

NORTH CAROLINA LOCAL GOVERNMENT PERFORMANCE MEASUREMENT PROJECT

Benchmarking for Results

DECEMBER 2005

COSPONSORED BY:

THE CITIES OF ASHEVILLE, CARRBORO, CARY,
CHARLOTTE, CONCORD, DURHAM, GASTONIA,
GREENSBORO, HICKORY, HIGH POINT, MATTHEWS,
RALEIGH, SALISBURY, WILMINGTON, WILSON, AND
WINSTON-SALEM

INSTITUTE OF GOVERNMENT

THE NORTH CAROLINA LOCAL GOVERNMENT BUDGET ASSOCIATION

Institute of Government

Master of Public Administration Program

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THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

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Preface

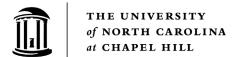
The North Carolina Benchmarking Project is a regional benchmarking initiative that compares performance statistics and cost data across the following ten service areas: residential refuse collection, household recycling, yard waste/leaf collection, police services, emergency communications, asphalt maintenance and repair, fire services, building inspections, fleet maintenance, and human resources. Participating municipalities endure the challenges of data collecting and data cleaning because they believe that performance measurement and benchmarking are catalysts to service improvement.

The steering committee of the benchmarking project decided to forgo the addition of a new service area for study in 2005, opting instead to have project staff members at the School of Government gather information from each participating municipality on how the benchmarking data are actually being used for improving service efficiency and effectiveness. This report, along with the supporting case studies on data use, contains the program and organizational findings that were obtained from the review of the benchmarking experiences from the fifteen municipalities that participated in the *Final Report on City Services for FY 2003–2004*. They included Asheville, Cary, Charlotte, Concord, Durham, Gastonia, Greensboro, Hickory, High Point, Matthews, Raleigh, Salisbury, Wilmington, Wilson, and Winston-Salem.

The benchmarking project is a collaborative effort between the School of Government and the participating municipalities. Special thanks are owed to the members of the steering committee who were instrumental in collecting the information needed for this report and to the following individuals who wrote the supporting case studies for their respective municipalities: Ben Rowe, deputy budget and evaluation director of Winston-Salem; Kathy Mann, budget analyst of Wilmington; Randy J. Harrington, budget and performance manager of Concord; Tony McDowell, interim budget manager of Asheville; Stephen Carter, budget and management analyst of Greensboro; and Karen Hurley, budget analyst of Hickory.

This document contains evidence that the participating municipalities in the benchmarking project have used the comparative statistics at the program level to support a variety of service delivery decisions. It has been designed so that additional case studies on data use can be added as municipalities continue to use the benchmarking information for service improvement. The steering committee members understand that the long-term success of the benchmarking project hinges on documenting the success stories of using comparative information.

William C. Rivenbark David N. Ammons Dale J. Roenigk



Introduction

At one time performance measurement was thought to be innovative, but today it is accepted as a professional norm in local government for demonstrating operational accountability of service delivery and for creating an environment for productivity improvement. Although adoption of performance measurement systems is common, full implementation of these systems is rare. Adoption refers to the creation of measures for tracking service performance. Implementation, on the other hand, represents the actual use of these measures for converting information into action. This distinction is critical. Given the expense of adoption, an adequate return on investment hinges on effective implementation.

When an organization engages in benchmarking—the comparison of its performance against relevant performance standards or the performance of other organizations—the investment is greater and so is the desire for an adequate return. ³ Benchmarking consumes more organizational resources than internal performance measurement given the difficulty of ensuring data accuracy, reliability, and comparability across multiple organizations. Operational improvement based on lessons learned from benchmarking is where an organization hopes to gain its return on investment.

The North Carolina Benchmarking Project is a regional benchmarking initiative that compares performance statistics and cost data for participating municipalities across the following ten service areas.⁴

- Residential refuse collection
- Yard waste/leaf collection
- Emergency communications
- Fire services
- Fleet maintenance

- Household recycling
- Police services
- Asphalt maintenance and repair
- Building inspections
- Human resources

The benchmarking project is managed by the School of Government under the guidance of a steering committee comprised of representatives from each participating municipality.

This report contains the results from research conducted during spring and summer 2005 on how municipalities are using the comparative performance statistics for converting information into action. It begins with a brief overview of the benchmarking project and the methodology used to gather the information from the fifteen municipalities that participated in the benchmarking project during FY 2004–2005. The findings are then presented on how the comparative statistics are being used at the program and organizational levels.

Overview of the North Carolina Benchmarking Project

The impetus for the benchmarking project came from two groups: city managers and budget officials. The North Carolina League of Municipalities held a meeting in 1994 with city managers from the larger municipalities in the state to discuss the topics of privatization, competition, performance measurement, and benchmarking.⁵ Subsequently, local budget officials who were affiliated with the North Carolina Local Government Budget Association held a meeting in 1995 to discuss the possibility of creating a benchmarking project. They had a desire to move beyond internal performance comparisons over time. They wanted to place service performance from their own organizations within the context of other organizations, with the belief that even outstanding performers can learn from the practices of others. The pilot phase of the

benchmarking project started in fall 1995 after the Institute of Government hired a project coordinator.

The following three goals guide the benchmarking project: (1) develop and expand the use of performance measurement in local government, (2) produce reliable performance and cost data for comparison, and (3) facilitate the use of performance and cost data for service improvement. Nine municipal performance and cost data reports had been produced by 2005 in response to the second goal. However, the participating municipalities do not endure the challenges of data collection and data cleaning simply to produce a report. They participate in the benchmarking project to enhance their own internal performance measurement systems and to use the comparative performance and cost data for service improvement.

Methodology

The findings contained in this report were derived from a review of the benchmarking experiences of the fifteen municipalities that participated in the benchmarking project in 2005, which included Asheville, Cary, Charlotte, Concord, Durham, Gastonia, Greensboro, Hickory, High Point, Matthews, Raleigh, Salisbury, Wilmington, Wilson, and Winston-Salem. Municipal representatives were queried by an e-mail survey, followed by in-person interviews and subsequent telephone and e-mail contact in 2005.

Program Findings

This section focuses on how the benchmarking data are being used to improve the efficiency and effectiveness of service delivery. Survey questions asked for specific examples of how the benchmarking data have supported operational change within the service areas under study. While some of the following examples contain specific outcomes, others are more recent initiatives with promising but unconfirmed results.

Residential Refuse Collection

Benchmarking data have been used most frequently by participating municipalities in the service area of residential refuse collection. The comparative statistics were used in Hickory, for example, to justify automated collection with one-person crews. The city lowered its cost per ton collected from \$98 in FY 1995–1996 to \$69 in FY 2003–2004—a savings of \$29 per ton collected.

Concord used the benchmarking data for negotiating more favorable terms with its private hauler. The city was paying \$7.07 per collection point when its refuse collection contract expired. The private hauler's proposal for a new contract called for payment of \$7.76 per collection point. The city countered using data from the benchmarking project that showed Concord's service costs were relatively high and the contractor's service quality was relatively low when compared to other municipalities. The parties agreed to continue the service at a rate of \$7.07 per collection point, subject to consumer price index and fuel price adjustments.

One of the major success stories of the benchmarking project is found in this service area. Winston-Salem used a private hauler to provide residential refuse service to approximately 6,500 households. After the benchmarking data revealed underutilized capacity within its own operations, the contract with the private hauler was discontinued and service by city crews was extended into the affected neighborhoods without adding staff or equipment. This move improved efficiency and produced annual savings of approximately \$395,000.6

Household Recycling

Comparative statistics for household recycling helped municipal officials monitor the effects of service expansion in Asheville. Program changes yielded an increase in the waste diversion rate from 14 percent in FY 1998–1999 to 24 percent in FY 2003–2004. The principal impact of program success is the extended life of the Buncombe County landfill.

