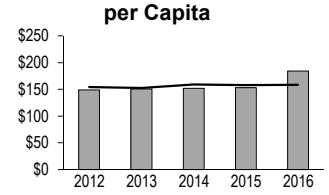
Apex

Wastewater Services

Key: Apex ■ Benchmarking Average — Fiscal Years 2012 through 2016

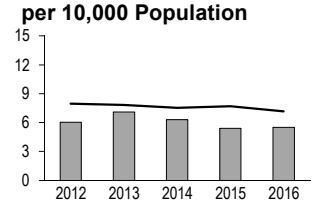
Resource Measures

Wastewater Services Cost per Capita



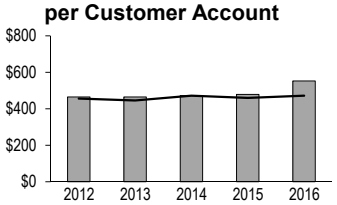
	2012	2013	2014	2015	2016
Apex	$149	$151	$152	$153	$184
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Apex	6.1	7.1	6.3	5.4	5.5
Average	8.0	7.8	7.5	7.7	7.2

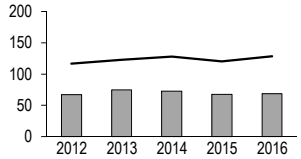
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Apex	$464	$464	$471	$479	$554
Average	$457	$445	$472	$460	$472

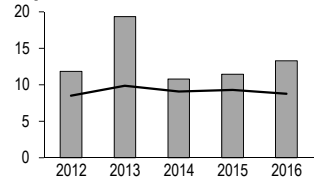
Workload Measures

Thousands of Gallons of Wastewater per Account



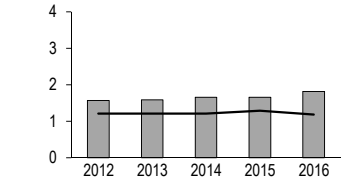
	2012	2013	2014	2015	2016
Apex	66.9	75.0	72.8	67.6	68.6
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Apex	11.8	19.3	10.8	11.5	13.3
Average	8.5	9.9	9.1	9.3	8.8

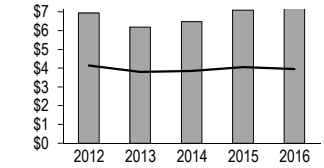
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Apex	1.57	1.59	1.66	1.66	1.82
Average	1.21	1.21	1.21	1.29	1.18

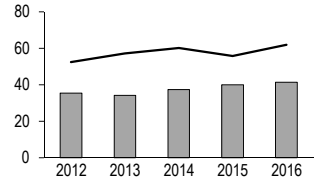
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



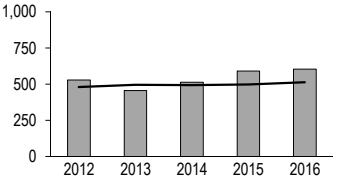
	2012	2013	2014	2015	2016
Apex	$6.94	$6.19	$6.47	$7.09	$8.07
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Apex	35.4	34.3	37.3	39.9	41.5
Average	52.4	57.3	60.2	55.7	62.0

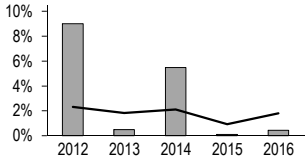
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Apex	530	457	513	591	605
Average	479	495	493	498	513

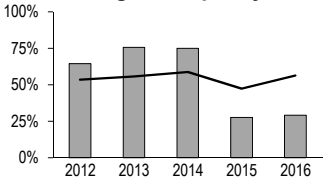
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



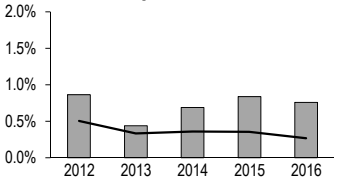
	2012	2013	2014	2015	2016
Apex	9.00%	0.50%	5.48%	0.10%	0.44%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



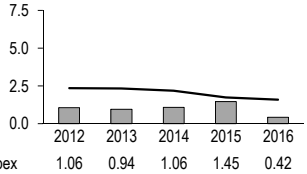
	2012	2013	2014	2015	2016
Apex	64.5%	75.6%	75.0%	27.6%	29.1%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



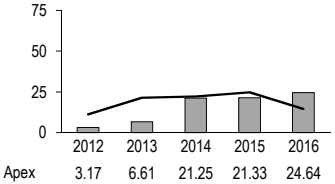
	2012	2013	2014	2015	2016
Apex	0.86%	0.44%	0.69%	0.84%	0.76%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



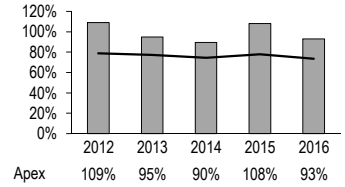
	2012	2013	2014	2015	2016
Apex	1.06	0.94	1.06	1.45	0.42
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Apex	3.17	6.61	21.25	21.33	24.64
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Apex	109%	95%	90%	108%	93%
Average	79%	77%	75%	78%	73%

Cary Wastewater Services

Fiscal Year 2015–16

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 eight violations associated with the collection system. These collection violations were due to sanitary system overflows.

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	183,745
Service Land Area (Square Miles)	76
Persons per Square Mile	2,434
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$108,956

Service Profile

Total FTE Staff Positions	109.8
Treatment Plant	49.0
Line Crews	33.0
Billing/Collection	8.8
Other	19.1
Number of Treatment Plants	3
Total Treatment Capacity	42.8 MGD
Average Daily Flow	17.3 MGD
River Basin into Which System Discharges	Neuse and Cape Fear
Miles of Gravity Main Line Pipe	847
Miles of Forced Main Line Pipe	83
Average Age of Main Line Pipe	na
Blocks in Sewer Mains	555
Number of System Breaks	19
Sanitary System Overflows	10
Number of Customer Accounts	58,876
Total Revenues Collected	$43,962,925

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	32.5%
Operating Costs	37.8%
Capital Costs	29.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$10,743,727
Operating Costs	$12,486,159
Capital Costs	$9,779,574
TOTAL	$33,009,460

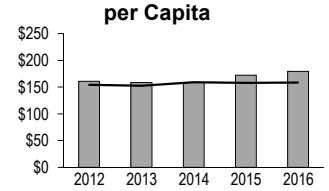
Cary

Wastewater Services

Key: Cary ■ Benchmarking Average — Fiscal Years 2012 through 2016

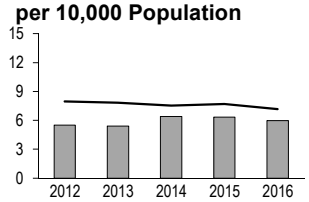
Resource Measures

Wastewater Services Cost per Capita



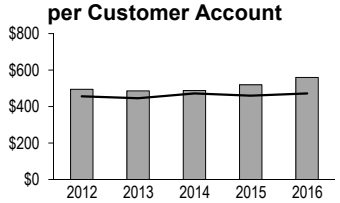
	2012	2013	2014	2015	2016
Cary	$161	$158	$158	$172	$180
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Cary	5.5	5.4	6.4	6.3	6.0
Average	8.0	7.8	7.5	7.7	7.2

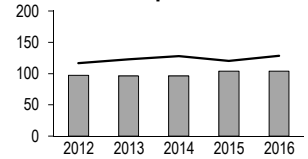
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Cary	$496	$485	$488	$519	$561
Average	$457	$445	$472	$460	$472

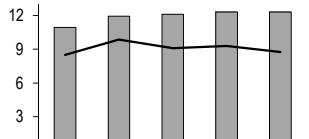
Workload Measures

Thousands of Gallons of Wastewater per Account



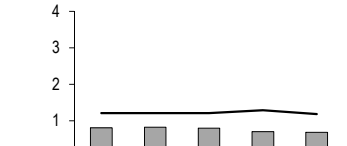
	2012	2013	2014	2015	2016
Cary	97.2	96.4	96.3	104.1	104.2
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Cary	11.0	11.9	12.1	12.3	12.3
Average	8.5	9.9	9.1	9.3	8.8

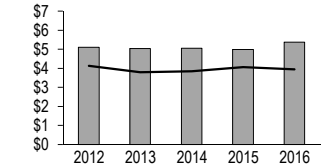
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Cary	0.80	0.82	0.80	0.70	0.68
Average	1.21	1.21	1.21	1.29	1.18

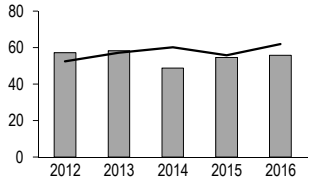
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



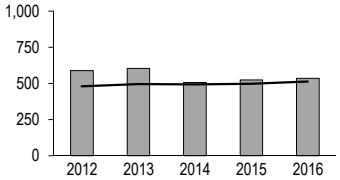
	2012	2013	2014	2015	2016
Cary	$5.10	$5.04	$5.06	$4.99	$5.38
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Cary	57.2	58.2	48.9	54.6	55.8
Average	52.4	57.3	60.2	55.7	62.0

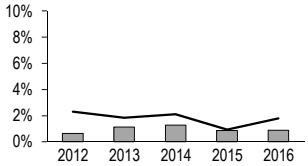
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Cary	589	604	508	524	536
Average	479	495	493	498	513

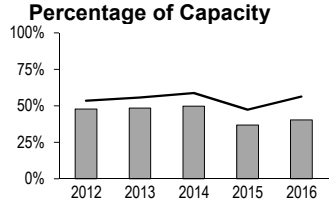
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



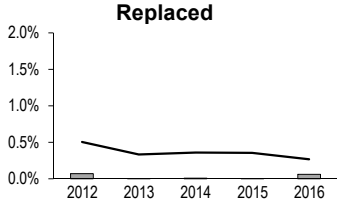
	2012	2013	2014	2015	2016
Cary	0.65%	1.14%	1.28%	0.87%	0.88%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



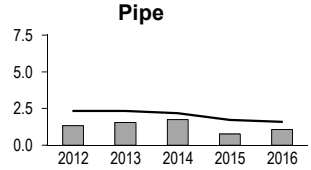
	2012	2013	2014	2015	2016
Cary	47.7%	48.5%	49.8%	36.9%	40.4%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



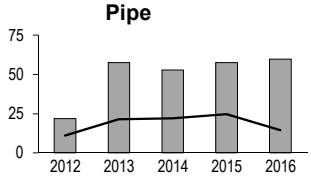
	2012	2013	2014	2015	2016
Cary	0.07%	0.00%	0.01%	0.00%	0.06%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



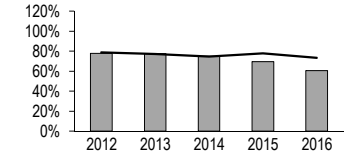
	2012	2013	2014	2015	2016
Cary	1.34	1.55	1.75	0.75	1.07
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Cary	21.90	57.49	52.72	57.42	59.65
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Cary	78%	77%	75%	69%	61%
Average	79%	77%	75%	78%	73%

Charlotte — Wastewater Services

Fiscal Year 2015–16

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 four regulatory violations connected to treatment issues and 160 regulatory violations connected to the collection portion of the system during the year, all involving sanitary system overflows.

Conditions Affecting Service, Performance, and Costs

Charlotte did not participate in the Benchmarking Project during FY 2014–15. No data are available for that year.

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	954,644
Service Land Area (Square Miles)	546
Persons per Square Mile	1,748
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$61,405

Service Profile

Total FTE Staff Positions	446.0
Treatment Plant	133.0
Line Crews	152.0
Billing/Collection	9.0
Other	152.0
Number of Treatment Plants	5
Total Treatment Capacity	123.0 MGD
Average Daily Flow	85.4 MGD
River Basin into Which System Discharges	Cabarrus & Yadkin
Miles of Gravity Main Line Pipe	4,244
Miles of Forced Main Line Pipe	120
Average Age of Main Line Pipe	32 years
Blocks in Sewer Mains	142
Number of System Breaks	116
Sanitary System Overflows	160
Number of Customer Accounts	251,904
Total Revenues Collected	$212,820,254

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	16.0%
Operating Costs	36.0%
Capital Costs	48.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$21,934,207
Operating Costs	$49,364,750
Capital Costs	$65,766,019
TOTAL	$137,064,976

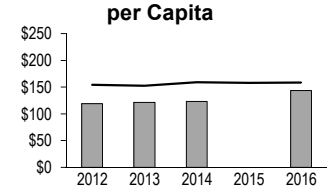
Charlotte

Wastewater Services

Key: Charlotte ■ Benchmarking Average — Fiscal Years 2012 through 2016

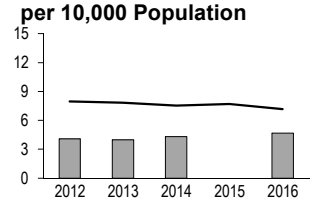
Resource Measures

Wastewater Services Cost per Capita



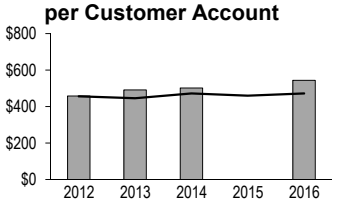
	2012	2013	2014	2015	2016
Charlotte	$119	$121	$123		$144
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Charlotte	4.1	4.0	4.3		4.7
Average	8.0	7.8	7.5	7.7	7.2

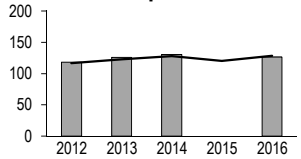
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Charlotte	$457	$492	$502		$544
Average	$457	$445	$472	$460	$472

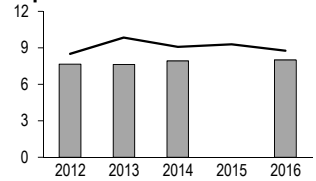
Workload Measures

Thousands of Gallons of Wastewater per Account



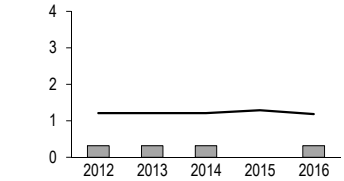
	2012	2013	2014	2015	2016
Charlotte	118.5	125.7	130.6		126.6
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Charlotte	7.7	7.6	7.9		8.0
Average	8.5	9.9	9.1	9.3	8.8

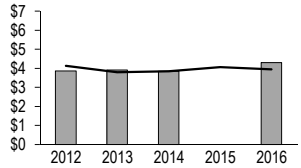
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Charlotte	0.32	0.31	0.31		0.32
Average	1.21	1.21	1.21	1.29	1.18

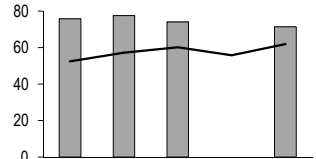
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



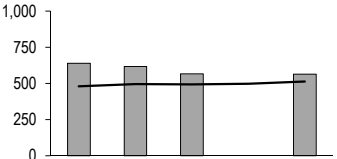
	2012	2013	2014	2015	2016
Charlotte	$3.86	$3.91	$3.84		$4.30
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Charlotte	75.9	77.6	74.1		71.5
Average	52.4	57.3	60.2	55.7	62.0

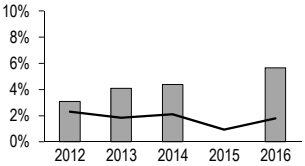
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Charlotte	640	617	568		565
Average	479	495	493	498	513

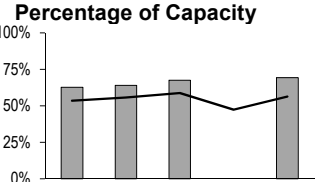
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



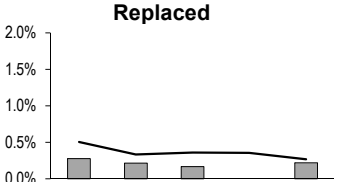
	2012	2013	2014	2015	2016
Charlotte	3.09%	4.09%	4.38%		5.67%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



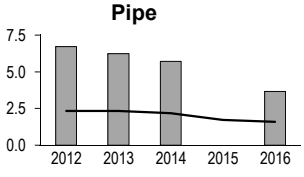
	2012	2013	2014	2015	2016
Charlotte	62.7%	64.1%	67.6%		69.4%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



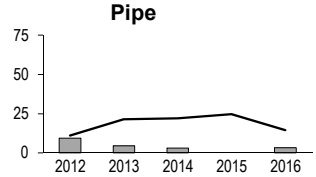
	2012	2013	2014	2015	2016
Charlotte	0.28%	0.21%	0.17%		0.22%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



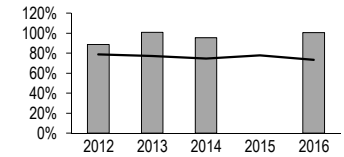
	2012	2013	2014	2015	2016
Charlotte	6.72	6.24	5.72		3.67
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Charlotte	9.52	4.51	3.08		3.25
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Charlotte	89%	101%	95%		100%
Average	79%	77%	75%	78%	73%

Concord Wastewater Services

Fiscal Year 2015–16

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 are handled by the regional authority using two treatment plants.

The Concord wastewater collection system had no regulatory violations during the fiscal year for the treatment side but had three violations on the collection portion of the system involving sanitary system overflows.

