County Vehicle Services: Preventing Wear, Repairing Tear

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County governments are constantly trying to do more with less. One area that county officials often evaluate for potential savings is maintenance and repair services on fleet vehicles. Counties take two basic approaches to providing these services: "in-house" counties operate their own garages, and "contracting" counties purchase services from private garages.

To compare these two modes of service provision, we conducted a survey of North Carolina counties for fiscal year 1997,[1] gathering information on number of fleet vehicles operated and serviced (in two categories—heavy trucks; and autos, light trucks, vans, etc.); actual expenditures for vehicle service; fixed costs for vehicle service (direct costs for administration, facilities, etc., plus overhead); percentage of vehicles serviced within a specified number of days; percentage of vehicles returned for the same repair within six months; process for contracting if used; and formal preventive maintenance policy, if any.

This article presents the results of the survey. It also suggests several management practices to improve both in-house and contracted vehicle services.

Results

Thirty-two counties responded to the survey. Of these, 18 operated an in-house facility, and 14 contracted with private garages. Demographic information on the responding counties indicates that the in-house counties are predominantly larger and urban, whereas the contracting counties are generally smaller and mostly rural (see Table 1).

Average Cost per Vehicle

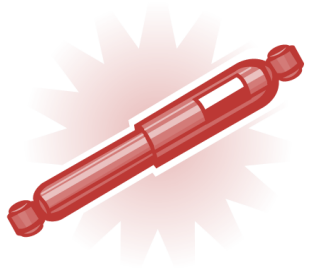
We calculated an average annual service cost per vehicle by adding actual expenditures and fixed costs and dividing the total by the number of heavy trucks plus the number of autos, light trucks, vans, and so forth. The 18 in-house counties reported an average cost per vehicle of $2,046, with a range of $923 to $4,218. In contrast, the 14 contracting counties reported an average cost of $1,320, with a range of $358 to $2,414. (See Table 2.)

Threshold for In-House Operations

Most counties with 150 vehicles or more reported servicing their vehicles in-house, whereas most counties with fewer than 150 vehicles reported contracting for services (see Figures 1 and 2, pages 34 and 35, respectively). We offer two possible reasons for this 150-vehicle threshold, based on both survey responses and research that we conducted for Person County, which wanted to evaluate the cost-effectiveness of developing an in-house operation at an abandoned solid-waste transfer station.[2]

First, 150 vehicles may be the level at which a county begins to realize sufficient economies of scale to justify construction and operation of an in-house garage. For example, in Person County we found that renovating an existing facility and furnishing it with equipment for two bays to service 120 ve-

This section features the work of students and recent graduates of UNC–CH's Master of Public Administration Program at the Institute of Government. The authors are 1999 graduates of the program.



hicles was not cost-effective. Given the small size of the county's fleet, a garage could not realize enough savings in maintenance and repairs to justify the county's discontinuing its practice of contracting for vehicle services.

Second, as a county's number of vehicles increases, obtaining a sufficient level of vehicle service from private vendors may become more difficult. When a county contracts for vehicle services, it competes with private customers for service time. At the 150-vehicle level, garage operators may be unable to accommodate both a county's demand for prioritized service and the demand of their private customers. This situation becomes a concern when a backlog of vehicles to be repaired begins to delay county services.

Table 1. Demographic Data on Survey Respondents

	In-House Counties	Contracting Counties	State Average
Average population	130,357	35,284	73,231
Mean proportion of population rural	44.0%	69.0%	50.3%
Average per capita income	$18,855	$17,002	$19,567
Average unemployment rate	4.6%	5.9%	4.3%
Average poverty rate	12.2%	16.3%	13.0%
Average cost of living (state = 100)	90.5	80.0	100.0
Average growth rate	1.2%	0.6%	1.2%
No. of counties in metropolitan statistical area	9	3	36

Source: North Carolina Department of Commerce and North Carolina Office of State Planning, 1995 and 1996 data.

Table 2. Average Costs of Vehicle Service

	In-House Counties	Contracting Counties
Number of responses	18	14
Average number of vehicles	271	67
Heavy trucks	16	3
Autos, light trucks, vans, etc.	255	64
Average service cost per vehicle	$2,046*	$1,320*

*The probability of this cost difference occurring at random is 10 percent (that is, the figures have a 90 percent confidence level).

Quality of Service

The survey focused on two measurements of quality: the mean percentage of vehicles serviced within one day and the mean percentage of vehicles returned for the same repair within six months (see Table 3). On both measurements, in-house counties reported better performance than contracting counties: 74 percent of their vehicles serviced within one day, compared with 55 percent of contracting counties' vehicles; and 1.9 percent of their vehicles returned for the same repair within six months, compared with 6.5 percent of contracting counties' vehicles.

Suggested Practices

Regardless of how a county provides vehicle maintenance services, it might implement several practices to improve cost-effectiveness and quality. Survey respondents reported some of these practices. We have supplemented those they reported with recommendations from Institute of Government faculty who specialize in local government.