Benchmarking data assisted Wilmington officials with a decision to privatize the household recycling program, producing an annual savings of approximately \$75,000.⁷ This change in service delivery decreased the cost per ton collected from \$308 in FY 1994–1995 to \$234 in FY 2000–2001. Further expansion of the program since 2001 decreased the cost per ton collected to \$128 by FY 2003–2004.

Benchmarking data also have been used to assess the possibility of altering truck and crew configurations in Concord and to evaluate the cost per collection point for contract negotiations in Hickory.

Yard Waste/Leaf Collection

Comparative statistics for yard waste/leaf collection supported the use of seasonal labor in Hickory and justified a recommendation for a leaf machine in High Point. The program change in Hickory helped reduce the cost per collection point from \$51 in FY 2001–2002 to \$30 in FY 2003–2004. Analysis in High Point showed that the new equipment would reduce the cost per ton collected.

Police Services

Greensboro used the benchmarking results in a management study of police patrol staffing. The study found that Greensboro was below average in the number of sworn officers per 1,000 residents and had a slower than average response time for high priority calls when compared to the cities of Durham, Raleigh, and Winston-Salem. A workload analysis indicated a patrol availability factor of only 6.6 percent, signaling little ability to engage in proactive patrol. In response to the management study, Greensboro approved an additional thirty-two sworn officers for its police department.

Other examples of data use in police services included the analysis of a proposal to add a patrol beat in Cary, gauging the efforts of community policing in Concord, and investing in a telephone response unit to reduce calls per officer in Wilmington.

Emergency Communications

Asheville eliminated three dispatcher positions in emergency communications based on an analysis of the benchmarking results, which allowed the reallocation of approximately \$105,000 to other programs. The benchmarking project's comparative statistics also have been used to identify the need for an additional supervisory position in emergency communications in Cary and to make changes for an ISO rating improvement in Concord.

Asphalt Maintenance and Repair

Among the high profile budgetary decisions confronting most municipal officials annually is the amount of resources that should be appropriated to asphalt maintenance and repair. Typically, administrators urge adherence to the adopted resurfacing cycle policy, which usually calls for the municipality to resurface a specified number of lane miles on an annual basis. Depending on revenue projections, however, this capital investment is sometimes deferred in favor of other programs. Several jurisdictions have solidified their ongoing commitment to a systematic street resurfacing program with the support of the benchmarking results.

Two municipalities have used the comparative statistics to analyze the cost-effectiveness of using in-house crews versus contract crews for resurfacing projects. Asheville made the decision to use contract crews for additional projects, while Concord increased in-house capacity.

Hickory used the comparative statistics to justify a new automated patch truck for pothole repair. The city reported 85 percent of potholes repaired within twenty-four hours in FY 1997–1998, which was well below the average of 96 percent. After the capital investment, the city reported 97 percent of potholes repaired within twenty-four hours in FY 2001–2002, which was slightly above the average of 95 percent.

Fire Services

Cary, Charlotte, and Concord have used the comparative statistics to analyze the workload of fire inspections. Cary established a staffing plan for determining when to add new fire inspectors in response to its workload analysis. High Point, on the other hand, used the comparative statistics to analyze and approve the request for twelve new firefighters in response to a merger with two volunteer stations.

The most notable use of comparative fire service statistics occurred in Hickory. The city's high cost per response suggested an underutilization of personnel and equipment and prompted the decision to begin responding to emergency medical calls. This increase in workload allowed the fire department to spread its fixed costs across more calls for service, which substantially lowered its cost per response from \$3,246 in FY 1998–1999 to \$1,832 in FY 2003–2004. The workload change has resulted in minimal impact on the effectiveness measure of average response time to high priority calls, which increased slightly from 4.0 minutes to 4.4 minutes during this same time period.

Fleet Maintenance

The benchmarking data prompted a staffing analysis in Concord, which resulted in the reorganization of fleet maintenance, the reduction of a full-time equivalent position, and the establishment of productivity goals. Asheville and Hickory also have used the benchmarking results to establish productivity goals regarding billable hours, parts turnover, and percentage of rolling stock available per day.

Organizational Findings

This section focuses on how the participating municipalities are using benchmarking as a management tool. These findings represent patterns of use that extend across programs. They include the importance of management integration, the impact of higher order measures, the use of efficiency measures, the selection of benchmarking partners, the refinement of measures, and the overall organizational impact from participating in the benchmarking project.

Management Integration

Only a few of the participating municipalities in 2005 had developed a systematic process for integrating the comparative statistics into the management functions of planning, budgeting, and evaluation. Those municipalities that had advanced the furthest in integrating benchmark statistics into fundamental management systems tended also to be the ones that had actually used the benchmarking information to achieve the most significant operational improvements at the program level.

- Wilmington has integrated the benchmarking data into its strategic planning process. Several of its organizational objectives are tied to statistics from the benchmarking project, including Part I crimes and response time to high priority calls.
- Concord uses the benchmarking results in support of performance budgeting. Program managers use the comparative statistics to help establish their service objectives for the coming fiscal year. Work plans are then formulated that include strategies for closing performance gaps.
- Winton-Salem uses the benchmarking results in support of zero-based budgeting. The budget department selects several programs each year to analyze from a zero-based perspective where all resources are justified as part of the annual budget process. The performance and cost data from the benchmarking project are used for analyzing the program's resources from a comparative perspective. When a program is not part of the benchmarking project, budget staff members must independently collect comparative data.
- Hickory uses the benchmarking results in conjunction with its total quality management program. Once a process is selected for study, an improvement team is

formed to analyze the components of the process, to identify strategies for process improvement, and to monitor the results. The comparative statistics are used with the analysis when the selected process is part of a service area in the benchmarking project.

Higher Order Measures

The benchmarking project reports on three types of performance measures for each service area under study: workload measures, efficiency measures, and effectiveness measures. While workload measures are important for providing information on service demand, they simply report on how much. Efficiency and effectiveness measures are considered higher order measures as they report on the relationship between inputs and outputs and on the quality or impact of service, respectively. Municipalities that relied less on workload measures and more on the higher order measures of efficiency and effectiveness were more likely to use the comparative statistics for making management decisions at the program level.

There is a broader implication from this finding. Research has shown that workload measures are more commonly tracked in local government than efficiency and effectiveness measures. Research also has shown that public organizations have struggled with moving from adoption to implementation of performance measurement. This review suggests that over-reliance on workload measures may restrict the use of higher-order measures and limit the use of performance data for making management decisions.

Service Efficiency

A majority of the participating municipalities reported heavy reliance on efficiency measures. One reason for this is the emphasis placed on cost accounting by the project. The total cost of each service area is calculated as a step toward determining resources consumed per service output. Several of the respondents also reported that the benchmarking project afforded them the ability to calculate accurate and reliable efficiency measures for the first time and that elected officials tend to focus on service efficiency because of their concern about increasing tax rates.

Benchmarking Partners

Most of the participating municipalities reported that they primarily compare their performance statistics with the statistics of specific benchmarking partners. The primary reason for this practice was the perception that municipalities of similar size are more comparable. Several respondents also reported that elected officials were only interested in municipalities of similar size.

There are two questions that arise from the practice of selecting benchmarking partners based on population. First, is this a sound practice from the perspective of seeking strategies for service improvement? Concord, which reported systematic comparison across all jurisdictions, provided the most examples of data use at the program level. Second, do economies of scale drive performance in local government? One source suggested that economies of scale are more applicable to capital-intensive services like water and sewer as opposed to labor-intensive services like police and fire protection. ¹² Therefore, service efficiency may not necessarily improve as the size of a labor-intensive program increases.

Refinement of Measures

The benchmarking project has been instrumental in helping participating municipalities improve the quality of their performance measures. A service review, for example, revealed that municipalities were having trouble with calculating accurate and reliable household participation rates. As a result, a new methodology was adopted to establish the effectiveness measure of set-out rate. Several municipalities reported that the new measure has improved their ability to accurately track the success of their recycling programs.