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	87,696
Service Land Area (Square Miles)	170
Persons per Square Mile	517
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$63,643

Service Profile

Total FTE Staff Positions	42.5
Treatment Plant	0.0
Line Crews	28.0
Billing/Collection	10.5
Other	4.0
Number of Treatment Plants	0
Total Treatment Capacity	NA
Average Daily Flow	8.9 MGD
River Basin into Which System Discharges	Yadkin-Pee Dee
Miles of Gravity Main Line Pipe	532
Miles of Forced Main Line Pipe	13
Average Age of Main Line Pipe	39 years
Blocks in Sewer Mains	15
Number of System Breaks	70
Sanitary System Overflows	5
Number of Customer Accounts	34,070
Total Revenues Collected	$17,558,001

Full Cost Profile

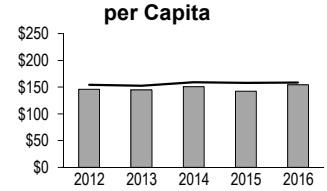
Cost Breakdown by Percentage	
Personal Services	15.7%
Operating Costs	62.1%
Capital Costs	22.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,132,614
Operating Costs	$8,419,784
Capital Costs	$3,003,881
TOTAL	$13,556,279

Concord — Wastewater Services

Key: Concord ■ Benchmarking Average — Fiscal Years 2012 through 2016

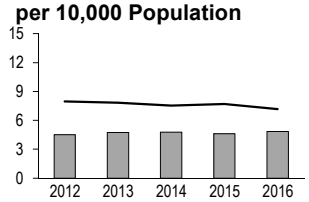
Resource Measures

Wastewater Services Cost per Capita



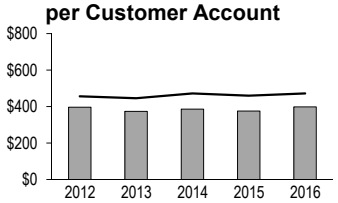
	2012	2013	2014	2015	2016
Concord	$146	$145	$151	$142	$155
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Concord	4.5	4.7	4.8	4.6	4.8
Average	8.0	7.8	7.5	7.7	7.2

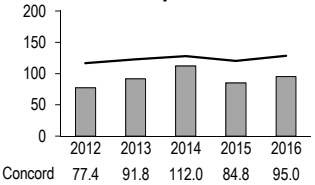
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Concord	$397	$374	$386	$375	$398
Average	$457	$445	$472	$460	$472

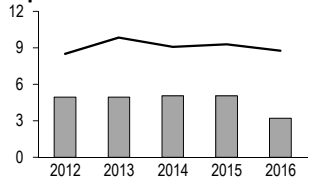
Workload Measures

Thousands of Gallons of Wastewater per Account



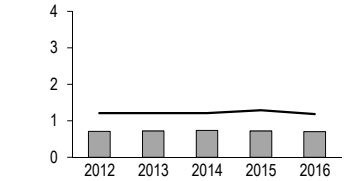
	2012	2013	2014	2015	2016
Concord	77.4	91.8	112.0	84.8	95.0
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Concord	5.0	5.0	5.0	5.0	3.2
Average	8.5	9.9	9.1	9.3	8.8

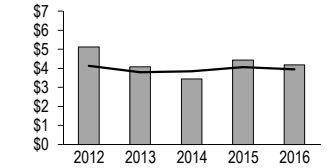
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Concord	0.71	0.72	0.74	0.72	0.70
Average	1.21	1.21	1.21	1.29	1.18

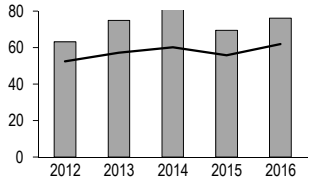
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



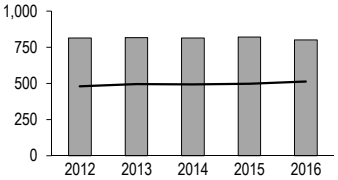
	2012	2013	2014	2015	2016
Concord	$5.13	$4.08	$3.44	$4.43	$4.19
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Concord	63.2	75.0	91.3	69.6	76.2
Average	52.4	57.3	60.2	55.7	62.0

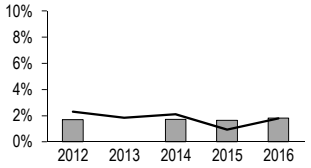
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Concord	816	817	815	820	802
Average	479	495	493	498	513

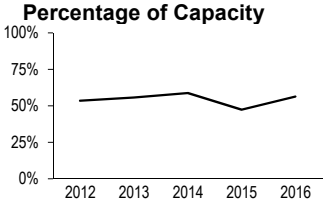
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



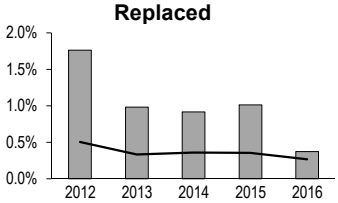
	2012	2013	2014	2015	2016
Concord	1.69%		1.72%	1.65%	1.81%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



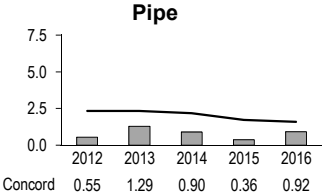
	2012	2013	2014	2015	2016
Concord					
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



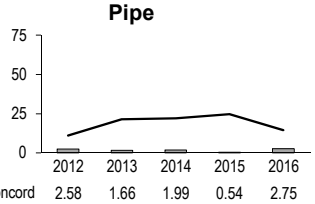
	2012	2013	2014	2015	2016
Concord	1.76%	0.98%	0.92%	1.01%	0.37%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



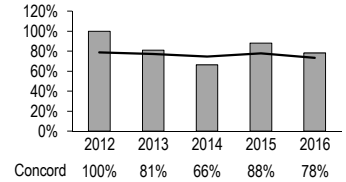
	2012	2013	2014	2015	2016
Concord	0.55	1.29	0.90	0.36	0.92
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Concord	2.58	1.66	1.99	0.54	2.75
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Concord	100%	81%	66%	88%	78%
Average	79%	77%	75%	78%	73%

Greensboro Wastewater Services

Fiscal Year 2015–16

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 use 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 two regulatory violations connected to the treatment portion of the system and eight violations connected to the collection portion of the system for sainitary system overflows.

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.

During FY 2015–16 a conversion to a new database used for tracking operations was undertaken. Some data were not available. The performance measure "Backups per 100 miles of main line pipe" could not be calculated.

Municipal Profile

Estimated Service Population	280,801
Service Land Area (Square Miles)	148
Persons per Square Mile	1,897
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$52,752

Service Profile

Total FTE Staff Positions	159.0
Treatment Plant	52.0
Line Crews	83.0
Billing/Collection	9.0
Other	15.0
Number of Treatment Plants	2
Total Treatment Capacity	56.0 MGD
Average Daily Flow	33.9 MGD
River Basin into Which System Discharges	Cape Fear
Miles of Gravity Main Line Pipe	1,419
Miles of Forced Main Line Pipe	68
Average Age of Main Line Pipe	44 years
Blocks in Sewer Mains	NA
Number of System Breaks	6
Sanitary System Overflows	8
Number of Customer Accounts	101,099
Total Revenues Collected	$55,898,195

Full Cost Profile

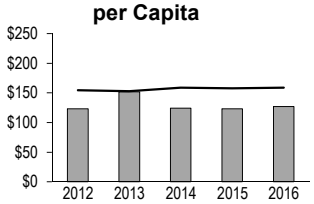
Cost Breakdown by Percentage	
Personal Services	19.4%
Operating Costs	56.5%
Capital Costs	24.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,907,311
Operating Costs	$20,146,530
Capital Costs	$8,594,200
TOTAL	$35,648,041

Greensboro — Wastewater Services

Key: Greensboro ■ Benchmarking Average — Fiscal Years 2012 through 2016

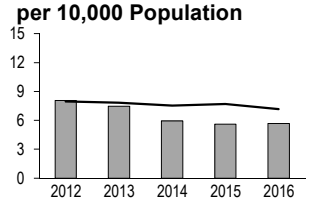
Resource Measures

Wastewater Services Cost per Capita



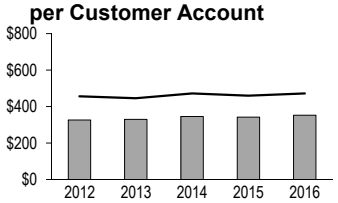
	2012	2013	2014	2015	2016
Greensboro	$123	$152	$124	$123	$127
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Greensboro	8.1	7.5	5.9	5.6	5.7
Average	8.0	7.8	7.5	7.7	7.2

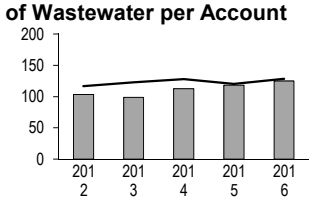
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Greensboro	$327	$329	$345	$343	$353
Average	$457	$445	$472	$460	$472

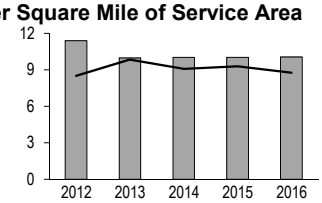
Workload Measures

Thousands of Gallons of Wastewater per Account



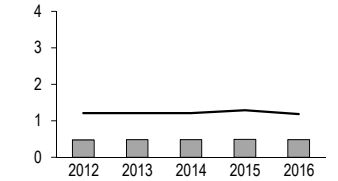
	2012	2013	2014	2015	2016
Greensboro	103.5	98.6	112.6	118.2	124.9
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Greensboro	11.4	10.0	10.0	10.0	10.0
Average	8.5	9.9	9.1	9.3	8.8

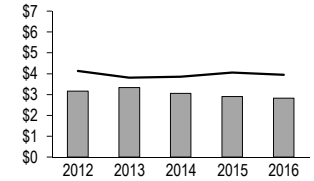
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Greensboro	0.47	0.48	0.48	0.49	0.48
Average	1.21	1.21	1.21	1.29	1.18

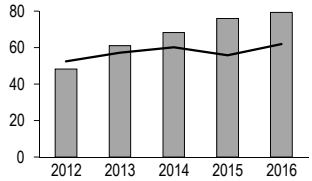
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



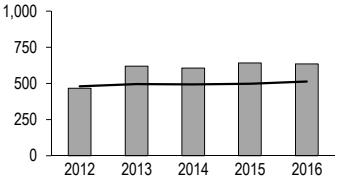
	2012	2013	2014	2015	2016
Greensboro	$3.16	$3.34	$3.06	$2.90	$2.82
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Greensboro	48.3	61.1	68.4	76.0	79.4
Average	52.4	57.3	60.2	55.7	62.0

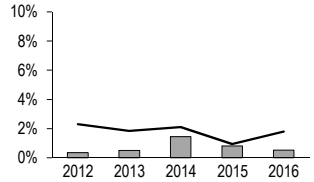
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Greensboro	467	619	607	643	636
Average	479	495	493	498	513

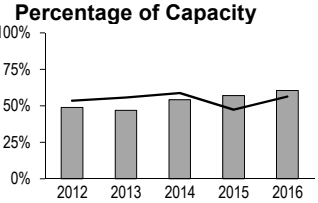
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



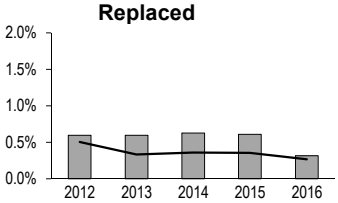
	2012	2013	2014	2015	2016
Greensboro	0.34%	0.50%	1.44%	0.81%	0.53%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



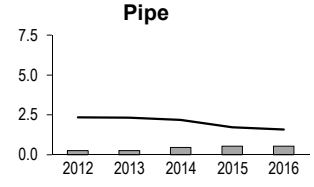
	2012	2013	2014	2015	2016
Greensboro	48.9%	47.0%	54.1%	57.1%	60.5%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



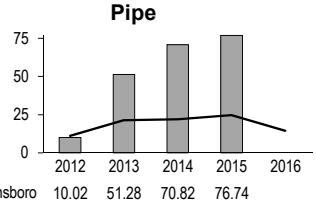
	2012	2013	2014	2015	2016
Greensboro	0.60%	0.60%	0.63%	0.61%	0.32%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



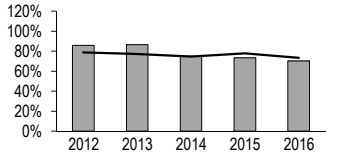
	2012	2013	2014	2015	2016
Greensboro	0.27	0.27	0.47	0.54	0.54
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Greensboro	10.02	51.28	70.82	76.74	
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Greensboro	86%	86%	75%	73%	70%
Average	79%	77%	75%	78%	73%

Hickory — Wastewater Services

Fiscal Year 2015–16

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 no regulatory violations connected the treatment portion of the system and five violations connected to the collection portion of the system during the fiscal year connected to sanitary system overflows.

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)	65.0
Persons per Square Mile	577
Topography	Gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$54,093

Service Profile

Total FTE Staff Positions	44.0
Treatment Plant	29.0
Line Crews	10.0
Billing/Collection	2.5
Other	2.5
Number of Treatment Plants	3
Total Treatment Capacity	16.5 MGD
Average Daily Flow	5.7 MGD
River Basin into Which System Discharges	Catawba
Miles of Gravity Main Line Pipe	497
Miles of Forced Main Line Pipe	43
Average Age of Main Line Pipe	44 years
Blocks in Sewer Mains	65
Number of System Breaks	7
Sanitary System Overflows	8
Number of Customer Accounts	15,241
Total Revenues Collected	$9,887,555

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	35.1%
Operating Costs	38.5%
Capital Costs	26.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,408,319
Operating Costs	$2,637,334
Capital Costs	$1,808,474
TOTAL	$6,854,127

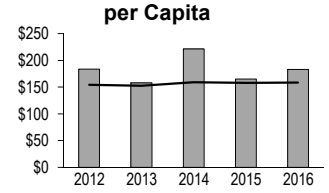
Hickory

Wastewater Services

Key: Hickory ■ Benchmarking Average — Fiscal Years 2012 through 2016

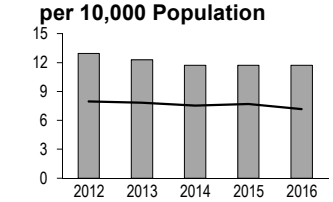
Resource Measures

Wastewater Services Cost per Capita



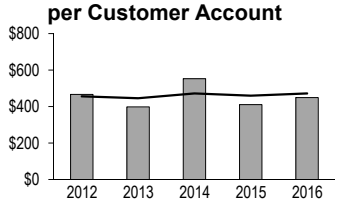
	2012	2013	2014	2015	2016
Hickory	$184	$158	$221	$165	$183
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Hickory	12.9	12.3	11.7	11.7	11.7
Average	8.0	7.8	7.5	7.7	7.2

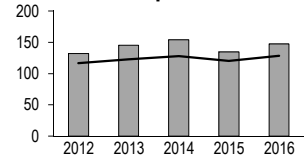
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Hickory	$466	$399	$553	$410	$450
Average	$457	$445	$472	$460	$472

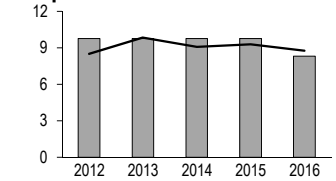
Workload Measures

Thousands of Gallons of Wastewater per Account



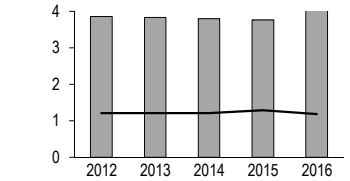
	2012	2013	2014	2015	2016
Hickory	131.9	145.3	154.2	134.7	147.3
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Hickory	9.8	9.8	9.8	9.8	8.3
Average	8.5	9.9	9.1	9.3	8.8

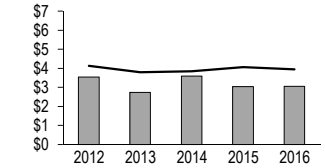
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Hickory	3.86	3.83	3.80	3.77	4.20
Average	1.21	1.21	1.21	1.29	1.18

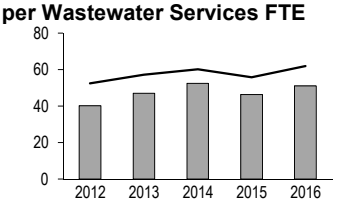
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



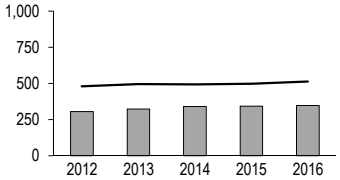
	2012	2013	2014	2015	2016
Hickory	$3.54	$2.74	$3.59	$3.04	$3.05
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Hickory	40.1	47.0	52.5	46.3	51.0
Average	52.4	57.3	60.2	55.7	62.0

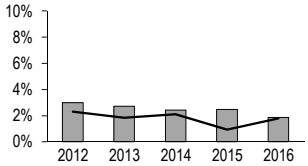
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Hickory	304	323	341	344	346
Average	479	495	493	498	513