In-House Counties

Establishment of Quality Measurement Standards

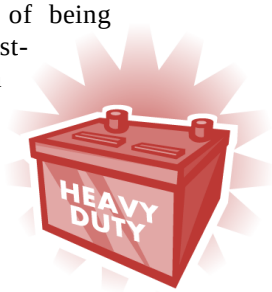
In-house counties should establish goals specifying the types of services needed, the time intervals at which preventive maintenance should occur, and service standards. County mechanics and other department employees responsible for vehicle services should participate in setting these goals and standards. For example, a county might set the following standards:

- Ninety-five percent of vehicles will be repaired within two days.
- No more than 5 percent of vehicles should be returned for the same repair within six months.

Using performance measures is important to track services performed on vehicles, to hold the garage staff accountable for the quality of its work, and to provide the head mechanic with the necessary information to make management decisions.[3]

In-House Vehicle Service as a Separate County Department

Many counties that currently use an in-house operation set it up as a separate internal-service department rather than as a division within one of the units the operation serves. The reason for this arrangement is most likely to allow the service department to recover its costs for providing the service to the county. There also may be greater accountability to and oversight by administrators and elected officials if the garage stands on its own instead of being placed within an existing department. Such a garage still should establish service expectations and performance measures to enhance its ability to oversee its work.



Fee-for-Service Budgeting Method/Internal Service Fund Accounting

A vehicle maintenance and repair department may want to charge individ-

ual departments for services.[4] Vehicle service fees can be reflected in the county budget as both expenses to the departments whose vehicles are serviced and revenues for the vehicle service department. These figures could be used to monitor how much each department spends on vehicle services. The vehicle service expenses and revenues would be accounted for in an internal service fund in the county budget.

Triage Systems

Many counties use a "triage" system to prioritize vehicles for services and repairs. For example, emergency medical services and sheriff's department vehicles often have priority over other county vehicles. This system allows vehicles needed for critical public services to be available at all times, and makes vehicles used in nonemergency functions (for example, library services or public works) wait a short while, if necessary, for service or repair. To implement such a system, department heads or the county manager might devise a list of essential and nonessential county vehicles.

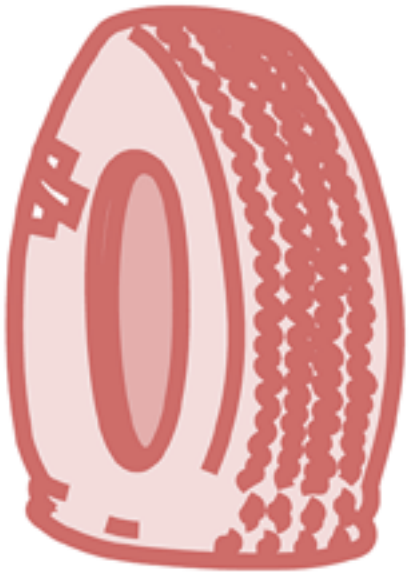
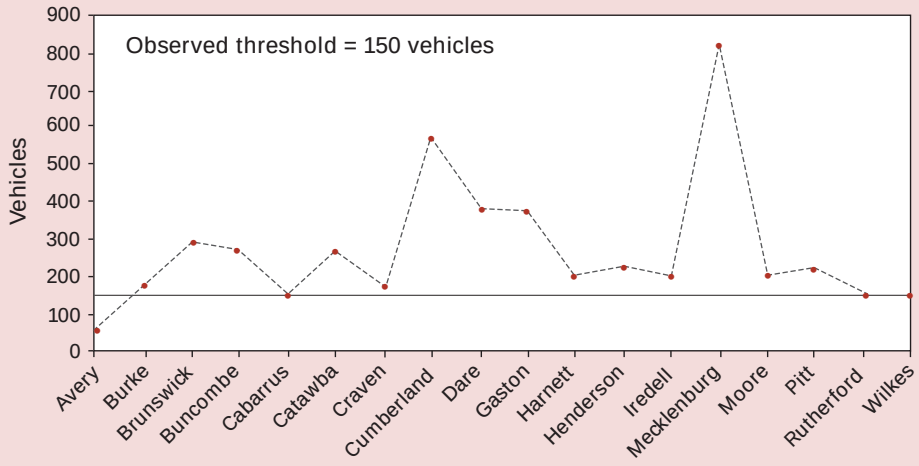


Figure 1. Number of Vehicles in 18 Counties with In-House Vehicle Services



Contracting Counties

Centralized Competitive Bidding for Vehicle Services

County departments typically prefer to choose their own vendors. However, decentralized, noncompetitive bidding can lead to significantly different charges across departments. Instituting a centralized competitive-bidding process in which different vendors earn all departments' business for particular services (preventive maintenance, tire replacement and repairs, major overhauls, and so forth) would reduce price differences and should result in more competitive rates. In the contracting counties that responded to our survey, those using competitive bidding for some of their vehicle services paid an average of $230 less per vehicle than those without formal bidding. Additionally, contracting counties using competitive bidding had a higher percentage of vehicles repaired within one day than those without this process (73 percent versus 60 percent).