Organizational Impact

The municipalities were asked to identify the overall organizational impact from participating in the benchmarking project. Listed below are the most notable responses:

- Reporting on the performance of service delivery within the context of comparable performance statistics enhances program accountability.
- Benchmarking has helped change the organizational culture by increasing the importance of performance measurement. Program managers are more concerned with data accuracy and reliability and are more open to data analysis.
- Benchmarking has given program managers a broader perspective on how services are provided. They have become more open to the idea that reviewing processes in other organizations can help them improve their own service performance.
- Budget staff members have become more knowledgeable about programs under study, decreasing the communication barriers between staff members and program managers.
- Reporting on comparative statistics has resulted in other management initiatives. For example, citizen surveys have been conducted to supplement the performance and cost data, which has resulted in allocating more resources to priority service areas.
- Benchmarking has assisted organizations with making progress toward performance budgeting, where the performance and cost data have been used in contract negotiations with external vendors, in the reorganization of selected programs, and in the allocation of additional or fewer resources based on need assessments.

One of the best anecdotal observations regarding the value of project participation came from a seasoned budget director who noted that her fingers were crossed every time she received an information request from the manager regarding a program. Her constant hope was that the program would be one of the ten programs currently under study in the benchmarking project, making it possible to give a timely and informative response.

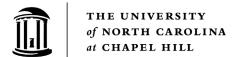
Conclusion

A distinction has been made between the adoption and implementation of performance measurement and benchmarking in local government. This review of the benchmarking experiences of the fifteen municipalities that participated in the benchmarking project in 2005 revealed that the comparative statistics have been used at the program level to support a variety of service delivery decisions.

Prior research has suggested that time is a factor in moving from the collection of measures to actually using them in management decisions. ¹³ Indeed, some of the municipalities that have the most experience in performance measurement and longest participation in the benchmarking project were among the leaders in the use of performance data; but time is no guarantee. Evidence from this review suggests that the systematic integration of comparative statistics into management processes, the use of the higher order measures of efficiency and effectiveness, and the management practice of performance comparison across all jurisdictions also were important factors to the implementation of measures for converting information into action.

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Residential Refuse Collection City of Winston-Salem

Background

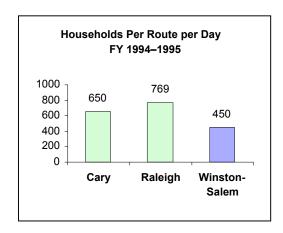
Following annexations in the mid-1990s, the Winston-Salem sanitation division had contracted with a private solid waste hauler to provide refuse collection service to approximately 6,500 households. The private contract totaled \$581,000 and was scheduled to expire at the end of FY 1996–1997. The sanitation division planned to bring the service in-house and requested additional personnel and equipment to accommodate this expansion during the FY 1997–1998 budget process.

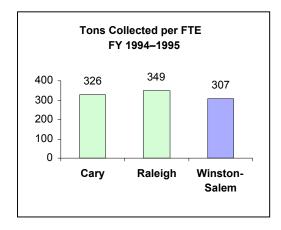
Analysis

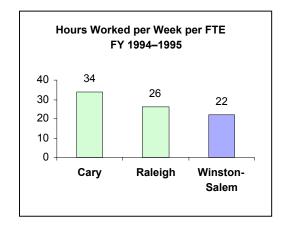
At the time of the request from the sanitation division, the first performance and cost data report from the North Carolina Benchmarking Project had just been published in October 1997. Using the benchmarking data on residential refuse collection, the Winston-Salem budget office noted that the city's tons collected per FTE was less than half of the municipal average. This was expected given that Winston-Salem relied on a less automated service of backyard collection. Therefore, budget staff reexamined the benchmarking data by restricting its evaluation to the other two backyard collection municipalities: Cary and Raleigh.

Even after limiting the comparison, Winston-Salem's tons collected per FTE were still 6 and 12 percent lower as compared to Cary and Raleigh, respectively. Further analysis of the benchmarking data showed that compared to Cary and Raleigh, Winston-Salem's refuse crews serviced fewer households per route per day and worked fewer hours per week per FTE. The data suggested that the sanitation division could extend its current routes and work longer days in order to serve the additional 6,500 households in the annexed area without additional staff.

While the data indicated extra capacity, it should be noted that residential refuse collection crews work on an incentive plan, whereby they are paid for a forty-hour work week even if they complete their routes in fewer hours. Sanitation division staff insisted that any increase in the number of households per route per day and hours worked per week per FTE had to be balanced with the incentive for crews to complete their routes in a timely fashion.







1

Residential Refuse Collection City of Winston-Salem

Actions

During the FY 1997–1998 budget process, staff from both the budget office and the sanitation division met with the city manager to discuss this issue. At that meeting, the decision was made to use the division's existing staff and equipment to serve the annexed area. The sanitation division did not renew the private contract, as a result, and adjusted its routes to serve the additional 6,500 households. No new positions and equipment were added to the budget. After adjusting for the additional tipping fees, the change produced an annual net savings of approximately \$395,000 for the city.

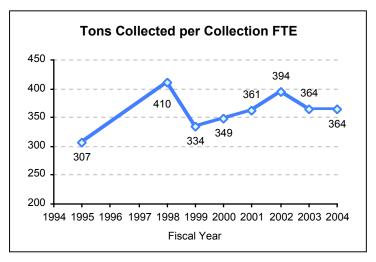
Net savings	\$395,080
Landfill tipping fees assumed by the city when contract was discontinued	-\$185,530
Contract expenditures for residential refuse collection service to 6,500 households	\$580,610

Outcomes

Since the initial analysis, the budget office and the sanitation division have continued to use the benchmarking data to evaluate whether new housing developments can be served with existing staff and equipment. From FY 1994-1995 to FY 2003-2004, the number of households served by the division increased from 54,135 to 65,300 or 21 percent. During that same time, only two routes had to be added to meet the growing demand for refuse collection. The sanitation division has been able to do this because of the improvements in labor efficiency in the following areas: hours worked per week, households served per route per day, and tons collected per collection FTE. The Winston-Salem budget office has estimated that if the city had remained at the level of only 450 households per route per day, the sanitation division would have added six additional crews.

Winston-Salem's success in this case demonstrates how benchmarking data can provide compelling evidence to support operational and budgetary decisions. Because of the availability of the benchmarking data and the ability to focus on municipalities with comparable operational arrangements, Winston-Salem was able to identify inefficiencies in its operations and expand service delivery without adding staff or equipment.

	Fiscal Year 1994–1995	Fiscal Year 2003–2004	Percent Change
Hours worked per week	22	31	+41%
Households served per route per day	450	510	+13%
Tons collected per collection FTE	307	364	+19%



Concord's solid waste staff began research in summer 2002 to determine if the city's five-year refuse and recycling collection contract with a private hauler should be renewed or if the city should bring collection back in-house. Benchmarking data from the *Final Report on City Services for Fiscal Year 2000–2001* indicated that Concord's cost per collection point was above the municipal average and that Concord had the highest number of complaints per 1,000 collection points. Although the cost measure decreased to \$86 per collection point for FY 2000–2001, it was uncertain whether this represented a real trend or a one-time fluctuation.

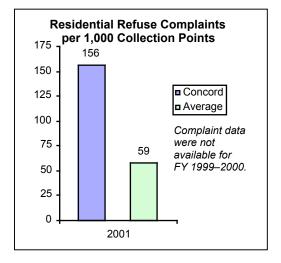
Cost per Residential Refuse Collection Point \$120 \$100 \$100 \$98 \$83 \$86 \$85 \$60 \$40 \$20 \$2000 2001

Analysis

Concord conducted an analysis using the North Carolina Benchmarking Project's full-cost accounting model. The analysis was completed in 2002 and was designed to determine whether a financial case could be made to bring refuse collection and recycling in-house. The city examined two equipment and personnel scenarios against the anticipated private hauler's contract cost. One scenario assumed a "low automation" design while the other scenario assumed a "high automation" design.