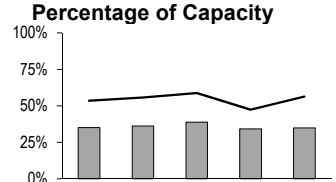
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



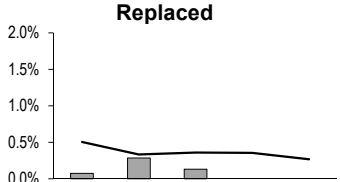
	2012	2013	2014	2015	2016
Hickory	3.00%	2.73%	2.44%	2.47%	1.86%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



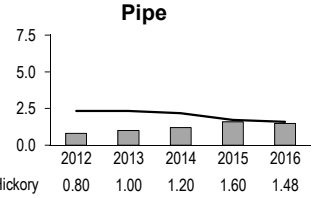
	2012	2013	2014	2015	2016
Hickory	35.0%	36.2%	38.8%	34.1%	34.8%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



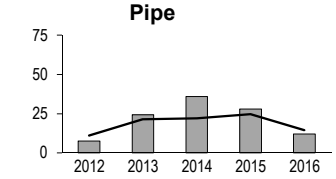
	2012	2013	2014	2015	2016
Hickory	0.08%	0.28%	0.13%	0.00%	0.00%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



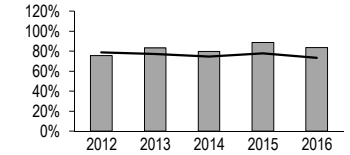
	2012	2013	2014	2015	2016
Hickory	0.80	1.00	1.20	1.60	1.48
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Hickory	7.60	24.40	36.00	28.00	12.04
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Hickory	76%	83%	80%	89%	83%
Average	79%	77%	75%	78%	73%

High Point Wastewater Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of High Point wastewater system is part of the 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 seven regulatory violations connected to the treatment portion of the system and twelve 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	110,638
Service Land Area (Square Miles)	80
Persons per Square Mile	1,392
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$49,720

Service Profile

Total FTE Staff Positions	91.6
Treatment Plant	30.0
Line Crews	29.0
Billing/Collection	6.0
Other	26.6
Number of Treatment Plants	2
Total Treatment Capacity	32.2 MGD
Average Daily Flow	16.2 MGD
River Basin into Which System Discharges	Yadkin-Pee Dee and Cape Fear
Miles of Gravity Main Line Pipe	656
Miles of Forced Main Line Pipe	16
Average Age of Main Line Pipe	35 years
Blocks in Sewer Mains	104
Number of System Breaks	67
Sanitary System Overflows	13
Number of Customer Accounts	40,131
Total Revenues Collected	$29,542,584

Full Cost Profile

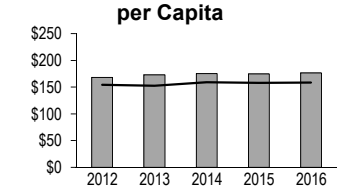
Cost Breakdown by Percentage	
Personal Services	30.9%
Operating Costs	32.5%
Capital Costs	36.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,036,684
Operating Costs	$6,357,439
Capital Costs	$7,148,648
TOTAL	$19,542,771

High Point Wastewater Services

Key: High Point ■ Benchmarking Average — Fiscal Years 2012 through 2016

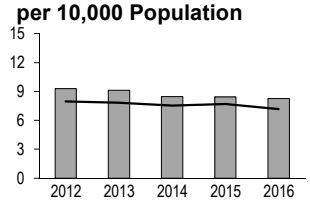
Resource Measures

Wastewater Services Cost per Capita



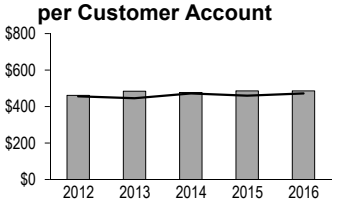
	2012	2013	2014	2015	2016
High Point	$168	$173	$175	$175	$177
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
High Point	9.3	9.1	8.5	8.4	8.3
Average	8.0	7.8	7.5	7.7	7.2

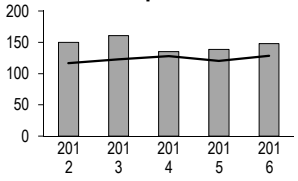
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
High Point	$462	$484	$477	$487	$487
Average	$457	$445	$472	$460	$472

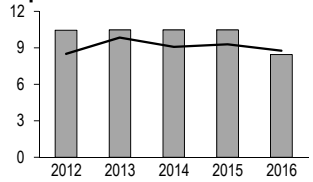
Workload Measures

Thousands of Gallons of Wastewater per Account



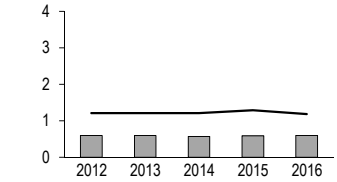
	2012	2013	2014	2015	2016
High Point	150.0	160.8	135.4	138.9	148.0
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
High Point	10.5	10.5	10.5	10.5	8.5
Average	8.5	9.9	9.1	9.3	8.8

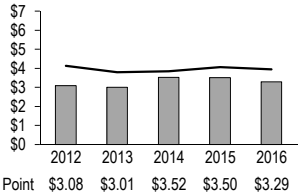
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
High Point	0.60	0.59	0.57	0.59	0.60
Average	1.21	1.21	1.21	1.29	1.18

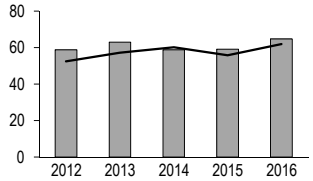
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



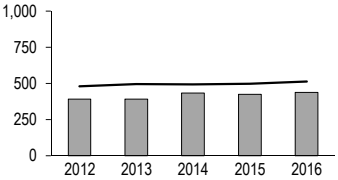
	2012	2013	2014	2015	2016
High Point	$3.08	$3.01	$3.52	$3.50	$3.29
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
High Point	58.8	63.1	58.8	59.2	64.8
Average	52.4	57.3	60.2	55.7	62.0

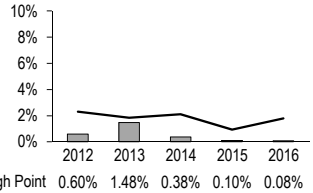
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
High Point	392	392	435	426	438
Average	479	495	493	498	513

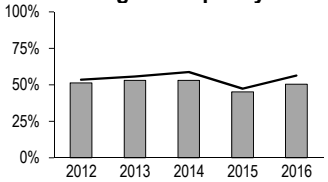
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



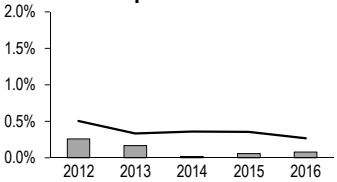
	2012	2013	2014	2015	2016
High Point	0.60%	1.48%	0.38%	0.10%	0.08%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



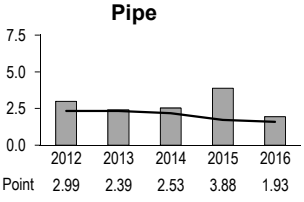
	2012	2013	2014	2015	2016
High Point	51.3%	53.0%	53.0%	45.2%	50.4%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



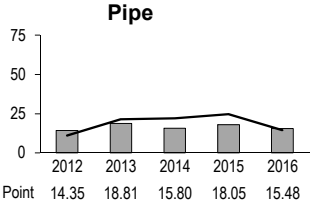
	2012	2013	2014	2015	2016
High Point	0.26%	0.16%	0.02%	0.05%	0.08%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



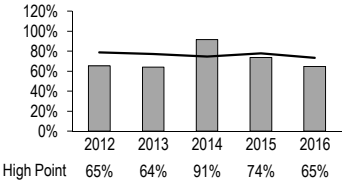
	2012	2013	2014	2015	2016
High Point	2.99	2.39	2.53	3.88	1.93
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
High Point	14.35	18.81	15.80	18.05	15.48
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
High Point	65%	64%	91%	74%	65%
Average	79%	77%	75%	78%	73%

Raleigh — Wastewater Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Public Utilities is a department within the City of Raleigh. It is a combined enterprise system which provides drinking water and sewage treatment services to the City of Raleigh and several meger towns, including Garner, Rolesville, Knightdale, Wake Forest, Wendell, and Zebulon. The City of Raleigh also provides wastewater collection for the Towns of Middlesex, Clayton, Apex, and for Johnston County. Approximately 549,000 people live in the service area of roughly 299 square miles.

Wastewater is treated at three plants. The total combined treatment capacity at the three plants is 65 million gallons per day. The plants use primary, secondary, and tertiary treatment along with a BNR process combined with reclaimed water distribution and biosolids treatment and land application.

The system had no regulatory violations connected to the treatment portion of the wastewater system and one regulatory violation during the fiscal year for issues connected to collections related to sanitary system overflows.

Conditions Affecting Service, Performance, and Costs

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

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	549,112
Service Land Area (Square Miles)	299.0
Persons per Square Mile	1,836
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$68,678

Service Profile

Total FTE Staff Positions	324.0
Treatment Plant	55.0
Line Crews	118.0
Billing/Collection	56.0
Other	95.0
Number of Treatment Plants	3
Total Treatment Capacity	65.0 MGD
Average Daily Flow	49.9 MGD
River Basin into Which System Discharges	Neuse
Miles of Gravity Main Line Pipe	2,300
Miles of Forced Main Line Pipe	125
Average Age of Main Line Pipe	30 years
Blocks in Sewer Mains	25
Number of System Breaks	220
Sanitary System Overflows	25
Number of Customer Accounts	168,639
Total Revenues Collected	$117,353,092

Full Cost Profile

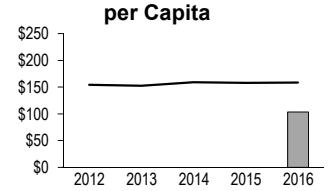
Cost Breakdown by Percentage	
Personal Services	24.0%
Operating Costs	48.1%
Capital Costs	27.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$13,651,885
Operating Costs	$27,334,631
Capital Costs	$15,849,777
TOTAL	$56,836,293

Raleigh — Wastewater Services

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2012 through 2016

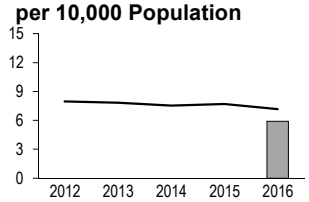
Resource Measures

Wastewater Services Cost per Capita



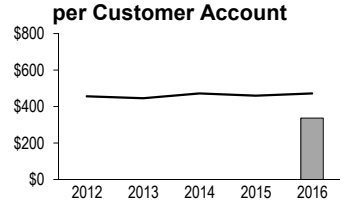
	2012	2013	2014	2015	2016
Raleigh					$104
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Raleigh					5.9
Average	8.0	7.8	7.5	7.7	7.2

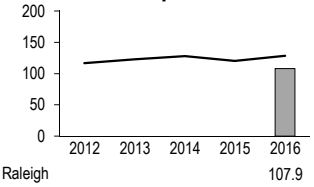
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Raleigh					$337
Average	$457	$445	$472	$460	$472

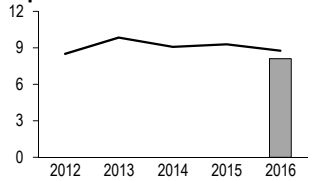
Workload Measures

Thousands of Gallons of Wastewater per Account



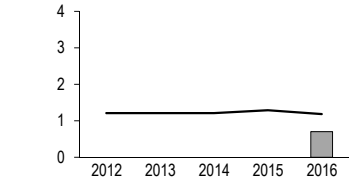
	2012	2013	2014	2015	2016
Raleigh					107.9
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Raleigh					8.1
Average	8.5	9.9	9.1	9.3	8.8

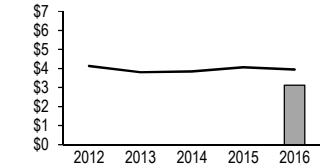
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Raleigh					0.70
Average	1.21	1.21	1.21	1.29	1.18

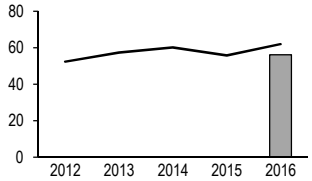
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



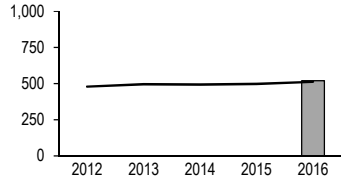
	2012	2013	2014	2015	2016
Raleigh					$3.12
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Raleigh					56.2
Average	52.4	57.3	60.2	55.7	62.0

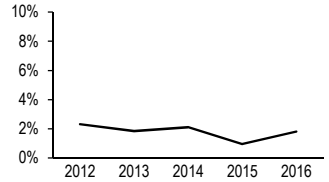
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Raleigh					520
Average	479	495	493	498	513

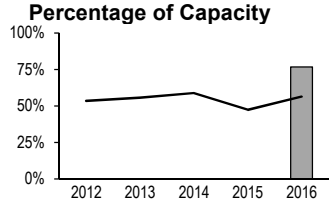
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



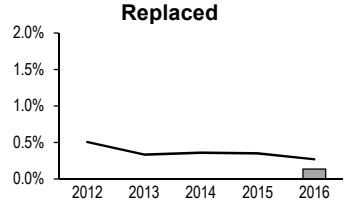
	2012	2013	2014	2015	2016
Raleigh					
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



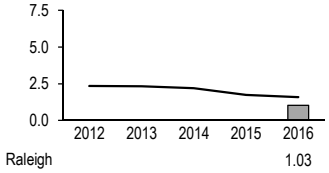
	2012	2013	2014	2015	2016
Raleigh					76.8%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



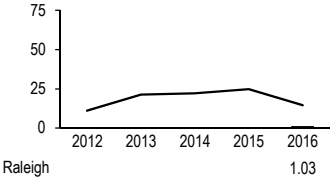
	2012	2013	2014	2015	2016
Raleigh					0.13%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



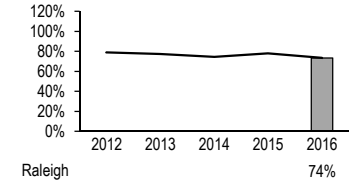
	2012	2013	2014	2015	2016
Raleigh					1.03
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Raleigh					1.03
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Raleigh					74%
Average	79%	77%	75%	78%	73%

Salisbury — Wastewater Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Salisbury provides water and sewer service through a combined enterprise fund department known as Salisbury-Rowan Utilities. The system covers Salisbury and much of Rowan County as well.

Wastewater is treated at two plants. Both plants use a 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 no regulatory violations during the fiscal year for issues related to treatment and eight violations connected to collections related to sanitary system overflows.

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	52,400
Service Land Area (Square Miles)	45.5
Persons per Square Mile	1,152
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$40,192

Service Profile

Total FTE Staff Positions	53.5
Treatment Plant	19.0
Line Crews	14.5
Billing/Collection	5.5
Other	14.5
Number of Treatment Plants	2
Total Treatment Capacity	12.5 MGD
Average Daily Flow	8.7 MGD
River Basin into Which System Discharges	Yadkin
Miles of Gravity Main Line Pipe	400
Miles of Forced Main Line Pipe	30
Average Age of Main Line Pipe	44 years
Blocks in Sewer Mains	36
Number of System Breaks	10
Sanitary System Overflows	8
Number of Customer Accounts	16,462
Total Revenues Collected	$11,695,562

Full Cost Profile

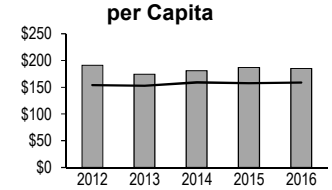
Cost Breakdown by Percentage	
Personal Services	33.0%
Operating Costs	41.4%
Capital Costs	25.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,202,261
Operating Costs	$4,015,702
Capital Costs	$2,482,569
TOTAL	$9,700,532

Salisbury — Wastewater Services

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2012 through 2016

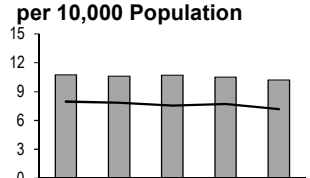
Resource Measures

Wastewater Services Cost per Capita



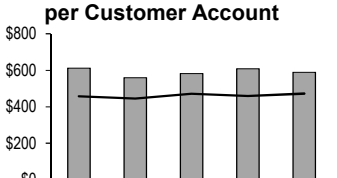
	2012	2013	2014	2015	2016
Salisbury	$191	$175	$181	$187	$185
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Salisbury	10.8	10.6	10.7	10.5	10.2
Average	8.0	7.8	7.5	7.7	7.2

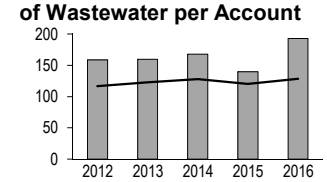
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Salisbury	$613	$559	$582	$608	$589
Average	$457	$445	$472	$460	$472