Through competitive bidding, officials could select a list of vendors for each service and allow departments to choose from that list. New requests for bids to be on the list would go out every two to four years to ensure competitiveness. This practice would provide departments with some contracting flexibility, while allowing a county to realize volume discounts in services through formal contracting.

Tracking of Repair Quality

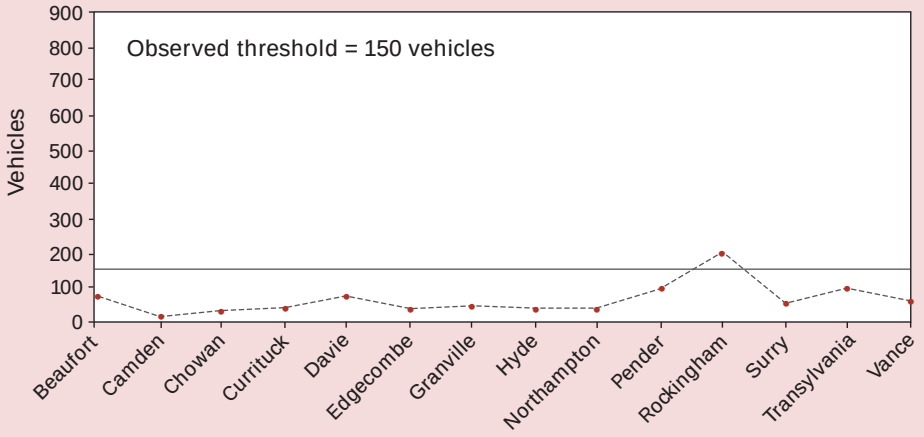
One of the most noticeable differences between the in-house and the contracting counties is in the quality of service. In-house counties had a higher percent-

Table 3. Data on Quality

	In-House Counties	Contracting Counties
Average number of vehicles	271	67
Mean proportion of vehicles serviced within 1 day	74%*	55%*
Mean proportion of vehicles returned for same repair within 6 months	1.9%*	6.5%*

*The probability of this percentage difference in quality occurring at random is 10 percent (that is, the figures have a 90 percent confidence level).

Figure 2. Number of Vehicles in 14 Counties Contracting for Vehicle Services



age of vehicles repaired within one or two days and a lower percentage of vehicles returned for the same repair within six months, than contracting counties. To remedy this deficiency, a contracting county might monitor how well local garages are servicing county vehicles as indicated by these two measurements, and provide the data to the people responsible for selecting where to send vehicles for service. The departments themselves might track these figures, or the county manager's office might do so.

Limitations

Confidence in the trends that this survey analysis highlights is limited by the low number of respondents—just under one-third of North Carolina's counties. At this low response rate, we can achieve only an 89 percent confidence level for the conclusions. Further, that

confidence level is overly optimistic because we could not estimate the total number of contracting and in-house counties to calculate accurately the statistical significance of variations within each group.

Conclusion

This study identifies factors that affect the provision of vehicle maintenance services. Perhaps the most important factor is the number of vehicles in a county's fleet. Above a threshold of approximately 150 vehicles, a county may realize economies of scale from in-house services, while gaining greater oversight of the quality of vehicle service. Of course, a county could and probably should use a number of other factors to determine whether to provide services in-house or continue contracting for them—for example, the availability and the capacity of contractors in the specific market area and the effect of those variables on price and quality; the structure and the personnel capacity of a county's departments; and the extent of variation within a fleet and the resulting array of service needs.

Another interesting finding is the quality advantage of in-house vehicle services as measured by the differences in turnaround time and frequency of reservicing. Taken together, the factors discussed in this article provide a basis for county officials to determine how to provide vehicle services.

Notes

1. We mailed two surveys, one blue and one yellow, to all 100 county managers, asking them to forward the surveys to the county staff members qualified to respond. The blue survey, which contained 17 questions, focused on in-house operations; the yellow survey, which contained 13 questions, focused on contracting operations. Counties were asked to complete the survey appropriate to their mode of service delivery. If their mode of service delivery combined elements of the two approaches, we asked that they fill out the appropriate data on both surveys. We conducted a follow-up interview with the 32 respondents by telephone. Our findings reflect the information provided in both the surveys and the follow-up interviews. Occasionally, to account for gaps, we have supplemented the data with our best estimates, based on research.

2. Students in the Master of Public Administration Program at the Institute of Government performed the analysis as part of a course.

3. For performance measurements and benchmarks for fleet maintenance and other local government functions, *see* David N. Ammons, Municipal Benchmarks: Assessing Local Performance and Establishing Community Standards (Thousand Oaks, Calif.: Sage Publications, 1996).

4. This recommendation came from Gregory S. Allison, an Institute of Government faculty member specializing in public finance, governmental accounting, and financial reporting.