The results of the analysis indicated that first year startup costs would exceed the expected private hauler cost, but that over five years the city would save between \$700,000 and \$1.1 million by operating the collection in-house.

Determination of the potential quality improvement proved much more difficult to quantify. City staff felt confident that the mere element of having direct



supervision over collection crews would result in a significant improvement in quality and overall responsiveness to daily collection problems raised by residents.

Actions and Further Analysis

After the analysis was completed in 2002, city staff recommended to the city council at a January 2003 planning session to provide the collection service in-house or to renegotiate the hauling contract on a two-year basis. The city council directed the city manager to remain with the private hauler but to renegotiate for a short-term contract (two years instead of five) and to put the hauler on notice that the city was serious about service improvement. The analysis and benchmarking data also were used as a tool in negotiating better rates and quality with the hauler.

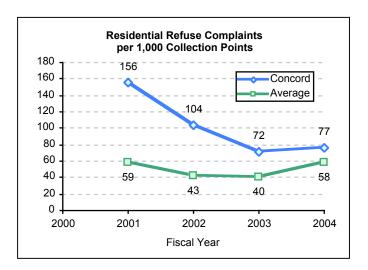
In light of the short-term contract renewal and a desire to confirm the original analysis, the city partnered with the School of Government's benchmarking staff members for a second analysis. The second analysis, completed in 2003, examined only "new" or additional costs to the city if collection were brought in-house. Results of the second analysis revealed similar findings to the first. After careful review, staff recommended in January 2004 that the city remain with the current hauler due to implementation challenges and "ramp up" timing concerns. The fact that service quality showed trends of improvement also presented an encouraging argument to remain with the private hauler. The city engaged the private hauler in a process to negotiate another new contract, using the benchmarking data to strengthen the city's negotiating position.

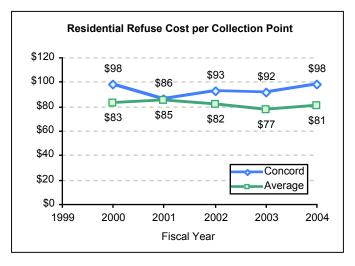
Outcomes

Once the private hauler understood that the city was seriously considering bringing residential refuse and recycling collection inhouse, the hauler made noticeable improvement in service quality. Complaints per 1,000 collection points dropped by half, falling from 156 in FY 2000–2001 to 77 in FY 2003–2004.

The city's latest collection contract specifies performance standards and a fine/incentive system for failure to meet basic service quality standards. Concord's latest collection contract requires monthly performance summaries and an annual customer satisfaction survey. Additionally, if the hauler's liquidated damages average does not exceed \$750 per month and \$1,500 total per quarter, damages are refunded to the hauler on a quarterly basis as an added incentive for good performance.

Concord's cost per collection point for residential refuse remains above the municipal average. However, the city has successfully negotiated lower rate increases by citing collection costs of other participants in the benchmarking project, especially those with in-house services. Initially, the contractor had proposed a rate of \$7.76 per collection point per month. Based on the negotiations, the city was able to lower the beginning base cost to \$7.07, a 9 percent drop. To this base amount, variable monthly fuel adjustments (not to exceed 4 percent per month) and annual CPI





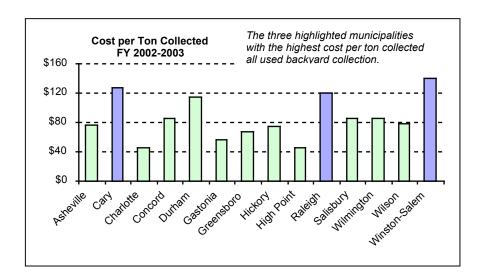
increases were added to determine each month's cost per collection point (\$7.51 as of September 2005). While the cost in actual dollars per collection point has remained relatively flat for the last five years for Concord, the cost has declined when inflation is taken into account. Concord's cost per collection point has dropped from \$98 in FY 1999–2000 to \$87 in FY 2003–2004 when converted to 2000 constant dollars, which equates to an 11 percent reduction.

The full-cost accounting model and the evaluation support from the School of Government provided Concord a method to successfully influence the outcome of a contract negotiation process by accurately comparing in-house service delivery versus private service delivery. The benchmarking data also were instrumental in improving the quality of service provided to the citizens of Concord.

In April 2004 city staff presented information to residents about a projected budget deficit of over \$8 million for FY 2004–2005. As part of this community educational effort, staff noted that fifteen of the twenty largest municipalities in the state provided curbside residential refuse collection while Winston-Salem provided backyard collection. During subsequent budget workshops, the city council expressed an interest in staff examining curbside collection. In August 2004 the city manager directed staff to prepare a presentation to city council on curbside collection. Earlier studies on this issue, specifically the Citizen Efficiency Review Committee and the city's zero-based budget review process, estimated significant savings from using a less labor-intensive method. However, efforts to implement curbside collection, even on a pilot basis, had been unsuccessful.

Analysis

In a September 2004 presentation to the city council, city staff used the benchmarking data to compare the method, cost, and efficiency of Winston-Salem's residential refuse collection program against the other participating municipalities. Using the FY 2002–2003 performance and cost data report, staff noted that only Cary and Winston-Salem were continuing to collect garbage from the backyard with Raleigh having converted to curbside service



in FY 2003–2004. The presentation included data on cost per ton, tons collected per collection FTE, and tons collected per 1,000 households. Winston-Salem's cost per ton of \$140 was well above the municipal average of \$82. More importantly, the three municipalities using backyard collection had the highest costs. City staff also presented the results of a survey commissioned by the Citizen Efficiency Review Committee and an unscientific Web-based survey by the *Winston-Salem Journal*. Both surveys indicated that over 60 percent of the respondents were open to the idea of curbside collection.

For the presentation, city staff prepared a cost analysis of different curbside collection scenarios. The estimated annual savings after full implementation of automated, mandatory curbside collection was \$1.8 million. It would take five years for full implementation, taking into account lease financing payments for automated trucks and roll-out carts. The estimated annual savings after full implementation of manual curbside collection was \$540,000. Again, it would take five years for full implementation given lease financing payments for roll-out carts. For voluntary curbside collection, the estimated annual savings was \$29,000 for the first five years, increasing to \$450,000 after full implementation. The analysis assumed that participation would increase by 5,000 households each year and lease financing of five years would be used for roll-out carts. A majority of the city council expressed a willingness to consider the voluntary curbside option.

Actions

In November 2004, city staff presented to city council a formal proposal for implementing voluntary curbside collection. The proposal included a resolution approving the program, amendments to the city code regarding the administration of the program, and award of a contract to a roll-out cart manufacturer. City council approved the proposal along

Projected Savings for Curbside Collection Scenarios					
	First Five Full				
	Years	Implementation			
Mandatory curbside (fully automated) Layoffs required Attrition only (no layoffs)	\$1,200,000 \$950,000	\$1,800,000 \$1,800,000			
Mandatory curbside (manual collection) No city-provided garbage carts City-provided garbage carts	\$540,000 \$10,000	\$540,000 \$540,000			
Voluntary curbside	\$29,000	\$450,000			

with a budget amendment that appropriated additional funds for the lease financing of the roll-out carts and for public education. The program was formally approved in December 2004. The city initiated an application process in January 2005, with a deadline for initial sign-up in March 2005.

The city anticipated 5,000 households would participate in the first year. The sanitation division planned to serve these households with its existing three-person crews and equipment. No staffing reductions were planned at that point. As more households volunteered for the program, the sanitation division would adjust the number and length of its routes in order to realize efficiencies from serving concentrations of program participants.