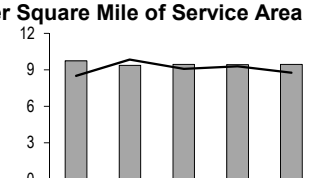
Workload Measures

Thousands of Gallons of Wastewater per Account



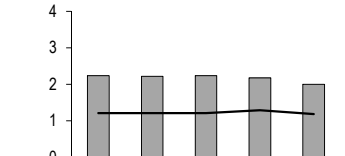
	2012	2013	2014	2015	2016
Salisbury	158.5	160.0	168.0	139.5	192.9
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Salisbury	9.8	9.4	9.5	9.4	9.4
Average	8.5	9.9	9.1	9.3	8.8

Number of Lift Stations per 1,000 Accounts



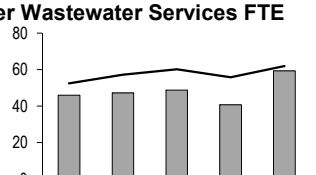
	2012	2013	2014	2015	2016
Salisbury	2.23	2.22	2.24	2.18	2.00
Average	1.21	1.21	1.21	1.29	1.18

Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater

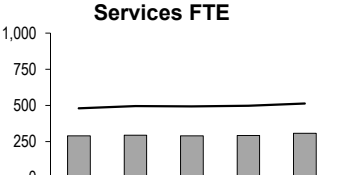
	2012	2013	2014	2015	2016
Salisbury	$3.86	$3.49	$3.47	$4.35	$3.06
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Salisbury	46.0	47.1	48.7	40.8	59.3
Average	52.4	57.3	60.2	55.7	62.0

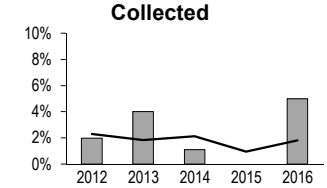
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Salisbury	290	295	290	292	308
Average	479	495	493	498	513

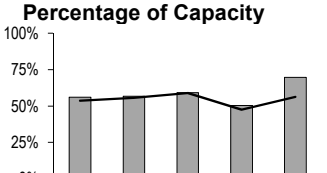
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



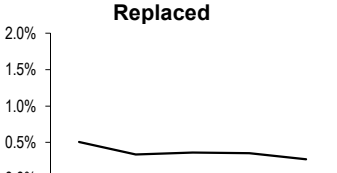
	2012	2013	2014	2015	2016
Salisbury	1.97%	4.00%	1.09%		5.00%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



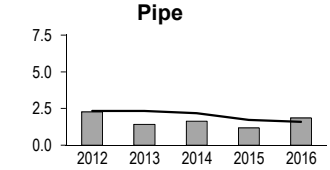
	2012	2013	2014	2015	2016
Salisbury	56.0%	56.8%	59.2%	50.4%	69.6%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



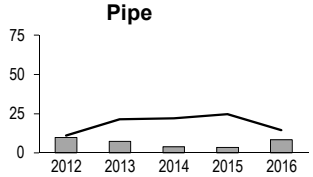
	2012	2013	2014	2015	2016
Salisbury	0.07%	0.03%	0.02%	0.01%	0.00%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



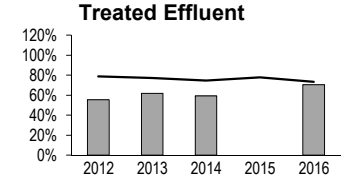
	2012	2013	2014	2015	2016
Salisbury	2.27	1.41	1.63	1.17	1.86
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Salisbury	9.75	7.31	3.97	3.50	8.38
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Salisbury	55%	62%	59%		71%
Average	79%	77%	75%	78%	73%

Wilson — Wastewater Services

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

Wastewater in Wilson 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 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 in 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 reported four 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 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	53,600
Service Land Area (Square Miles)	34
Persons per Square Mile	1,576
Topography	Flat
Climate	Temperate; little ice and snow
Median Family Income U.S. Census 2010	$43,442

Service Profile

Total FTE Staff Positions	60.0
Treatment Plant	31.0
Line Crews	26.0
Billing/Collection	2.0
Other	1.0
Number of Treatment Plants	1
Total Treatment Capacity	14.0 MGD
Average Daily Flow	9.5 MGD
River Basin into Which System Discharges	Neuse
Miles of Gravity Main Line Pipe	343
Miles of Forced Main Line Pipe	10
Average Age of Main Line Pipe	39 years
Blocks in Sewer Mains	2
Number of System Breaks	6
Sanitary System Overflows	1
Number of Customer Accounts	19,879
Total Revenues Collected	$12,338,308

Full Cost Profile

Cost Breakdown by Percentage	
Personal Services	37.7%
Operating Costs	38.5%
Capital Costs	23.8%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,326,793
Operating Costs	$4,414,819
Capital Costs	$2,731,143
TOTAL	$11,472,755

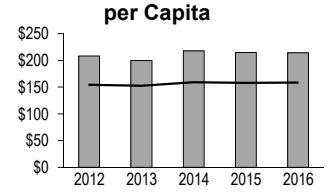
Wilson

Wastewater Services

Key: Wilson ■ Benchmarking Average — Fiscal Years 2012 through 2016

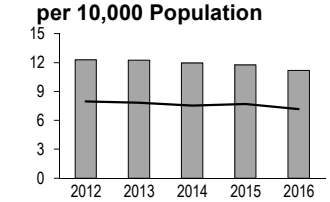
Resource Measures

Wastewater Services Cost per Capita



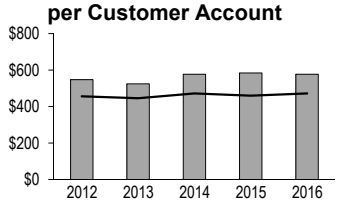
	2012	2013	2014	2015	2016
Wilson	$208	$200	$218	$215	$214
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Wilson	12.3	12.2	11.9	11.8	11.2
Average	8.0	7.8	7.5	7.7	7.2

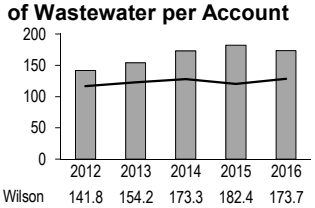
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Wilson	$548	$524	$577	$584	$577
Average	$457	$445	$472	$460	$472

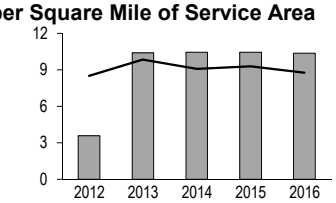
Workload Measures

Thousands of Gallons of Wastewater per Account



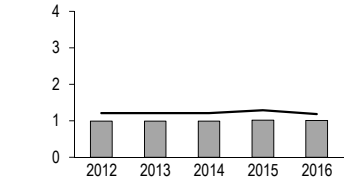
	2012	2013	2014	2015	2016
Wilson	141.8	154.2	173.3	182.4	173.7
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Wilson	3.6	10.4	10.4	10.4	10.4
Average	8.5	9.9	9.1	9.3	8.8

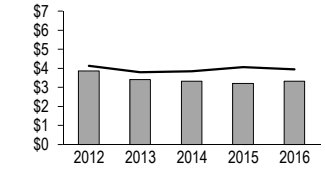
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Wilson	1.00	0.99	0.99	1.01	1.01
Average	1.21	1.21	1.21	1.29	1.18

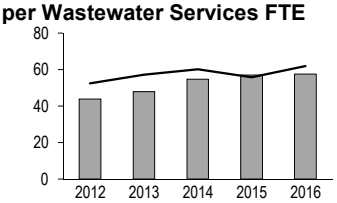
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



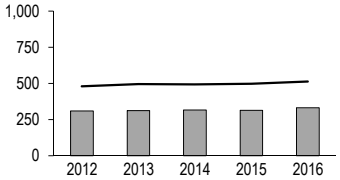
	2012	2013	2014	2015	2016
Wilson	$3.86	$3.40	$3.33	$3.20	$3.32
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Wilson	43.9	48.0	54.8	57.1	57.6
Average	52.4	57.3	60.2	55.7	62.0

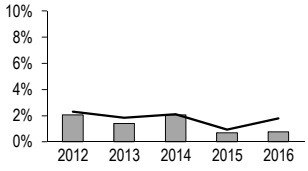
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Wilson	309	311	316	313	331
Average	479	495	493	498	513

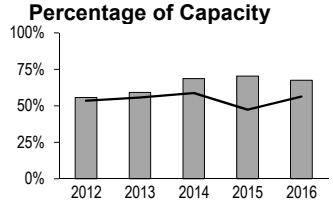
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



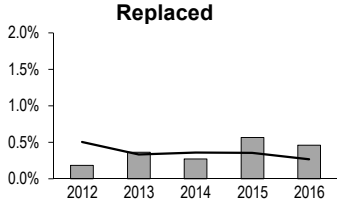
	2012	2013	2014	2015	2016
Wilson	2.07%	1.40%	2.07%	0.70%	0.78%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



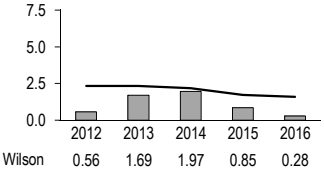
	2012	2013	2014	2015	2016
Wilson	55.8%	59.1%	68.6%	70.4%	67.6%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



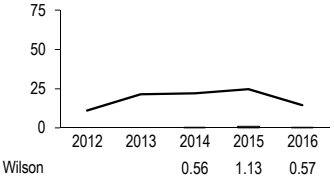
	2012	2013	2014	2015	2016
Wilson	0.18%	0.36%	0.27%	0.56%	0.46%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



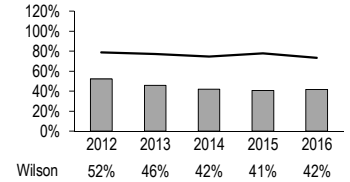
	2012	2013	2014	2015	2016
Wilson	0.56	1.69	1.97	0.85	0.28
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Wilson			0.56	1.13	0.57
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Wilson	52%	46%	42%	41%	42%
Average	79%	77%	75%	78%	73%

Winston-Salem Wastewater Services

Fiscal Year 2015–16

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 no regulatory violations connected to the treatment portion of the system and seventy-four reported violations for the collection portion of the system connected to sanitary system overflows.

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.

The city has used improvements in its GIS mapping systems and incident records to change the process by which the Division ranks and proactively cleans pipes. This process is expected to lower the number of breaks and overflows.

Municipal Profile

Estimated Service Population	349,664
Service Land Area (Square Miles)	366
Persons per Square Mile	955
Topography	Gently rolling
Climate	Temperate; some ice and snow
Median Family Income U.S. Census 2010	$51,491

Service Profile

Total FTE Staff Positions	176.0
Treatment Plant	83.0
Line Crews	65.0
Billing/Collection	9.0
Other	19.0
Number of Treatment Plants	2
Total Treatment Capacity	51.0 MGD
Average Daily Flow	33.0 MGD
River Basin into Which System Discharges	Yadkin
Miles of Gravity Main Line Pipe	1,718
Miles of Forced Main Line Pipe	32
Average Age of Main Line Pipe	50 years
Blocks in Sewer Mains	307
Number of System Breaks	44
Sanitary System Overflows	74
Number of Customer Accounts	97,245
Total Revenues Collected	$48,093,940

Full Cost Profile

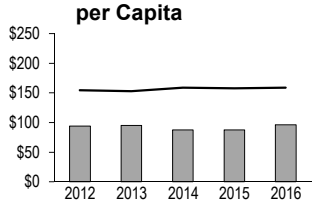
Cost Breakdown by Percentage	
Personal Services	24.5%
Operating Costs	36.1%
Capital Costs	39.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$8,245,151
Operating Costs	$12,142,527
Capital Costs	$13,240,067
TOTAL	$33,627,745

Winston-Salem Wastewater Services

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2012 through 2016

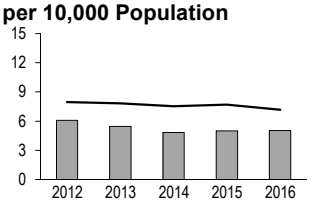
Resource Measures

Wastewater Services Cost per Capita



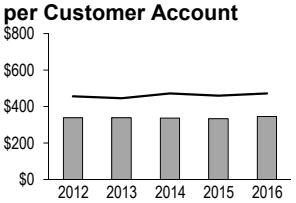
	2012	2013	2014	2015	2016
Winston-Salem	$94	$95	$87	$87	$96
Average	$154	$153	$159	$158	$159

Waterwater Services FTEs per 10,000 Population



	2012	2013	2014	2015	2016
Winston-Salem	6.1	5.5	4.8	5.0	5.0
Average	8.0	7.8	7.5	7.7	7.2

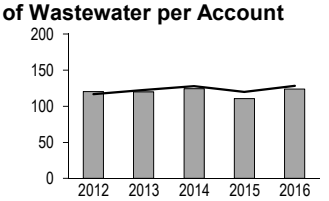
Waterwaste Services Cost per Customer Account



	2012	2013	2014	2015	2016
Winston-Salem	$338	$339	$336	$333	$346
Average	$457	$445	$472	$460	$472

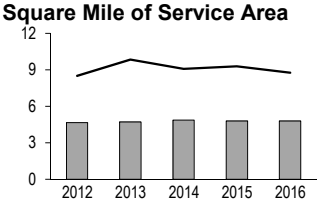
Workload Measures

Thousands of Gallons of Wastewater per Account



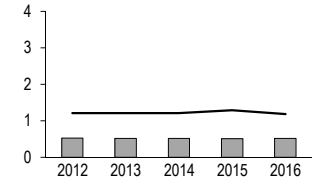
	2012	2013	2014	2015	2016
Winston-Salem	120.5	120.0	124.3	110.8	124.0
Average	116.6	122.8	127.9	120.1	128.5

Miles of Sewer Main Line Pipe per Square Mile of Service Area



	2012	2013	2014	2015	2016
Winston-Salem	4.7	4.7	4.9	4.8	4.8
Average	8.5	9.9	9.1	9.3	8.8

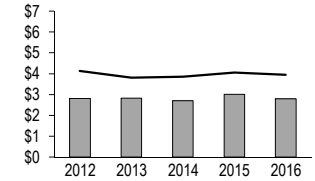
Number of Lift Stations per 1,000 Accounts



	2012	2013	2014	2015	2016
Winston-Salem	0.52	0.52	0.51	0.51	0.51
Average	1.21	1.21	1.21	1.29	1.18

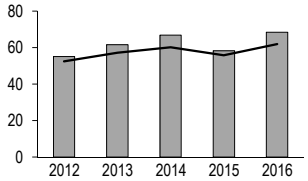
Efficiency Measures

Total Cost per 1,000 Gallons of Treated Wastewater



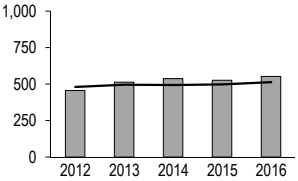
	2012	2013	2014	2015	2016
Winston-Salem	$2.80	$2.82	$2.71	$3.00	$2.79
Average	$4.13	$3.80	$3.85	$4.06	$3.94

Million Gallons of Wastewater per Wastewater Services FTE



	2012	2013	2014	2015	2016
Winston-Salem	55.1	61.6	66.9	58.3	68.5
Average	52.4	57.3	60.2	55.7	62.0

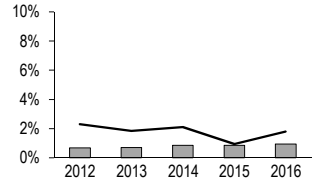
Customer Accounts per Wastewater Services FTE



	2012	2013	2014	2015	2016
Winston-Salem	457	513	538	526	553
Average	479	495	493	498	513

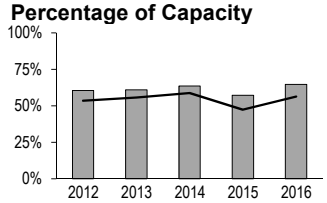
Effectiveness Measures

Percentage of Wastewater Bills Not Collected



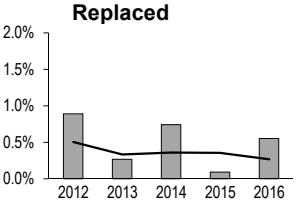
	2012	2013	2014	2015	2016
Winston-Salem	0.67%	0.71%	0.85%	0.86%	0.94%
Average	2.31%	1.84%	2.11%	0.95%	1.80%

Average Daily Treatment as a Percentage of Capacity



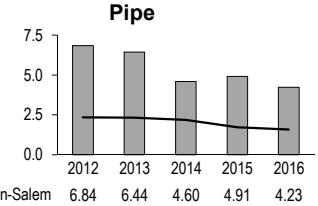
	2012	2013	2014	2015	2016
Winston-Salem	60.5%	60.9%	63.6%	57.3%	64.8%
Average	53.6%	55.7%	58.9%	47.4%	56.3%

Percent of Main Line Rehabbed or Replaced



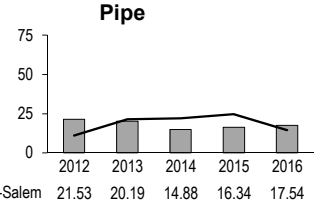
	2012	2013	2014	2015	2016
Winston-Salem	0.89%	0.27%	0.74%	0.09%	0.55%
Average	0.51%	0.33%	0.36%	0.35%	0.27%

Overflows per 100 Miles of Main Line Pipe



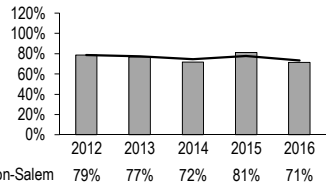
	2012	2013	2014	2015	2016
Winston-Salem	6.84	6.44	4.60	4.91	4.23
Average	2.34	2.32	2.18	1.72	1.59

Backups per 100 Miles of Main Line Pipe



	2012	2013	2014	2015	2016
Winston-Salem	21.53	20.19	14.88	16.34	17.54
Average	11.16	21.36	22.11	24.78	14.53

Billed Wastewater as a Percent of Treated Effluent



	2012	2013	2014	2015	2016
Winston-Salem	79%	77%	72%	81%	71%
Average	79%	77%	75%	78%	73%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Performance and Cost Data

CORE PARKS AND RECREATION


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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 includes 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 use by 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 those 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 trail, 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 July 2015	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	44,745	35.0	11	506.0	1	11	27	10.3
Asheville	90,918	132.7	47	869.0	13	24	27	5.5
Burlington	52,240	64.5	22	631.5	7	21	42	10.5
Chapel Hill	59,605	41.7	30	1,082.0	2	11	16	23.0
Concord	87,130	32.8	9	226.0	3	13	22	10.8
Greenville	87,960	129.5	26	1,460.9	8	17	23	7.8
Hickory	40,351	55.0	25	514.0	8	39	25	11.0
High Point	109,749	137.0	46	2,058.0	7	34	54	23.5
Raleigh	440,746	711.9	220	6,039.7	41	96	113	116.7
Salisbury	34,285	20.0	28	508.0	4	18	12	16.9
Wilson	49,361	71.0	28	400.0	4	25	26	14.5
Winston-Salem	238,899	199.6	79	3,688.0	17	44	97	23.3

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

Apex — Core Parks and Recreation

Fiscal Year 2015–16

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 506 land acres; most of this area is currently developed. The city has ten 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 2015)	44,745
Land Area (Square Miles)	17.25
Persons per Square Mile	2,595
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	5.5
Maintenance Staff FTEs	16.0
Program and Facility FTEs	13.5
Other Staff FTEs	0.0
TOTAL	35.0
Number of Parks and Sites	11
Total Land Acreage in Parks	506.0
Miles of Trails in Parks	10.3
Recreational Facilities	
Indoor and Outdoor Pools	0
Recreation Centers	1
Outdoor Basketball Courts	6
Outdoor Tennis Courts	15
Playgrounds	11
Diamond Fields	13
Rectangular Fields	12
Other Athletic Fields	2
Picnic Shelters	13
Parks and Recreation Revenues	
User Fees	$905,249
Grants	$0
Sponsorships	$6,800
Donations	$0

Full Cost Profile

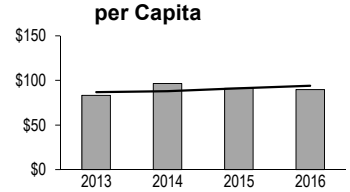
Cost Breakdown by Percentage	
Personal Services	44.5%
Operating Costs	45.1%
Capital Costs	10.5%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,788,097
Operating Costs	$1,813,884
Capital Costs	$420,431
TOTAL	$4,022,412

Apex — Core Parks and Recreation

Key: Apex ■ Benchmarking Average — Fiscal Years 2013 through 2016

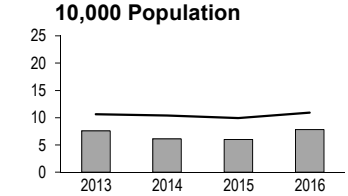
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Apex	$83	$97	$91	$90
Average	$87	$88	$91	$94

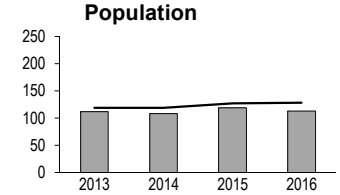
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Apex	7.5	6.1	6.0	7.8
Average	10.6	10.4	9.9	10.9

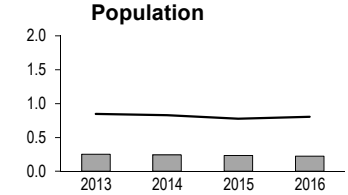
Facilities Measures

Land Acres of Parks per 10,000 Population



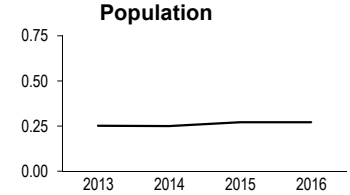
	2013	2014	2015	2016
Apex	111.40	108.25	118.53	113.09
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



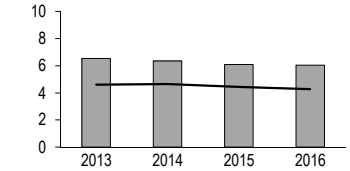
	2013	2014	2015	2016
Apex	0.25	0.24	0.23	0.22
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



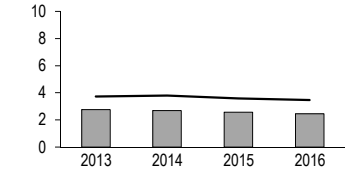
	2013	2014	2015	2016
Apex	0.00	0.00	0.00	0.00
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



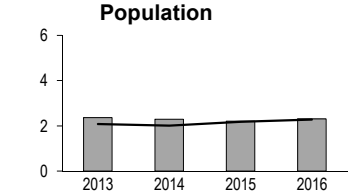
	2013	2014	2015	2016
Apex	6.54	6.35	6.09	6.03
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Apex	2.77	2.69	2.58	2.46
Average	3.73	3.79	3.57	3.46

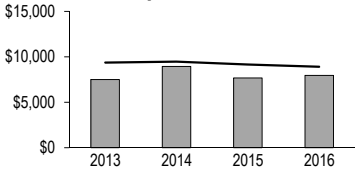
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Apex	2.36	2.29	2.20	2.30
Average	2.08	2.00	2.18	2.27

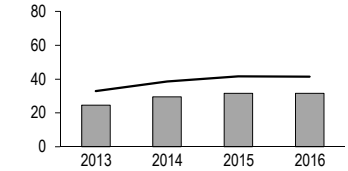
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



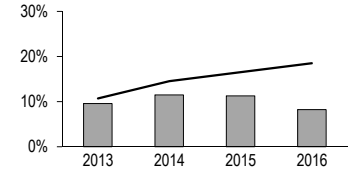
	2013	2014	2015	2016
Apex	$7,493	$8,934	$7,697	$7,949
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Apex	24.6	29.5	31.6	31.6
Average	32.9	38.6	41.6	41.5

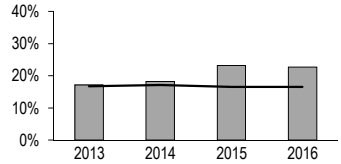
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Apex	9.6%	11.5%	11.3%	8.2%
Average	10.7%	14.5%	16.6%	18.5%

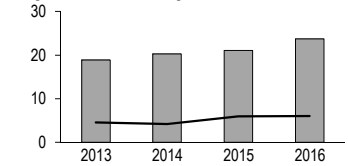
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Apex	17.1%	18.2%	23.2%	22.7%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Apex	18.86	20.28	21.08	23.69
Average	4.58	4.15	5.92	5.99

Asheville — Core Parks and Recreation

Fiscal Year 2015–16

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-seven separate parks and sites. These parks cover 869 land acres; about three-fourths of them are currently developed. The city has nearly six miles of 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 2015)	90,918
Land Area (Square Miles)	45.52
Persons per Square Mile	1,997
Topography	Hilly, mountains
Climate	Moderate; ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	14.0
Maintenance Staff FTEs	40.4
Program and Facility FTEs	66.2
Other Staff FTEs	12.2
TOTAL	132.7
Number of Parks and Sites	47
Total Land Acreage in Parks	869.0
Miles of Trails in Parks	5.5
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	13
Outdoor Basketball Courts	15
Outdoor Tennis Courts	26
Playgrounds	24
Diamond Fields	19
Rectangular Fields	5
Other Athletic Fields	3
Picnic Shelters	11
Parks and Recreation Revenues	
User Fees	$1,471,914
Grants	$130,348
Sponsorships	$0
Donations	$14,152

Full Cost Profile

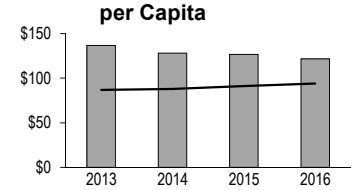
Cost Breakdown by Percentage	
Personal Services	53.3%
Operating Costs	35.3%
Capital Costs	11.4%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$5,893,725
Operating Costs	$3,901,042
Capital Costs	$1,258,358
TOTAL	$11,053,125

Asheville — Core Parks and Recreation

Key: Asheville ■ Benchmarking Average — Fiscal Years 2013 through 2016

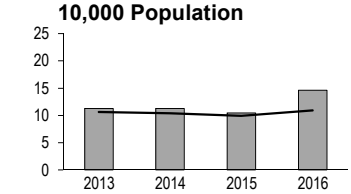
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Asheville	$137	$128	$127	$122
Average	$87	$88	$91	$94

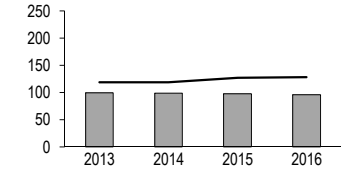
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Asheville	11.3	11.3	10.5	14.6
Average	10.6	10.4	9.9	10.9

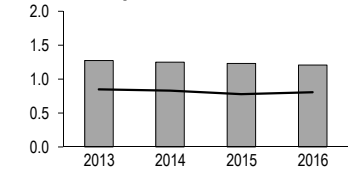
Facilities Measures

Land Acres of Parks per 10,000 Population



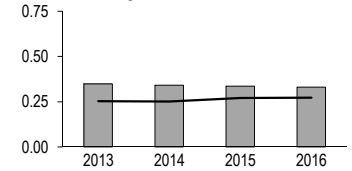
	2013	2014	2015	2016
Asheville	99.47	98.74	97.36	95.58
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



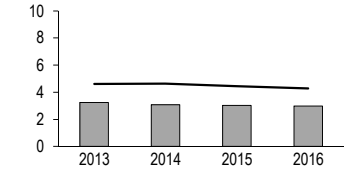
	2013	2014	2015	2016
Asheville	1.28	1.25	1.23	1.21
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



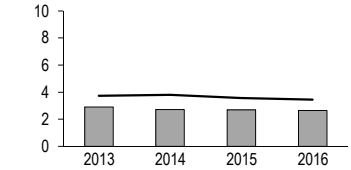
	2013	2014	2015	2016
Asheville	0.35	0.34	0.34	0.33
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



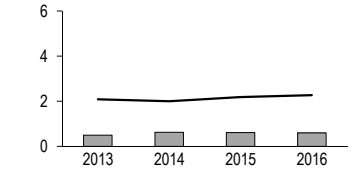
	2013	2014	2015	2016
Asheville	3.25	3.07	3.03	2.97
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Asheville	2.90	2.73	2.69	2.64
Average	3.73	3.79	3.57	3.46

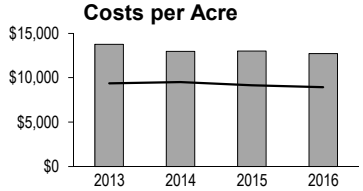
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Asheville	0.50	0.62	0.61	0.60
Average	2.08	2.00	2.18	2.27

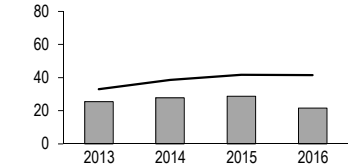
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



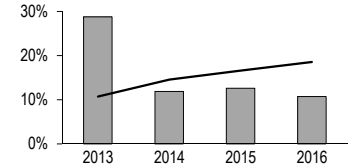
	2013	2014	2015	2016
Asheville	$13,748	$12,977	$13,013	$12,720
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Asheville	25.4	27.8	28.7	21.5
Average	32.9	38.6	41.6	41.5

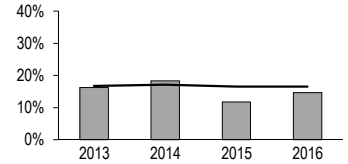
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Asheville	28.7%	11.8%	12.6%	10.7%
Average	10.7%	14.5%	16.6%	18.5%

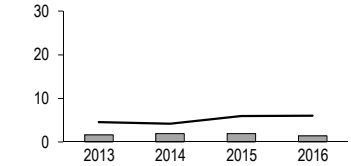
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Asheville	16.3%	18.3%	11.7%	14.6%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Asheville	1.62	1.93	1.90	1.43
Average	4.58	4.15	5.92	5.99

Burlington — Core Parks and Recreation

Fiscal Year 2015–16

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 ten miles of trails.

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 2015)	52,240
Land Area (Square Miles)	30.52
Persons per Square Mile	1,711
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	10.5
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	7
Outdoor Basketball Courts	9
Outdoor Tennis Courts	17
Playgrounds	21
Diamond Fields	22
Rectangular Fields	18
Other Athletic Fields	2
Picnic Shelters	13
Parks and Recreation Revenues	
User Fees	$2,143,860
Grants	$521,912
Sponsorships	$48,450
Donations	$0

Full Cost Profile

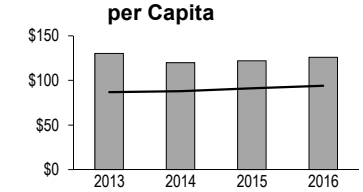
Cost Breakdown by Percentage	
Personal Services	58.0%
Operating Costs	34.8%
Capital Costs	7.2%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,820,542
Operating Costs	$2,292,667
Capital Costs	$471,458
TOTAL	$6,584,667

Burlington Core Parks and Recreation

Key: Burlington ■ Benchmarking Average — Fiscal Years 2013 through 2016

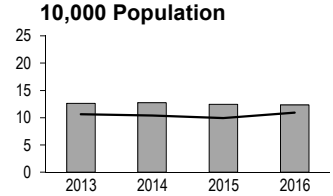
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Burlington	$130	$120	$122	$126
Average	$87	$88	$91	$94

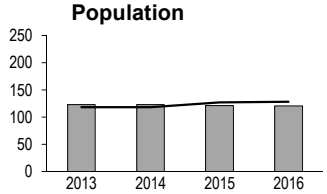
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Burlington	12.6	12.7	12.4	12.3
Average	10.6	10.4	9.9	10.9

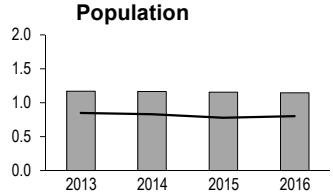
Facilities Measures

Land Acres of Parks per 10,000 Population



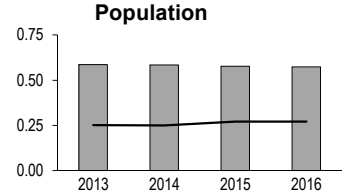
	2013	2014	2015	2016
Burlington	123.35	122.86	121.61	120.87
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



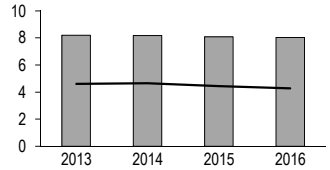
	2013	2014	2015	2016
Burlington	1.17	1.17	1.16	1.15
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



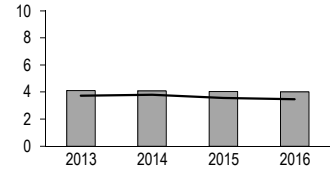
	2013	2014	2015	2016
Burlington	0.59	0.58	0.58	0.57
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



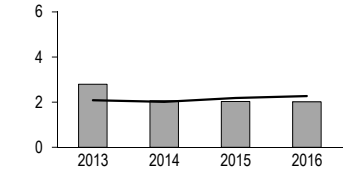
	2013	2014	2015	2016
Burlington	8.20	8.17	8.09	8.04
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Burlington	4.10	4.09	4.04	4.02
Average	3.73	3.79	3.57	3.46

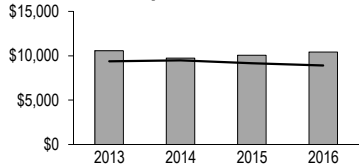
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Burlington	2.79	2.05	2.03	2.01
Average	2.08	2.00	2.18	2.27

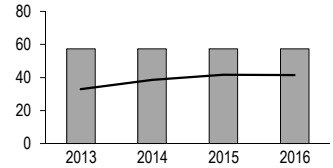
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



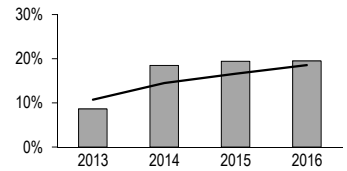
	2013	2014	2015	2016
Burlington	$10,571	$9,748	$10,051	$10,428
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Burlington	57.4	57.4	57.4	57.4
Average	32.9	38.6	41.6	41.5

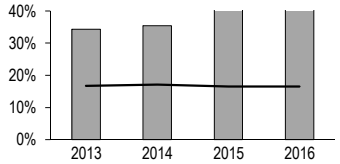
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Burlington	8.6%	18.5%	19.4%	19.5%
Average	10.7%	14.5%	16.6%	18.5%

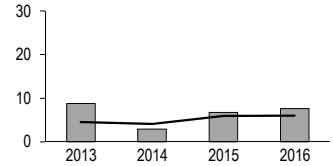
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Burlington	34.3%	35.4%	47.5%	41.2%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Burlington	8.79	2.92	6.74	7.66
Average	4.58	4.15	5.92	5.99

Chapel Hill — Core Parks and Recreation

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The Town of Chapel Hill provides recreation services through the separate Parks and Recreation Department. The town has agreements with Orange County for use of the senior center and county participants in other programs. The town also has agreements with the Town of Carrboro, the Street Scene Teen Center, Holmes Childcare Center, and Chapel Hill-Carrboro City Schools.