Outcomes

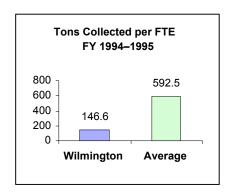
By June 2005, citizen response had been very high, with approximately 15,500 households volunteering to participate in the program. The sanitation division was able to decrease the number of routes from thirty to twenty-eight during FY 2005–2006, a reduction of two crews. Budgetary savings from eliminating six full-time positions and two garbage trucks totaled approximately \$201,000. However, the budgetary savings during the first year of the voluntary program are expected only to cover the debt payments for lease-financing 24,500 carts. The sanitation division does anticipate that, if the number of volunteers increases to 24,500, budgetary savings will be realized by the reduction of an additional refuse collection crew.

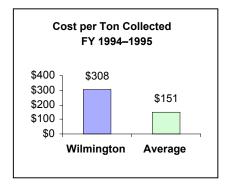
The use of the benchmarking data provided credibility to this policy discussion. The municipalities like Winston-Salem that had continued to use backyard collection all showed lower efficiency and higher costs. The benchmarking data helped illustrate how the mode of service delivery—backyard collection—significantly added to costs. The data also helped Winston-Salem justify an upfront investment in roll-out carts in order to realize longterm savings after full implementation.

Estimated Impacts							
Changes Changes in Changes Estimated							
Households	in routes	personnel	in trucks	savings (\$)			
5,000	-1	-3	-1	\$29,000			
10,000	-1	-3	-1	-\$14,000			
15,000	-2	-8	-2	\$104,000			
20,000	-2	-8	-2	\$61,000			
25,000	-3	-12	-3	\$144,000			

The city's recycling program began in 1990 as the S.M.A.R.T. program—Separate Materials and Recycle Together. Public pressure was the primary catalyst for the creation of the recycling program, and Wilmington was one of the first jurisdictions in North Carolina to offer curbside recycling. The program was managed with limited equipment, utilized its own material recovery facility (MRF), and marketed its own recycling sales.

In FY 1997–1998, Wilmington created a new position in the solid waste division to analyze the changing needs in the downtown area for refuse collection as well as to explore the possibility of contracting out recycling services. The need to evaluate the service area of recycling came from the suspicion that the city had outgrown the S.M.A.R.T. program. The method of collection was manual, which utilized flatbed trucks with ninety-gallon carts as sorting bins and manually sorted recyclables at each collection point. Trucks had to return to the recycling center two to three times per day, which delayed the completion of routes. To continue the program in-house would require the city to make a large capital investment in four suitable recycling trucks estimated to cost from \$320,000 to \$480,000—almost the total budget for the program itself.





Analysis

Benchmarking data from *Performance and Cost Data: Phase I City Services* published in October 1997 were used to confirm that the current recycling program was not efficient when compared to the municipal average. The number of tons of recyclables collected per FTE in Wilmington was only one fourth of the municipal average. The cost per ton of recyclables collected also was twice as high as the municipal average.

The city's analysis found that the budgeted direct costs for its recycling program in FY 1997–1998 totaled \$545,400. Anticipated revenues from recycling sales were budgeted at \$60,000. It was determined in the analysis that one program manager could be retained and reassigned other duties within the solid waste division. After making this adjustment, the net number was determined to be the amount that would, in essence, "go away" with privatization. Converted, the eliminated costs equaled \$3.60 per month per collection point.

City of Wilmington Analysis of Estimated Savings for Recycling Program						
	Year 1	Year 2 and Year 3				
Number of collection points	10,000	10,000 12,000 15,000				
City Recycling Program						
Total direct costs (FY 1997–1998)	\$545,400					
Recycling revenue	\$60,000					
Staff expenses retained	\$53,500					
"Go away" costs for privatization						
comparison	\$431,900	\$431,900	\$518,280	\$647,850		
Monthly cost per collection point	\$3.60	\$3.60	\$3.60	\$3.60		
Contract Recycling Program						
Monthly rate per collection point	\$2.39	\$3.29	\$3.29	\$3.29		
Annual cost	\$286,800	\$394,800	\$473,760	\$592,200		
Annual Savings via Contract \$145,100 \$37,100 \$44,520 \$55,650						

A contractor provided a four-year proposal which allowed for a tiered rate structure guaranteeing the largest savings in the first year and smaller savings in the second, third, and fourth years. The first year rate of \$2.39 per month per collection point versus the \$3.60 per month per collection point of eliminated costs produced a first year savings of \$145,100. The subsequent rate of \$3.29 resulted in savings from \$37,100 to \$55,650, depending on any increase in participation in the voluntary recycling program.

Actions

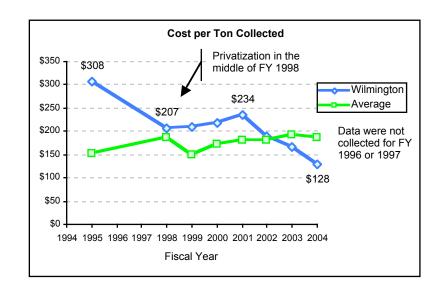
A recommendation to contract the recycling service was made based on the analysis. A new section within the solid waste division was created for the much needed improvements in downtown services and absorbed a portion of the reduction in city staff from the recycling section. Both changes became effective in January 1998.

Outcomes

The effect of the shift to privatization can clearly be seen by examining the cost of the recycling program per ton of material collected over time.

Starting at \$308 in FY 1994–1995, the cost dropped by approximately one-third after privatization took place in 1998 to \$207. Because of further changes, the cost per ton collected in Wilmington dropped to \$128 in FY 2003–2004. Wilmington is now below the municipal average. These rates are expressed in actual dollars and would be even lower if adjusted for inflation.

Additional improvements have been made as part of the ongoing contract. During FY 1999–2000, the recycling contractor converted from two-person crews to one-person

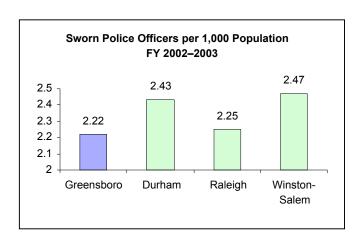


crews. The collection method also changed from source separation at the curb by collectors to mixed collection or single stream collection. Materials are now separated at a private facility in Raleigh, North Carolina. Because the regional material recovery facility (MRF) had additional recycling sales markets, Wilmington has been able to expand its paper product recyclables to include magazines, cardboard boxes, phone books and paperback books, cereal and food boxes, brochures, junk mail and paper bags, catalogues (less than two inches thick), and file folders.

Other changes also have been reflected in the comparative data. Approximately 61 percent of the eligible collection points participated in voluntary recycling in FY 1994–1995, with the rate rising to 84 percent in FY 2003–2004. Another measure of effectiveness, the percentage of total household refuse tonnage that was recycled rather than sent to the landfill, increased from 8 percent in FY 1994–995 to 13 percent in FY 2003–2004.

When faced with a budgetary decision to maintain in-house service or to privatize, the comparative measures from the North Carolina Benchmarking Project were an integral part of the analysis process. The data also have been used to track performance and costs over time to serve as a catalyst for further service and process improvements.

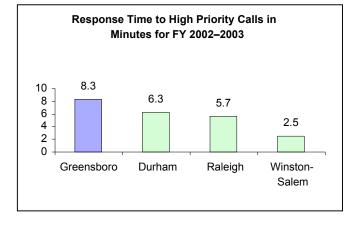
The police department in Greensboro regularly made supplemental budget requests for additional officers up until 2003, claiming to be significantly understaffed. At the same time, city council members were receiving feedback from citizens that crime was increasing within their districts and that those neighborhoods needed a greater police presence. A new police chief had recently been hired who placed a high priority on proactive patrol. In response to these issues, the city manager requested a joint analysis of the patrol function in fall 2003 by the budget and evaluation department and the police department, which would provide the city council with various options regarding additional patrol officers based on varying service levels.



Analysis

The basic plan of the analysis was to (1) study current service levels in Greensboro, (2) compare those service levels to peer municipalities, and (3) create a menu of options for council members based on the comparisons. The following areas were points of emphasis in determining current service levels: total calls for service, response times, and shift relief factor—the amount of time that patrol officers were spending answering calls for service versus proactive police functions.

After gauging current service levels, the next step in the process was to compare these service levels with identified peer



municipalities: Durham, Raleigh, and Winston-Salem. Although not all the benchmarking data regarding workload and response were collected and reported in the level of detail needed for the analysis, they were a good source of information for higher level comparisons. Using the benchmarking data also added legitimacy to the analysis because efforts had been made to ensure an "apples to apples" comparison.

The following information was revealed by the data analysis:

- Greensboro had 2.22 sworn police officers per 1,000 population, which was lower than peer municipalities.
- A Greensboro patrol officer spent approximately 20.5 percent of his or her time on administrative duties, 72.9 percent answering calls, and 6.6 percent on proactive functions.
- Calls dispatched per sworn officer of 466 was below the peer average of approximately 510.
- Response time to high priority calls of 8.3 minutes was much higher than peer municipalities.

Actions

In presenting this information to the city council, the study team stressed that no single finding or performance measure would indicate how many, if any, new officers should be hired. Instead, all of the findings should be used to gain a better understanding of current service levels and how Greensboro compared to its peers. This information should then be used by city council to determine what level of service should be provided within funding constraints.

The information was presented to the city council with a focus on the daily activities of the average patrol officer. The report indicated that the time required for administrative duties and responding to calls for service only left 6.6 percent (0.73 hours of an eleven-hour shift) of an average patrol officer's time available for proactive duties. Given this finding, four staffing options were presented to the city council along with projected outcomes. The city council ultimately funded thirty-two additional patrol officers, which was estimated to increase proactive patrol time by 8.7 percentage points, from 6.6 percent of an eleven-hour shift to

15.3 percent of an eleven-hour shift. These additional officers represented a 6 percent increase in total position control for the police department.

Staffing Options Summary							
	Additional Administrative CFS Proactive/ Percentage Officers Time Time Patrol Time Increase						
Current		20.5%	72.9%	6.6%			
Option 1	17	20.5%	68.0%	11.5%	5%		
Option 2	37	20.5%	63.0%	16.5%	10%		
Option 3	60	20.5%	58.0%	21.5%	15%		
Option 4	99	20.5%	51.0%	28.5%	22%		

Outcomes

The officers were approved and hired for FY 2004–2005. During that year, the police department conducted two academy classes as opposed to its usual single attrition class. Because each class undergoes twenty-six weeks of academy training and fourteen weeks of field training, the additional officers were not available for duty until the end of FY 2004–2005. Performance measures will be used to determine the success of this policy decision.

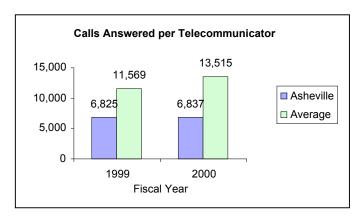
Emergency Communications City of Asheville

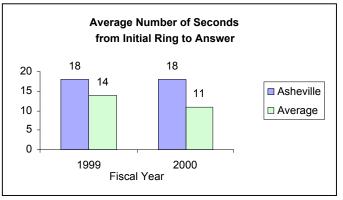
Background

The Asheville budget office began to have concerns about the performance and staffing levels in the emergency communications function after the Final Report on City Services for Fiscal Year 1999–2000 was published in February 2001. The benchmarking data revealed that the number of calls answered per telecommunicator was substantially lower than the municipal average for two consecutive fiscal years, suggesting that Asheville might be overstaffed in emergency communications. The effectiveness measure of average number of seconds from initial ring to answer also revealed that telecommunicators were slower in answering calls than the municipal average.

Analysis

The city hired a summer graduate intern in 2001 from the Master of Public Administration Program at the University of North Carolina at Chapel Hill. One component of the intern's work plan was to complete an operations audit of emergency





communications in response to the benchmarking results. The operations audit included interviews with emergency communications staff members; site visits to document and analyze processes; interviews with School of Government project staff members; and contact with other municipalities and professional organizations, such as the International City/County Management Association.

The operations audit produced a number of findings for improvement to the emergency communications function:

- Asheville's computer-aided dispatch (CAD) system required more personnel to operate effectively than systems from other municipalities.
- Long-term cost savings could be realized through acquiring a split-screen system that was not as personnel-intensive to operate.
- Staffing schedules were not sensitive to call volume. Using data on normal call activity for each shift to set staffing levels would better balance needs with available staff.
- Enhanced computer training for telecommunicators was needed.
- Programs or incentives to reduce employee turnover could help stabilize the staff.

Initial Actions

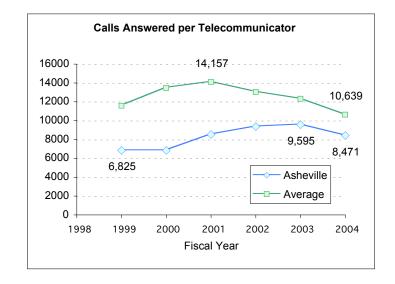
The operations audit was completed in July 2001. There was a great deal of resistance in the police department to making any changes in emergency communications, especially changes to staffing schedules. Therefore, no changes were made to the emergency communications function in response to the operations audit.

Issues with emergency communications resurfaced in January 2003. During the annual city council retreat in preparation for the FY 2003–2004 operating budget, city staff presented concerns about time delays that were occurring from Buncombe County transferring over 32,849 emergency police and fire calls to Asheville's emergency communications center. At that time, staff recommended to the city council that Asheville create its own primary 911 Public Safety Answering Point (PSAP) in order to provide more rapid response to emergency calls within the city. The council requested more information on the subject. Buncombe County responded with a written proposal to construct a joint emergency communications center at no cost to the city if Asheville would agree to not pursue the PSAP recommendation. The council took action affirming support to participate in the joint emergency communications center. During the interim, Buncombe County agreed to begin dispatching the city's fire calls. In September 2003 the city council authorized the city manager to execute a performance-based contract with Buncombe County for dispatch of fire calls (approximately 11,389 calls annually), with the city continuing to dispatch police calls.

Further Actions and Outcomes

Buncombe County began dispatching fire calls in March 2004. With this change, the overall annual workload for the city's emergency communications function was reduced by approximately 11,000 calls. However, no positions were eliminated in the emergency communications function. The benchmarking data from the *Final* Report on City Services in FY 2003-2004 captured only four months of this new scenario—reduced workload with no reduction in staff. Calls answered per telecommunicator, as a result, decreased from 9,595 in FY 2002-2003 to 8,471 in FY 2003-2004, which equates to a 12 percent reduction.

During the FY 2005–2006 operating budget process, the city council directed the city manager to submit a list of



potential budget reductions that would provide funding for several council priorities that were not included in the manager's proposed budget. The budget director contacted the police chief in regard to Asheville's workload in emergency communications, which was lower than the municipal average and had dropped even further with the transfer of fire call dispatch to the county. The police chief agreed to include three vacant telecommunicator positions on the list of potential budget reductions that were submitted to the city council. During its budget work sessions, the council accepted this staff recommendation and eliminated the three vacant positions. This reduction amounted to annual savings of approximately \$105,000, which council reallocated to fund its priorities.

The experience in Asheville points to the importance of having comparative data across municipalities. The availability of reasonably equivalent data allowed the identification of a potential problem and provided evidence to support the need for change. However, the analysis was initially not sufficient by itself. The Asheville example also demonstrates the need for patience and persistence. Even with the initial operations audit pointing to overstaffing, change did not take place immediately. Additional forces had to come into play before the benchmarking evidence could be fully implemented for producing change.

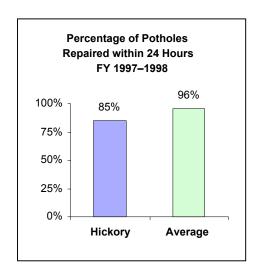
Asphalt Maintenance & Repair City of Hickory

Background

Benchmarking data from the *Final Report on City Services for Fiscal Year 1997–1998* revealed that Hickory's 85 percent of potholes repaired within twenty-four hours was much lower than the municipal average of 96 percent. Furthermore, Hickory ranked last in this measure out of the eleven municipalities participating in the benchmarking project at that time. The measure prompted an investigation into why Hickory's performance was low and what could be done for improvement.