The town has thirty separate parks and sites. These parks cover 1,082 land acres much of which is currently undeveloped. The town has twenty-three miles of trails.

Conditions Affecting Service, Performance, and Costs

The Town of Chapel Hill began participation in the benchmarking project in July 2015, with FY 2014–15 being the first reporting year.

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2015)	59,605
Land Area (Square Miles)	21.17
Persons per Square Mile	2,815
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	6.0
Maintenance Staff FTEs	13.5
Program and Facility FTEs	22.2
Other Staff FTEs	0.0
TOTAL	41.7
Number of Parks and Sites	30
Total Land Acreage in Parks	1,082.0
Miles of Trails in Parks	23.0
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	2
Outdoor Basketball Courts	7
Outdoor Tennis Courts	18
Playgrounds	11
Diamond Fields	7
Rectangular Fields	9
Other Athletic Fields	0
Picnic Shelters	8
Parks and Recreation Revenues	
User Fees	$1,099,496
Grants	$0
Sponsorships	$73,049
Donations	$19,650

Full Cost Profile

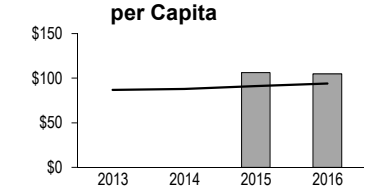
Cost Breakdown by Percentage	
Personal Services	55.7%
Operating Costs	35.3%
Capital Costs	9.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$3,484,835
Operating Costs	$2,207,423
Capital Costs	$562,145
TOTAL	$6,254,403

Chapel Hill — Core Parks and Recreation

Key: Chapel Hill ■ Benchmarking Average — Fiscal Years 2013 through 2016

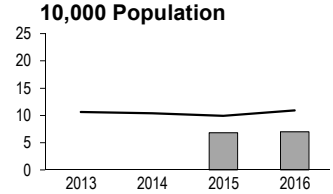
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Chapel Hill			$106	$105
Average	$87	$88	$91	$94

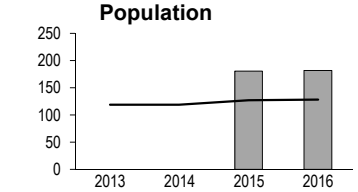
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Chapel Hill			6.8	7.0
Average	10.6	10.4	9.9	10.9

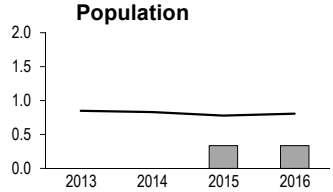
Facilities Measures

Land Acres of Parks per 10,000 Population



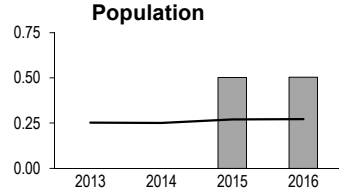
	2013	2014	2015	2016
Chapel Hill			180.73	181.53
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



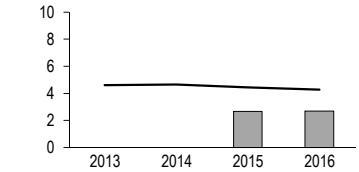
	2013	2014	2015	2016
Chapel Hill			0.33	0.34
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



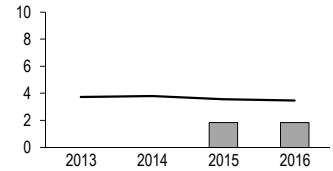
	2013	2014	2015	2016
Chapel Hill			0.50	0.50
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



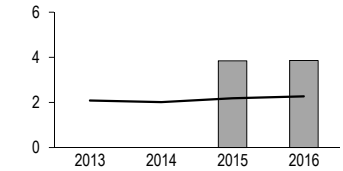
	2013	2014	2015	2016
Chapel Hill			2.68	2.68
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Chapel Hill			1.84	1.85
Average	3.73	3.79	3.57	3.46

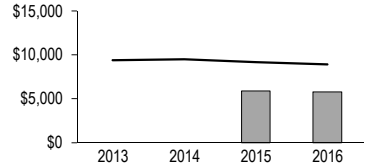
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Chapel Hill			3.84	3.85
Average	2.08	2.00	2.18	2.27

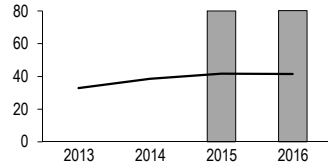
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



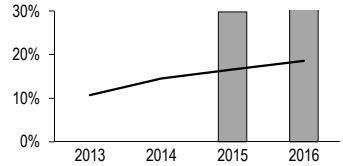
	2013	2014	2015	2016
Chapel Hill			$5,875	$5,780
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Chapel Hill			80.0	80.1
Average	32.9	38.6	41.6	41.5

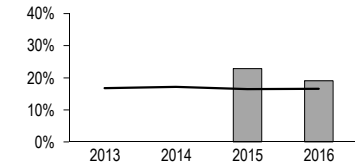
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Chapel Hill			29.8%	32.8%
Average	10.7%	14.5%	16.6%	18.5%

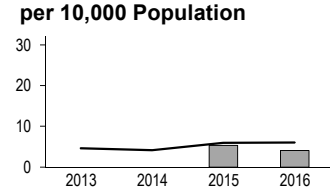
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Chapel Hill			22.8%	19.1%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Chapel Hill			5.35	4.03
Average	4.58	4.15	5.92	5.99

Concord — Core Parks and Recreation

Fiscal Year 2015–16

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 nine separate parks and sites. These parks cover 226 land acres. The city has ten 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 2015)	87,130
Land Area (Square Miles)	61.09
Persons per Square Mile	1,426
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	16.5
Other Staff FTEs	11.3
TOTAL	32.8
Number of Parks and Sites	9
Total Land Acreage in Parks	226.0
Miles of Trails in Parks	10.8
Recreational Facilities	
Indoor and Outdoor Pools	1
Recreation Centers	3
Outdoor Basketball Courts	9
Outdoor Tennis Courts	14
Playgrounds	13
Diamond Fields	12
Rectangular Fields	7
Other Athletic Fields	3
Picnic Shelters	14
Parks and Recreation Revenues	
User Fees	$326,093
Grants	$0
Sponsorships	$8,755
Donations	$0

Full Cost Profile

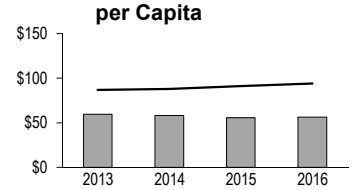
Cost Breakdown by Percentage	
Personal Services	26.5%
Operating Costs	68.6%
Capital Costs	4.9%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,303,247
Operating Costs	$3,378,931
Capital Costs	$240,582
TOTAL	$4,922,760

Concord — Core Parks and Recreation

Key: Concord ■ Benchmarking Average — Fiscal Years 2013 through 2016

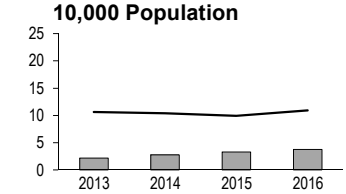
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Concord	$60	$58	$56	$56
Average	$87	$88	$91	$94

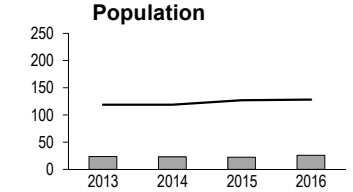
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Concord	2.1	2.8	3.3	3.8
Average	10.6	10.4	9.9	10.9

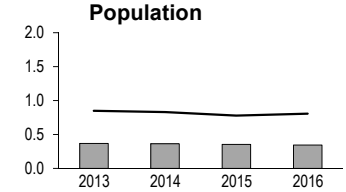
Facilities Measures

Land Acres of Parks per 10,000 Population



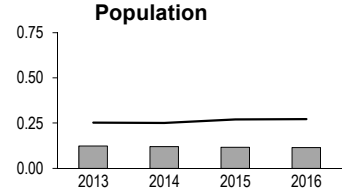
	2013	2014	2015	2016
Concord	23.31	22.80	22.23	25.94
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



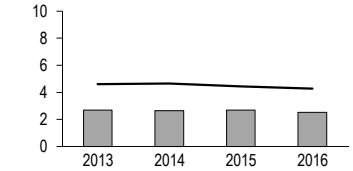
	2013	2014	2015	2016
Concord	0.37	0.36	0.35	0.34
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



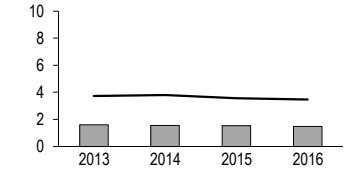
	2013	2014	2015	2016
Concord	0.12	0.12	0.12	0.11
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



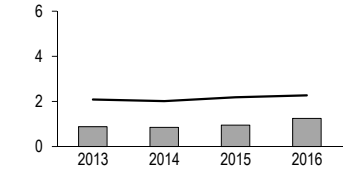
	2013	2014	2015	2016
Concord	2.70	2.64	2.69	2.52
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Concord	1.60	1.56	1.52	1.49
Average	3.73	3.79	3.57	3.46

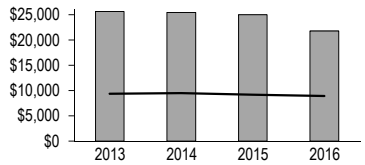
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Concord	0.87	0.85	0.95	1.24
Average	2.08	2.00	2.18	2.27

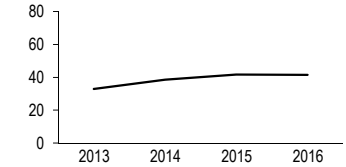
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



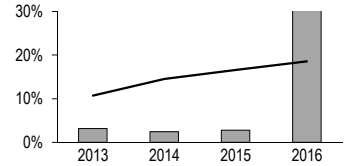
	2013	2014	2015	2016
Concord	$25,633	$25,464	$24,980	$21,782
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Concord				
Average	32.9	38.6	41.6	41.5

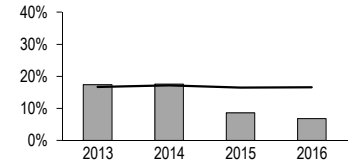
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Concord	3.2%	2.4%	2.8%	35.0%
Average	10.7%	14.5%	16.6%	18.5%

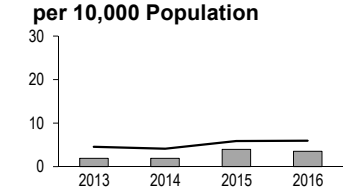
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Concord	17.4%	17.6%	8.7%	6.8%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Concord	1.96	1.92	3.98	3.56
Average	4.58	4.15	5.92	5.99

Greenville — Core Parks and Recreation

Fiscal Year 2015–16

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 agreements 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 twenty-six separate parks and sites. These parks cover 1,461 acres; about two-thirds of them are developed. The city has nearly eight miles of trails.

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-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 2015)	87,960
Land Area (Square Miles)	34.90
Persons per Square Mile	2,520
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	7.0
Maintenance Staff FTEs	38.3
Program and Facility FTEs	82.5
Other Staff FTEs	1.8
TOTAL	129.5
Number of Parks and Sites	26
Total Land Acreage in Parks	1,460.9
Miles of Trails in Parks	7.8
Recreational Facilities	
Indoor and Outdoor Pools	2
Recreation Centers	8
Outdoor Basketball Courts	1
Outdoor Tennis Courts	20
Playgrounds	17
Diamond Fields	16
Rectangular Fields	5
Other Athletic Fields	2
Picnic Shelters	23
Parks and Recreation Revenues	
User Fees	$1,170,122
Grants	$63,450
Sponsorships	$10,100
Donations	$0

Full Cost Profile

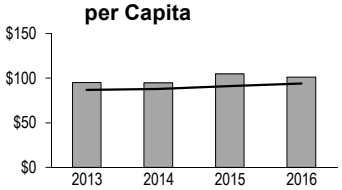
Cost Breakdown by Percentage	
Personal Services	55.6%
Operating Costs	39.4%
Capital Costs	5.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,957,053
Operating Costs	$3,515,902
Capital Costs	$446,970
TOTAL	$8,919,925

Greenville Core Parks and Recreation

Key: Greenville ■ Benchmarking Average — Fiscal Years 2013 through 2016

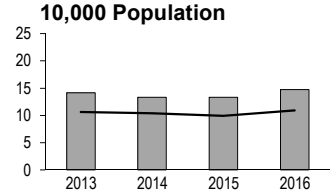
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Greenville	$95	$95	$105	$101
Average	$87	$88	$91	$94

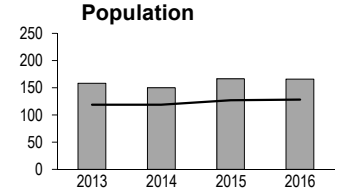
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Greenville	14.1	13.4	13.3	14.7
Average	10.6	10.4	9.9	10.9

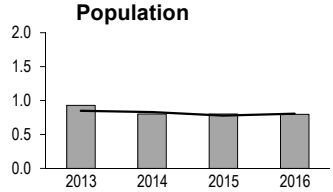
Facilities Measures

Land Acres of Parks per 10,000 Population



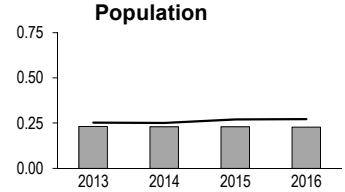
	2013	2014	2015	2016
Greenville	157.99	150.11	166.29	166.08
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



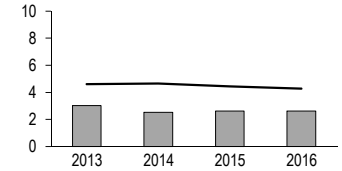
	2013	2014	2015	2016
Greenville	0.93	0.80	0.80	0.80
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



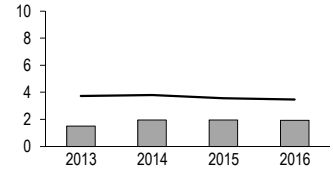
	2013	2014	2015	2016
Greenville	0.23	0.23	0.23	0.23
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



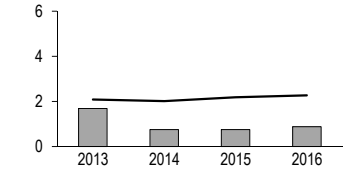
	2013	2014	2015	2016
Greenville	3.02	2.52	2.63	2.61
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Greenville	1.51	1.95	1.94	1.93
Average	3.73	3.79	3.57	3.46

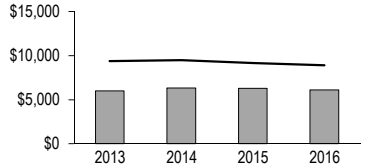
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Greenville	1.68	0.75	0.74	0.88
Average	2.08	2.00	2.18	2.27

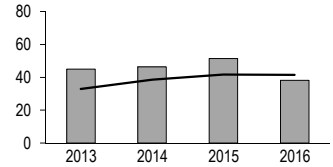
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



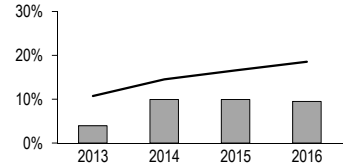
	2013	2014	2015	2016
Greenville	$6,013	$6,320	$6,307	$6,106
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Greenville	45.0	46.4	51.5	38.2
Average	32.9	38.6	41.6	41.5

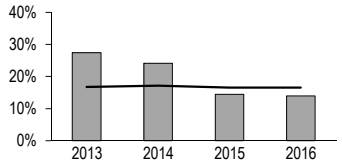
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Greenville	3.9%	9.9%	9.9%	9.5%
Average	10.7%	14.5%	16.6%	18.5%

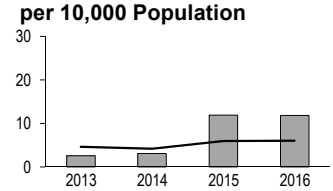
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Greenville	27.4%	24.1%	14.4%	13.9%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Greenville	2.55	3.09	11.89	11.82
Average	4.58	4.15	5.92	5.99

Hickory — Core Parks and Recreation

Fiscal Year 2015–16

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 twenty-five separate parks and sites. This includes 514 acres of park acreage; 428 of these acres are developed. The city has eleven miles of trails; about five miles 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 2015)	40,351
Land Area (Square Miles)	29.84
Persons per Square Mile	1,352
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	23.5
Other Staff FTEs	0.0
TOTAL	55.0
Number of Parks and Sites	25
Total Land Acreage in Parks	514.0
Miles of Trails in Parks	11.0
Recreational Facilities	
Indoor and Outdoor Pools	0
Recreation Centers	8
Outdoor Basketball Courts	14
Outdoor Tennis Courts	17
Playgrounds	39
Diamond Fields	13
Rectangular Fields	12
Other Athletic Fields	0
Picnic Shelters	18
Parks and Recreation Revenues	
User Fees	$203,089
Grants	$0
Sponsorships	$44,857
Donations	$39,459