Analysis

Staff members of the asphalt maintenance and repair function contacted the other municipalities in looking for process improvement strategies and determined that a specialized piece of equipment called a hot-patch truck was a key factor in the efficiency and effectiveness of pothole repair. This type of truck is designed with a hot box that keeps the asphalt at a constant temperature, enabling workers to respond to potholes even when the asphalt plant is not open or not in operation. Hot patch also is more effective than cold patch when filling a pothole.



The benchmarking data revealed that pothole repair was a specific problem rather than a general problem in Hickory's asphalt maintenance and repair function. Other performance measures showed that Hickory was more cost efficient in terms of cost per lane mile resurfaced and cost per ton of asphalt for contract resurfacing. Hickory also ranked close to the municipal average in terms of the quality of streets as measured by street segments rated 85 percent or better. The performance data helped to pinpoint the nature of the problem to a specific process.

Actions

Although a hot-patch truck was identified as a key solution, staff members knew that securing funds for this capital investment would take some time; therefore, they initiated other interim process improvements. First, a higher priority was placed on repairing potholes in a timely manner. Second, improvements were made to the reporting system to make sure that the repair of potholes was tracked and accurately documented. Third, staff members began keeping on hand cold-patch bags of mix for repair of potholes when the asphalt plant was not open.

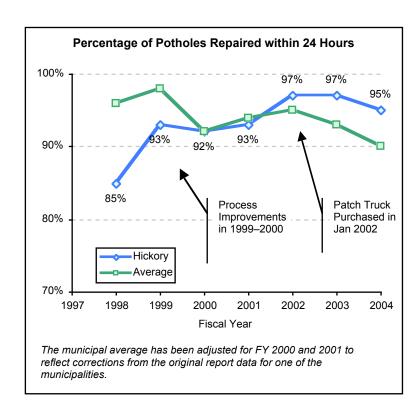
Staff members of asphalt maintenance and repair made a presentation at the city council/staff retreat in 2000 on the need for a hot-patch truck, using the benchmarking data for justification. Their ability to show the percentage of pothole repairs within twenty-four hours in the context of other municipalities was extremely useful in convincing city council members to support the need for improvement in this area. A recommendation was made to add the new equipment to improve the efficiency and effectiveness levels of this important process. Response was favorable from the city council, and they approved the hot-patch truck purchase for the following budget year.

The city of Hickory was able to save money on the purchase by piggybacking on a bid process initiated by the city of Fayetteville. Hickory justified the purchase at \$150,000 for the hot-patch truck. The actual cost of the hot-patch truck was \$102,605. The truck was received on January 14, 2002.

Outcomes

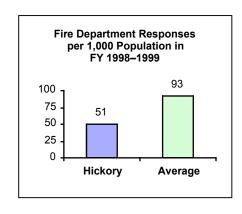
As a result of the initial process improvements and the addition of the hot-patch truck, workers are able to respond to potholes in a more efficient manner. The initial process improvements in 1999 and 2000 brought Hickory's percentage of potholes repaired within twenty-four hours up from 85 percent in FY 1997–1998 to 93 percent in FY 2000–2001. Following the purchase of the hot-patch truck in 2002, Hickory's percentage went up to 97 percent in FY 2001–2002 and has remained constant since that time.

The availability of benchmarking data helped Hickory identify a particular problem within asphalt maintenance and repair and build support for a solution. Rather than a single one-time fix, Hickory addressed the problem over time with a set of process improvements that included the purchase of a hotpatch truck. This ongoing



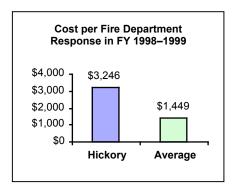
commitment to improvement is reflective of the Total Quality Management (TQM) initiative that Hickory has embraced. The data not only alerted local officials to a specific problem, they provided a peer group to contact in order to identify possible solutions for improving the service.

A new fire chief conducted an in-depth analysis of the Hickory fire department in 1997 and identified several areas that needed attention. One of the areas involved the service delivery function for emergency responses, which only included fire calls. Because firefighters are considered life savers and emergency responders the question was asked: Why did the members of the fire department not have the basic medical and rescue training needed to protect themselves within their own emergency operational environment and provide this basic service to the community they serve? Initial concerns included medical response was too expensive, the possibility that territorial issues with the county's EMS and rescue squads would arise, and the resistance by firefighters to getting involved with calls involving medical services.



Building Support

Performance and cost data for fire services were collected and reported for the first time in the *Final Report on City Services* for Fiscal Year 1998–1999. The comparative data revealed that Hickory's fire department responses per 1,000 population were substantially lower than the municipal average and that the cost per fire department response was almost twice the municipal average. The primary reason for these differences was the fact that Hickory's fire department did not respond to medical calls. These comparative data were used by the fire chief to help build his case for medical and rescue training, which would eventually allow the fire department to respond to emergency medical calls and decrease its overall cost per response.



Several meetings were held with EMS and rescue coordinators from Catawba County on the importance of having qualified fire personnel responding to basic medical and rescue calls. An important part of the planning was to gain the support of firefighters. It was stressed that these additional skills would improve their ability to help one another in case of injury. Analysis was conducted on the various options for training and certifying personnel.

Actions

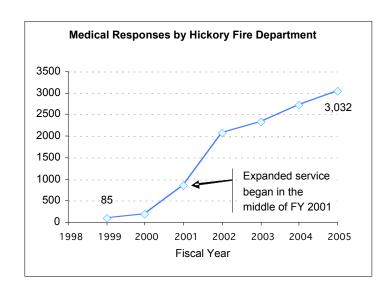
The recommendation was made to provide training to firefighter I and II personnel while on shift. In addition, it was determined that all training could be conducted with in-house instructors. After the support of city management was obtained, firefighters began work on their EMT, EMT-D, and ERT (extrication) certification. Formal partnerships also were developed with the county's EMS and rescue squads to facilitate cooperation and define roles. The process for firefighter certification began in March 2000 and was completed in October 2000. On January 1, 2001, Hickory's fire department started responding to emergency medical calls.

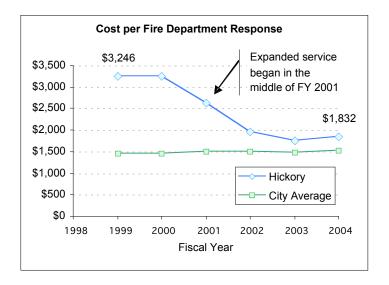
Outcomes

The service changes in Hickory have led to a dramatic increase in the number of medical responses by the fire department. The total number of medical responses has risen from eighty-five in FY 1998–1999 (or less than two per week) to 3,032 in FY 2004–2005 or fifty-eight responses per week. As with other municipalities in the benchmarking project, medical responses are now the most common type of response for Hickory's fire department.

The expanded service delivery is funded within the general fund. During FY 2004–2005, the cost of this expanded service was \$137,844. This cost equates to \$3.19 per citizen or \$45.46 per medical call. As a result of the service delivery change, the following benefits are recognized:

- Certification allows the fire department to provide basic medical care and rescue services to firefighters, other emergency personnel, and the general public.
- The response time for qualified personnel to arrive on scene to basic medical and rescue calls has been reduced throughout the service area.
- The fire department has realized an increase in efficiency, which is reflected by a reduction in the cost per response.
- There is a minimal cost to providing qualified medical and rescue service to the community, which helps enhance the quality of life within the community.