Full Cost Profile

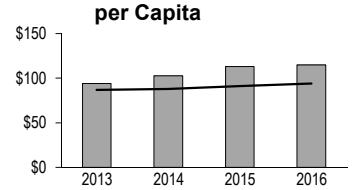
Cost Breakdown by Percentage	
Personal Services	49.3%
Operating Costs	34.7%
Capital Costs	16.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,287,019
Operating Costs	$1,607,818
Capital Costs	$741,209
TOTAL	$4,636,046

Hickory — Core Parks and Recreation

Key: Hickory ■ Benchmarking Average — Fiscal Years 2013 through 2016

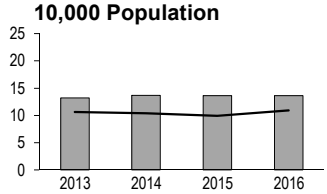
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Hickory	$94	$103	$113	$115
Average	$87	$88	$91	$94

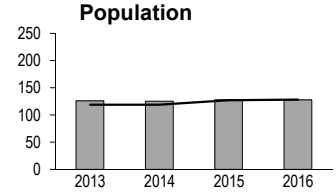
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Hickory	13.2	13.7	13.6	13.6
Average	10.6	10.4	9.9	10.9

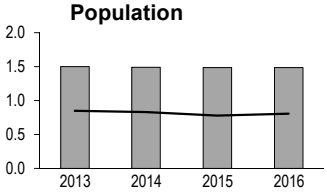
Facilities Measures

Land Acres of Parks per 10,000 Population



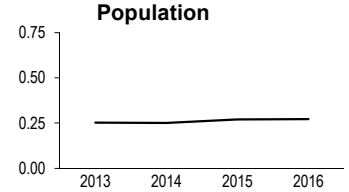
	2013	2014	2015	2016
Hickory	125.88	125.30	127.44	127.38
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



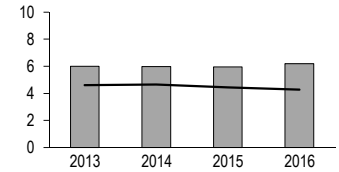
	2013	2014	2015	2016
Hickory	1.50	1.49	1.49	1.49
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



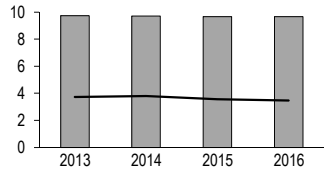
	2013	2014	2015	2016
Hickory	0.00	0.00	0.00	0.00
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



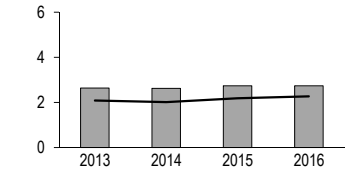
	2013	2014	2015	2016
Hickory	5.99	5.97	5.95	6.20
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Hickory	9.74	9.70	9.67	9.67
Average	3.73	3.79	3.57	3.46

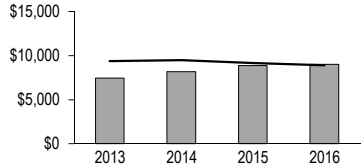
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Hickory	2.64	2.63	2.73	2.73
Average	2.08	2.00	2.18	2.27

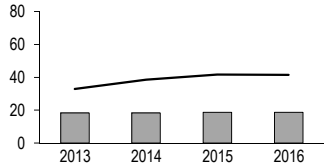
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



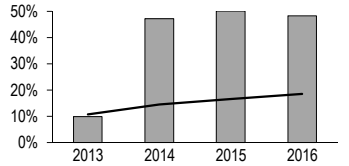
	2013	2014	2015	2016
Hickory	$7,463	$8,188	$8,875	$9,020
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Hickory	18.3	18.3	18.7	18.7
Average	32.9	38.6	41.6	41.5

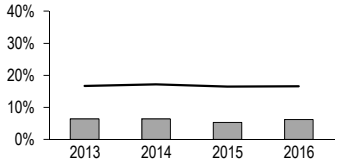
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Hickory	9.8%	47.2%	50.1%	48.3%
Average	10.7%	14.5%	16.6%	18.5%

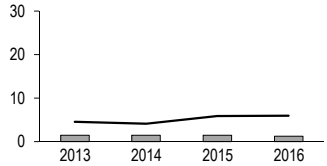
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Hickory	6.4%	6.4%	5.3%	6.2%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Hickory	1.50	1.49	1.49	1.24
Average	4.58	4.15	5.92	5.99

High Point — Core Parks and Recreation

Fiscal Year 2015–16

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 forty-six separate parks with 2,058 acres; most of this acreage is developed. Additionally, 1,569 acres of water space are part of the parks system. The city has 23.5 miles of trails; just over 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 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 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 2015)	109,749
Land Area (Square Miles)	55.05
Persons per Square Mile	1,993
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	11.8
Maintenance Staff FTEs	60.5
Program and Facility FTEs	59.7
Other Staff FTEs	5.0
TOTAL	137.0
Number of Parks and Sites	46
Total Land Acreage in Parks	2,058
Miles of Trails in Parks	23.5
Recreational Facilities	
Indoor and Outdoor Pools	3
Recreation Centers	7
Outdoor Basketball Courts	15
Outdoor Tennis Courts	27
Playgrounds	34
Diamond Fields	23
Rectangular Fields	28
Other Athletic Fields	3
Picnic Shelters	34
Parks and Recreation Revenues	
User Fees	$1,530,398
Grants	$13,000
Sponsorships	$8,050
Donations	$39,329

Full Cost Profile

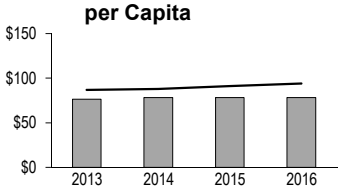
Cost Breakdown by Percentage	
Personal Services	55.9%
Operating Costs	35.5%
Capital Costs	8.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$4,805,410
Operating Costs	$3,057,062
Capital Costs	$738,824
TOTAL	$8,601,296

High Point — Core Parks and Recreation

Key: High Point ■ Benchmarking Average — Fiscal Years 2013 through 2016

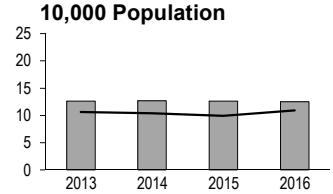
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
High Point	$76	$78	$78	$78
Average	$87	$88	$91	$94

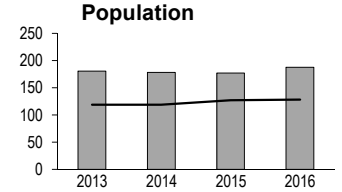
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
High Point	12.6	12.7	12.6	12.5
Average	10.6	10.4	9.9	10.9

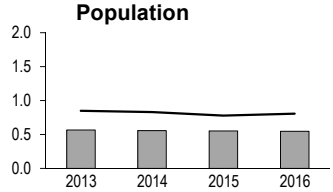
Facilities Measures

Land Acres of Parks per 10,000 Population



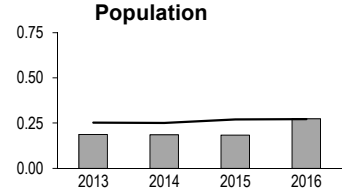
	2013	2014	2015	2016
High Point	180.35	178.54	177.05	187.52
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



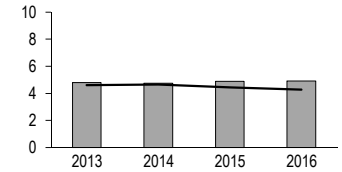
	2013	2014	2015	2016
High Point	0.56	0.56	0.55	0.55
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



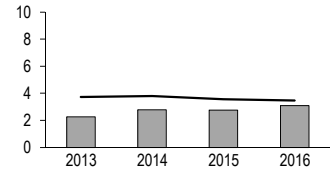
	2013	2014	2015	2016
High Point	0.19	0.19	0.18	0.27
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



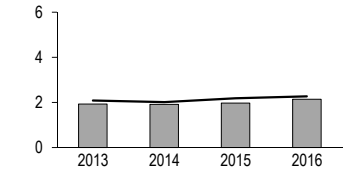
	2013	2014	2015	2016
High Point	4.79	4.74	4.88	4.92
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
High Point	2.26	2.79	2.76	3.10
Average	3.73	3.79	3.57	3.46

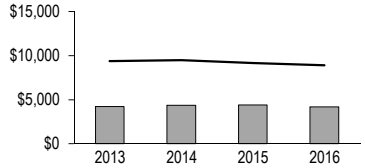
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
High Point	1.93	1.90	1.97	2.14
Average	2.08	2.00	2.18	2.27

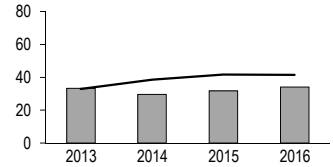
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



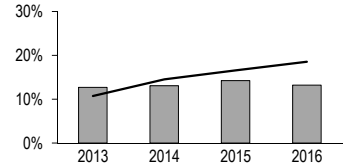
	2013	2014	2015	2016
High Point	$4,235	$4,375	$4,414	$4,179
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
High Point	33.4	29.5	31.8	34.0
Average	32.9	38.6	41.6	41.5

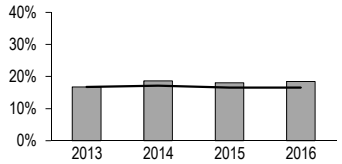
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
High Point	12.7%	13.0%	14.2%	13.2%
Average	10.7%	14.5%	16.6%	18.5%

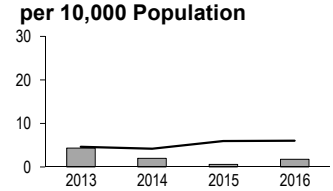
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
High Point	16.8%	18.6%	18.1%	18.5%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
High Point	4.32	1.95	0.55	1.73
Average	4.58	4.15	5.92	5.99

Raleigh — Core Parks and Recreation

Fiscal Year 2015–16

Explanatory Information

Service Level and Delivery

The City of Raleigh Parks, Recreation, and Cultural Resources Department is a stand-alone unit within the city. The department is comprised of six divisions: Business Process Management; Design and Development; Parks; Recreation; Resources; and Strategic Planning, Communication, and Analytics.

The department has a public/private partnership with the Dix Park Conservancy to provide funding for master planning and programming at Dorothea Dix Park. The city also has joint use agreements and memorandums of understanding with other entities, including Wake County, Wake County Public School System, NC State University, and local non-profit organizations.

Raleigh has a full array of recreational facilities available. The city has 220 parks and sites covering over six thousands acres and 116.7 miles of trails in parks.

In addition to traditional recreational facilities, Raleigh has a large outdoor performance event site, historic properties, a performing arts center, boats ramps, and city museums. 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

Raleigh rejoined the Benchmarking Project in July 2016 with the first year of data showing for FY 2015–16.

Parks and Recreation is a new service area for the benchmarking project beginning with the FY 2012–13 reporting year.

Municipal Profile

Population (OSBM 2015)	440,746
Land Area (Square Miles)	145.16
Persons per Square Mile	3,036
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	9.9
Maintenance Staff FTEs	190.0
Program and Facility FTEs	512.0
Other Staff FTEs	0.0
TOTAL	711.9
Number of Parks and Sites	220
Total Land Acreage in Parks	6039.7
Miles of Trails in Parks	116.7
Recreational Facilities	
Indoor and Outdoor Pools	9
Recreation Centers	41
Outdoor Basketball Courts	54
Outdoor Tennis Courts	112
Playgrounds	96
Diamond Fields	62
Rectangular Fields	3
Other Athletic Fields	48
Picnic Shelters	88
Parks and Recreation Revenues	
User Fees	$9,852,005
Grants	$265,681
Sponsorships	$0
Donations	$86,995

Full Cost Profile

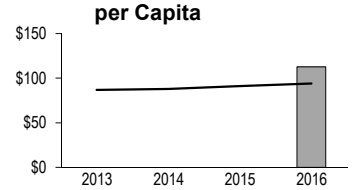
Cost Breakdown by Percentage	
Personal Services	56.9%
Operating Costs	36.5%
Capital Costs	6.6%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$28,304,931
Operating Costs	$18,160,322
Capital Costs	$3,299,294
TOTAL	$49,764,547

Raleigh — Core Parks and Recreation

Key: Raleigh ■ Benchmarking Average — Fiscal Years 2013 through 2016

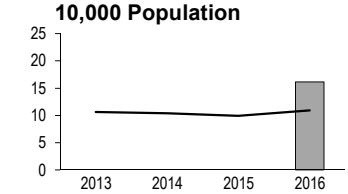
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Raleigh				$113
Average	$87	$88	$91	$94

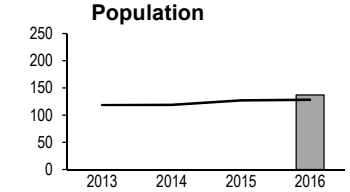
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Raleigh				16.2
Average	10.6	10.4	9.9	10.9

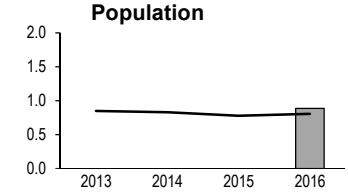
Facilities Measures

Land Acres of Parks per 10,000 Population



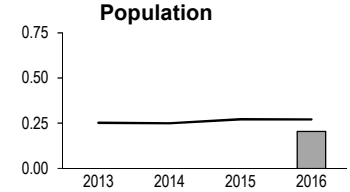
	2013	2014	2015	2016
Raleigh				137.03
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



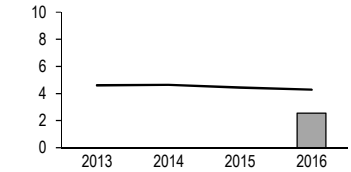
	2013	2014	2015	2016
Raleigh				0.88
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



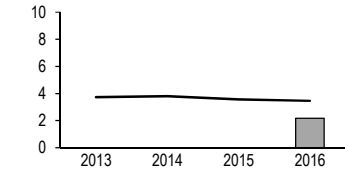
	2013	2014	2015	2016
Raleigh				0.20
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



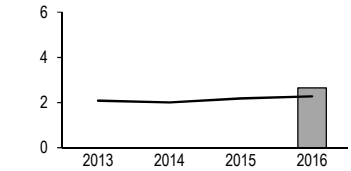
	2013	2014	2015	2016
Raleigh				2.56
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Raleigh				2.18
Average	3.73	3.79	3.57	3.46

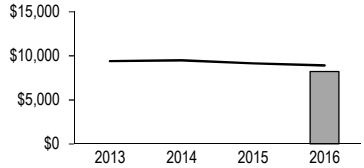
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Raleigh				2.65
Average	2.08	2.00	2.18	2.27

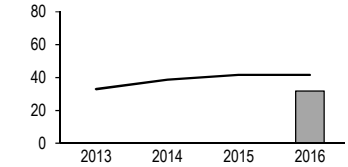
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



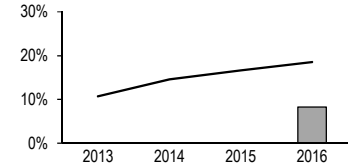
	2013	2014	2015	2016
Raleigh				$8,240
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Raleigh				31.8
Average	32.9	38.6	41.6	41.5

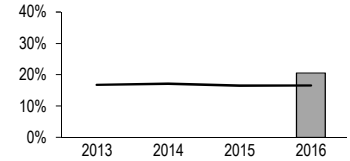
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Raleigh				8.3%
Average	10.7%	14.5%	16.6%	18.5%

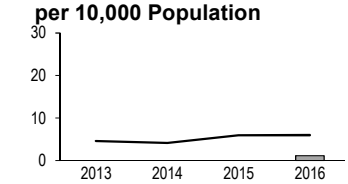
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Raleigh				20.5%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Raleigh				1.09
Average	4.58	4.15	5.92	5.99

Salisbury — Core Parks and Recreation

Fiscal Year 2015–16

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 508 acres of parks; more than half are developed. The city has 16.9 miles of trails.

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 2015)	34,285
Land Area (Square Miles)	22.22
Persons per Square Mile	1,543
Topography	Flat; gently rolling
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	3.0
Maintenance Staff FTEs	8.0
Program and Facility FTEs	9.0
Other Staff FTEs	0.0
TOTAL	20.0
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	4
Outdoor Basketball Courts	12
Outdoor Tennis Courts	10
Playgrounds	18
Diamond Fields	8
Rectangular Fields	4
Other Athletic Fields	0
Picnic Shelters	14
Parks and Recreation Revenues	
User Fees	NA
Grants	NA
Sponsorships	NA
Donations	NA

Full Cost Profile

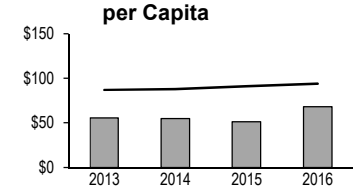
Cost Breakdown by Percentage	
Personal Services	66.2%
Operating Costs	29.7%
Capital Costs	4.1%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$1,550,316
Operating Costs	$694,278
Capital Costs	$96,892
TOTAL	$2,341,486

Salisbury — Core Parks and Recreation

Key: Salisbury ■ Benchmarking Average — Fiscal Years 2013 through 2016

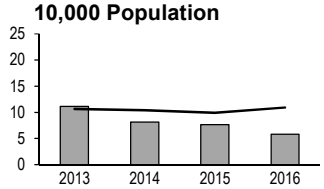
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Salisbury	$56	$55	$51	$68
Average	$87	$88	$91	$94

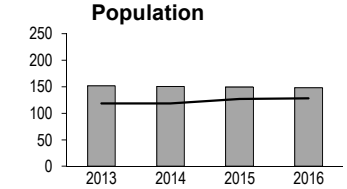
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Salisbury	11.1	8.2	7.7	5.8
Average	10.6	10.4	9.9	10.9

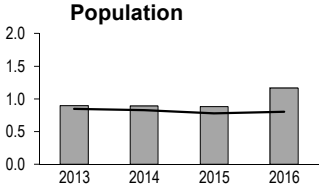
Facilities Measures

Land Acres of Parks per 10,000 Population



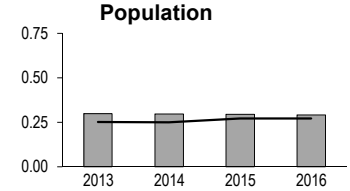
	2013	2014	2015	2016
Salisbury	151.90	150.63	149.61	148.17
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



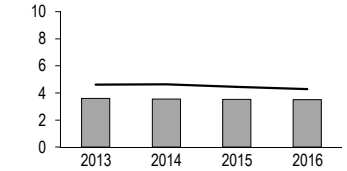
	2013	2014	2015	2016
Salisbury	0.90	0.89	0.88	1.17
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



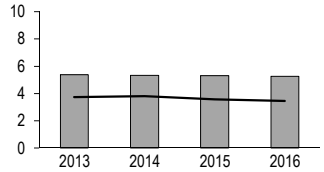
	2013	2014	2015	2016
Salisbury	0.30	0.30	0.29	0.29
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



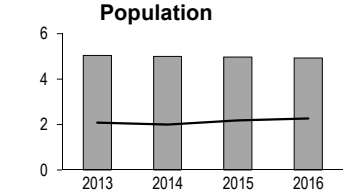
	2013	2014	2015	2016
Salisbury	3.59	3.56	3.53	3.50
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Salisbury	5.38	5.34	5.30	5.25
Average	3.73	3.79	3.57	3.46

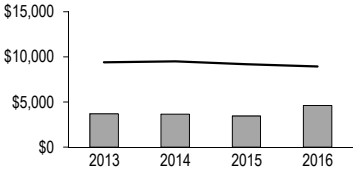
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Salisbury	5.05	5.01	4.98	4.93
Average	2.08	2.00	2.18	2.27

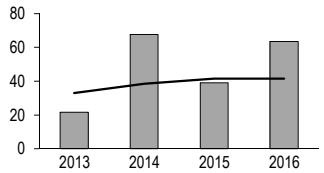
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



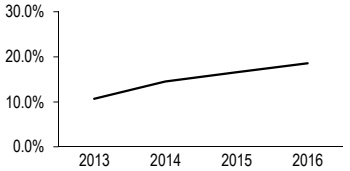
	2013	2014	2015	2016
Salisbury	$3,662	$3,646	$3,418	$4,609
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Salisbury	21.6	67.7	39.1	63.5
Average	32.9	38.6	41.6	41.5

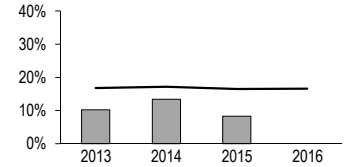
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Salisbury				
Average	10.7%	14.5%	16.6%	18.5%

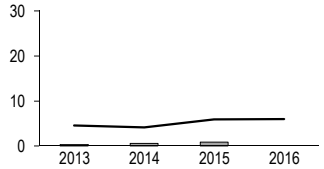
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Salisbury	10.3%	13.4%	8.2%	
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Salisbury	0.30	0.59	0.88	
Average	4.58	4.15	5.92	5.99

Wilson — Core Parks and Recreation

Fiscal Year 2015–16

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, most currently undeveloped. The city has fourteen miles of trails.

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 2015)	49,361
Land Area (Square Miles)	30.52
Persons per Square Mile	1,617
Topography	Flat
Climate	Temperate; little ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	4.0
Maintenance Staff FTEs	14.0
Program and Facility FTEs	49.0
Other Staff FTEs	4.0
TOTAL	71.0
Number of Parks and Sites	28
Total Land Acreage in Parks	400.0
Miles of Trails in Parks	14.5
Recreational Facilities	
Indoor and Outdoor Pools	2
Recreation Centers	4
Outdoor Basketball Courts	7
Outdoor Tennis Courts	16
Playgrounds	25
Diamond Fields	11
Rectangular Fields	14
Other Athletic Fields	1
Picnic Shelters	17
Parks and Recreation Revenues	
User Fees	$507,201
Grants	$0
Sponsorships	$25,970
Donations	$0

Full Cost Profile

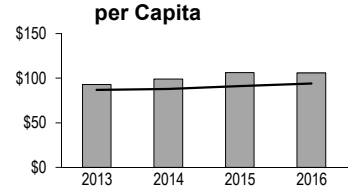
Cost Breakdown by Percentage	
Personal Services	55.5%
Operating Costs	35.8%
Capital Costs	8.7%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$2,901,724
Operating Costs	$1,874,402
Capital Costs	$455,329
TOTAL	$5,231,455

Wilson — Core Parks and Recreation

Key: Wilson ■ Benchmarking Average — Fiscal Years 2013 through 2016

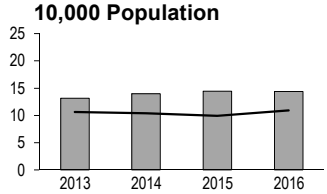
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Wilson	$93	$99	$106	$106
Average	$87	$88	$91	$94

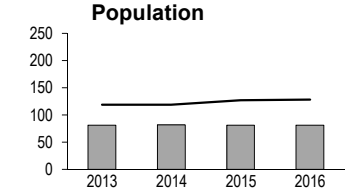
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Wilson	13.1	14.0	14.4	14.4
Average	10.6	10.4	9.9	10.9

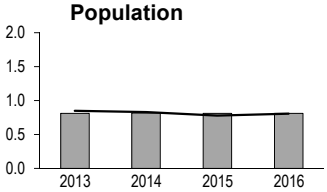
Facilities Measures

Land Acres of Parks per 10,000 Population



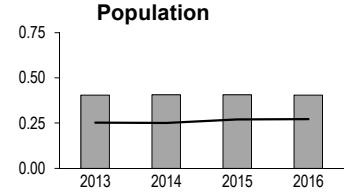
	2013	2014	2015	2016
Wilson	80.91	81.47	81.26	81.04
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



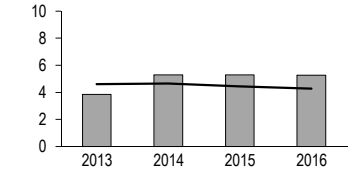
	2013	2014	2015	2016
Wilson	0.81	0.81	0.81	0.81
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



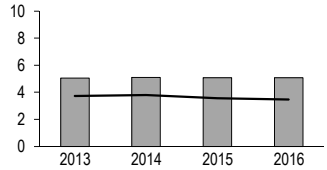
	2013	2014	2015	2016
Wilson	0.40	0.41	0.41	0.41
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



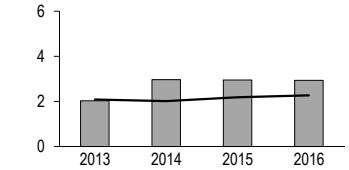
	2013	2014	2015	2016
Wilson	3.84	5.30	5.28	5.27
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Wilson	5.06	5.09	5.08	5.06
Average	3.73	3.79	3.57	3.46

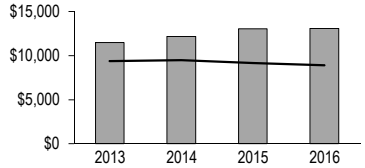
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Wilson	2.02	2.95	2.95	2.94
Average	2.08	2.00	2.18	2.27

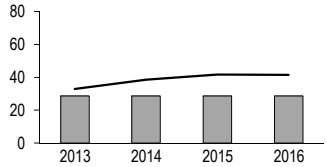
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



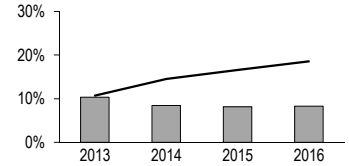
	2013	2014	2015	2016
Wilson	$11,508	$12,184	$13,062	$13,079
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Wilson	28.6	28.6	28.6	28.6
Average	32.9	38.6	41.6	41.5

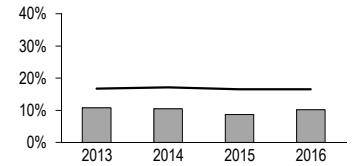
Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



	2013	2014	2015	2016
Wilson	10.4%	8.4%	8.1%	8.3%
Average	10.7%	14.5%	16.6%	18.5%

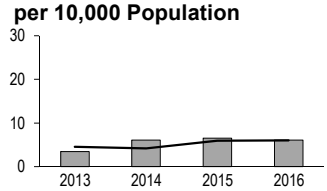
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Wilson	10.8%	10.5%	8.7%	10.2%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Wilson	3.44	6.11	6.50	6.08
Average	4.58	4.15	5.92	5.99

Winston-Salem — Core Parks and Recreation

Fiscal Year 2015–16

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-nine separate parks and sites. This includes 3,683 acres of park land, most of which is 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 2015)	238,899
Land Area (Square Miles)	132.45
Persons per Square Mile	1,804
Topography	Gently rolling
Climate	Temperate; some ice and snow

Service Profile

Parks and Recreation Staff	
Administrative Position FTEs	25.0
Maintenance Staff FTEs	72.0
Program and Facility FTEs	100.6
Other Staff FTEs	2.0
TOTAL	199.6
Number of Parks and Sites	79
Total Land Acreage in Parks	3,688.0
Miles of Trails in Parks	23.3
Recreational Facilities	
Indoor and Outdoor Pools	8
Recreation Centers	17
Outdoor Basketball Courts	23
Outdoor Tennis Courts	109
Playgrounds	44
Diamond Fields	47
Rectangular Fields	50
Other Athletic Fields	0
Picnic Shelters	51
Parks and Recreation Revenues	
User Fees	$898,898
Grants	$311
Sponsorships	$1,270
Donations	$76,492

Full Cost Profile

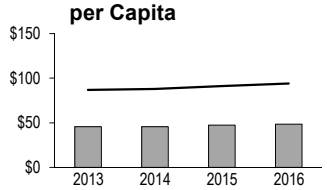
Cost Breakdown by Percentage	
Personal Services	55.4%
Operating Costs	32.6%
Capital Costs	12.0%
TOTAL	100.0%
Cost Breakdown in Dollars	
Personal Services	$6,432,960
Operating Costs	$3,785,653
Capital Costs	$1,387,909
TOTAL	$11,606,522

Winston-Salem Core Parks and Recreation

Key: Winston-Salem ■ Benchmarking Average — Fiscal Years 2013 through 2016

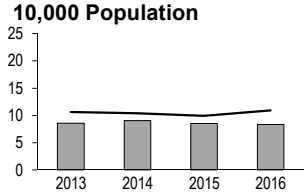
Resource Measures

Core Parks and Recreation Services per Capita



	2013	2014	2015	2016
Winston-Salem	$46	$46	$47	$49
Average	$87	$88	$91	$94

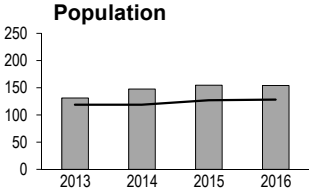
Core Parks and Recreation Staff per 10,000 Population



	2013	2014	2015	2016
Winston-Salem	8.6	9.0	8.5	8.4
Average	10.6	10.4	9.9	10.9

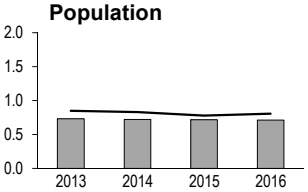
Facilities Measures

Land Acres of Parks per 10,000 Population



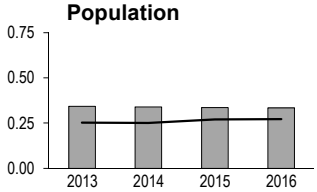
	2013	2014	2015	2016
Winston-Salem	131.07	147.71	154.81	154.37
Average	118.56	118.64	126.99	128.22

Recreation Centers per 10,000 Population



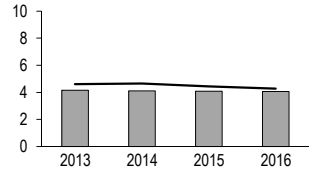
	2013	2014	2015	2016
Winston-Salem	0.73	0.72	0.71	0.71
Average	0.85	0.83	0.78	0.81

Swimming Pools per 10,000 Population



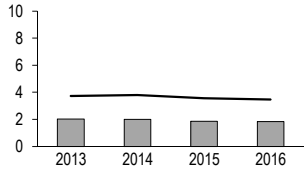
	2013	2014	2015	2016
Winston-Salem	0.34	0.34	0.34	0.33
Average	0.25	0.25	0.27	0.27

Athletic Fields per 10,000 Population



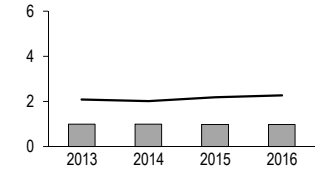
	2013	2014	2015	2016
Winston-Salem	4.16	4.12	4.08	4.06
Average	4.61	4.64	4.45	4.28

Playgrounds per 10,000 Population



	2013	2014	2015	2016
Winston-Salem	2.02	2.00	1.85	1.84
Average	3.73	3.79	3.57	3.46

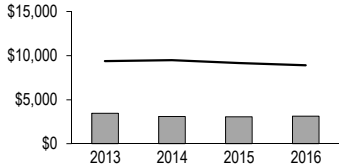
Miles of Land Trails per 10,000 Population



	2013	2014	2015	2016
Winston-Salem	1.00	0.99	0.98	0.97
Average	2.08	2.00	2.18	2.27

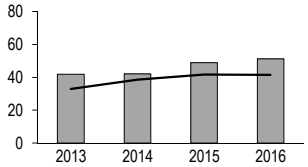
Efficiency Measures

Total Core Parks and Recreation Costs per Acre



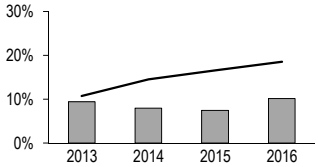
	2013	2014	2015	2016
Winston-Salem	$3,478	$3,094	$3,060	$3,147
Average	$9,380	$9,493	$9,159	$8,920

Acres of Park Maintained per Maintenance FTE



	2013	2014	2015	2016
Winston-Salem	42.0	42.0	48.9	51.2
Average	32.9	38.6	41.6	41.5

Volunteer Hours in FTEs as a Percent of Paid Staff FTEs



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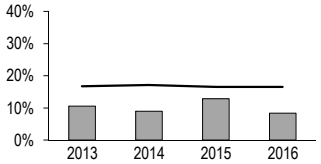
Winston-Salem	9.4%	7.9%	7.4%	10.1%
Average	10.7%	14.5%	16.6%	18.5%

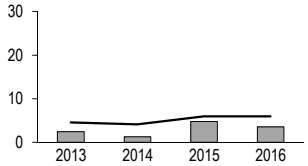
Effectiveness Measures

Revenue Gained as a Percent of Total Core Costs



	2013	2014	2015	2016
Winston-Salem	10.6%	9.0%	12.9%	8.4%
Average	16.7%	17.2%	16.5%	16.6%

Acts of Vandalism at Parks Facilities per 10,000 Population



	2013	2014	2015	2016
Winston-Salem	2.44	1.23	4.79	3.56
Average	4.58	4.15	5.92	5.99

Final Report on City Services for Fiscal Year 2015–2016: Performance and Cost Data presents information on 15 North Carolina cities through fiscal year-end June 30, 2016. Service areas include 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, and core parks and recreation.

The report is part of the North Carolina Benchmarking Project, a joint undertaking of the UNC School of Government and the North Carolina Local Government Budget Association. For more information, visit **sog.unc.edu/resources/microsites/north-carolina-benchmarking-project**.

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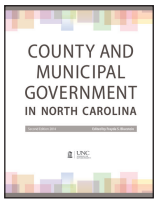

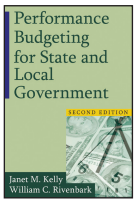

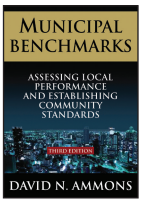

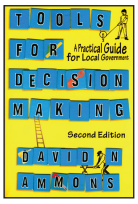

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ABOUT THE AUTHOR

Dale J. Roenigk is a lecturer at the UNC School of Government and serves as director of the North Carolina Benchmarking Project.

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