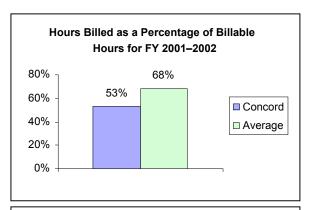


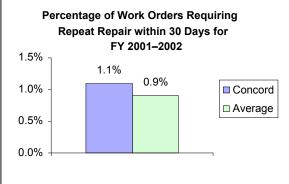
While the benchmarking data did not provide the original impetus for the service delivery change, it did provide information that was helpful in making the case for change. The suggestion for change in the service delivery system was not initially embraced. Persistence, planning, and the availability of good comparative data were essential for expanding the role of the fire department in Hickory.

Performance and cost data for fleet maintenance were collected and reported for the first time in the Final Report on City Services for FY 2001-2002. The comparative data for Concord revealed several potential problems, including low shop productivity and excessive repeat repairs within thirty days. Concord also discovered a high number of breakdowns during the day, which affected the productivity in other departments as their equipment was not available for use. Consequently, problems in fleet maintenance were increasing unscheduled maintenance work orders (breakdowns) and decreasing the number of scheduled maintenance work orders (preventive maintenances for brakes, tires, etc.). Scheduled maintenance work orders are the most costeffective, productive form of vehicle maintenance and decrease the likelihood of costly breakdowns.

Analysis

After analyzing the comparative benchmarking data, staff members examined the operations of fleet maintenance in greater detail and found multiple deficiencies. Fleet management was unaware of performance issues; mechanics were provided little structure and given no expectations





as to job efficiency or shop productivity; fleet staffing structure was inefficient; many fleet processes were inefficient (state inspections, preventive maintenance procedures, scheduling and prioritizing work); the method of buying parts increased downtime; warranty issues were not weighed against downtime; lack of communication between fleet maintenance and other city functions increased repair costs; fleet software absorbed too much management time; and vital scheduled maintenance was not being performed.

Actions

The most effective change was simply implementing accountability. Each mechanic is now aware of performance standards and is provided a report of individual and team productivity accomplishments on a monthly basis. Not only do they see how they personally affect productivity, but they also understand how and why the many process changes fleet maintenance has implemented affect overall productivity. The process changes included the creation of preventive maintenance check sheets (to ensure quality and promote accountability); the reduction of management staff by one full-time equivalent position; the implementation of state and federal inspection programs (saving the cost of outsourcing and travel time); a change of purchasing practices to promote competition; the use of multiple vendors to increase the likelihood of completing repairs within twenty-four hours; the flagging of vehicles near retirement to reduce unnecessary maintenance; the reorganization of second shift to focus on preventive maintenance as opposed to repairs; the creation of trouble forms to expedite communication between first and second shift supervisors; and the enforcement of preventive-operation checks which decrease unscheduled maintenance work orders.

Fleet Maintenance City of Concord

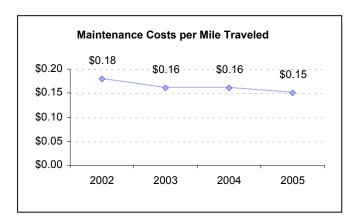
Outcomes

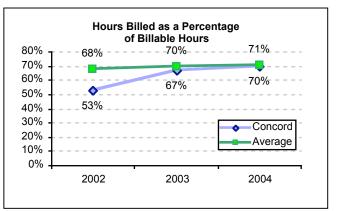
The operational changes helped reduce maintenance costs by three cents per vehicle-mile, from eighteen cents in 2002 to fifteen cents in 2005. This represents a savings of \$120,000 over a three-year period in Concord's fleet maintenance operations. The elimination of a management position also created an annual savings of approximately \$45,000.

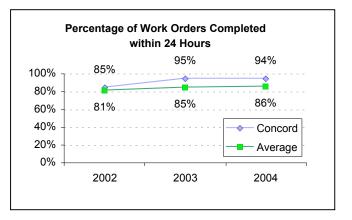
Other improvements were documented as well. Hours billed as a percentage of billable hours increased from 53 percent in FY 2001–2002 to 70 percent in FY 2003–2004. The percentage of work orders completed within twenty-four hours increased from 81 percent to 86 percent and the percentage of work orders requiring repeat repairs within thirty days decreased from 1.1 percent to 0.4 percent during the same time period.

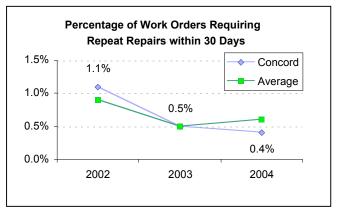
Another area of improvement occurred in the replacement of transmissions. After the transmission preventive maintenance program was implemented, the replacement of transmissions decreased from twentyfour in 2002 to five in 2005.

A key to any successful performance measurement program begins with accurate and meaningful data. Effectiveness and efficiency measures are more useful than workload measures, and Concord has found it beneficial to track these measures on a monthly basis as opposed to annually. Sharing performance information and getting buy-in from those actually doing the work also are crucial to a successful performance measurement program.









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North Carolina Local Government Performance Measurement Project

A Guide to the North Carolina Local Government Performance Measurement Project

February 2001

Edited by William C. Rivenbark for the North Carolina Local Government Performance Measurement Project*

Presents the methods developed and used by the North Carolina Performance Measurement Project, an effort to encourage the use of performance measurement and benchmarking, to produce comparable performance and cost data, and to promote data use for the purpose of service or process improvement. It represents the work of public officials in North Carolina who are committed to improving the numerous services provided by local government.

Final Report on City Services for Fiscal Year 2003–2004: Performance and Cost Data February 2005 Prepared by William C. Rivenbark for the North Carolina Local Government Performance Measurement Project*

Presents fiscal year ended June 30, 2004, performance and cost data for fifteen North Carolina cities in the service areas of residential refuse collection, household recycling, yard waste/leaf collection, police services, emergency communications, asphalt maintenance and repair, fire services, building inspections, fleet maintenance, and human resources.

Final Report on City Services for Fiscal Year 2002–2003: Performance and Cost Data February 2004 Prepared by William C. Rivenbark and Matthew H. Dutton for the North Carolina Local Government Performance Measurement Project*

Presents fiscal year ended June 30, 2003, performance and cost data for fourteen North Carolina cities in the service areas of residential refuse collection, household recycling, yard waste/leaf collection, police services, emergency communications, asphalt maintenance and repair, fire services, building inspections, and fleet maintenance.

Final Report on City Services for Fiscal Year 2001–2002: Performance and Cost Data February 2003 Prepared by William C. Rivenbark and Matthew H. Dutton for the North Carolina Local Government Performance Measurement Project*

Presents fiscal year ended June 30, 2002, performance and cost data for thirteen North Carolina cities in the service areas of residential refuse collection, household recycling, yard waste/leaf collection, police services, emergency communications, asphalt maintenance and repair, fire services, building inspections, and fleet maintenance.

*For more information on the North Carolina Local Government Performance Measurement Project, please see www.sog.unc.edu/programs/perfmeas/index.html.

Capital Budgeting and Finance: A Guide for Local Governments

2004, a joint venture of the School of Government and the ICMA

A. John "Jack" Vogt

An up-to-date and comprehensive how-to manual for planning and financing capital projects. Clearly explains capital budgeting approaches and methods, especially for local jurisdictions under 200,000 in population, and is a valuable resource for city and county managers, finance and budget officials, planning directors, public works administrators, and other officials involved in decisions to meet public infrastructure and facility needs. Presents accepted and successful policies and practices from across the country, including many North Carolina illustrations, and describes key steps, including project identification, planning and prioritizing projects, developing a capital finance strategy, paying for projects, and structuring and selling debt.

Performance Budgeting for State and Local Government

2003, published by M.E. Sharpe

Janet M. Kelly and William C. Rivenbark

Describes performance budgeting as the integration of the components of performance management—planning, performance measurement, benchmarking, and evaluation—into the framework of state and local government budgeting. Presents performance budgeting, not as a stand-alone budgeting technique, but as an extension of the traditional budget process that reconciles financial and operational accountability.

Tools for Decision Making: A Practical Guide for Local Government

2002, published by Congressional Quarterly Press

David N. Ammon

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