LAC

Report to the General Assembly

April 2001

A Review of South Carolina School Bus Operations

LEGISLATIVE AUDIT COUNCIL

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Synopsis

Members of the General Assembly requested that we conduct an audit of South Carolina's school bus operations. The requesters were primarily concerned about the cost of operations, safety, and service. South Carolina is the only state that owns and maintains the entire school bus fleet. The State Department of Education (SDE) shares responsibilities for student transportation with the 86 school districts. The school districts establish bus routes and also recruit, employ, and supervise bus drivers. Our findings are summarized below.

- We found a significant difference between the cost per student as defined by SDE and the actual cost per student. SDE divides the average number of one-way trips students take each day into transportation operating expenditures. This results in a cost of $227. This is not the actual cost per student. Actual cost per student is based on a count of students and not a count of trips. Dividing the average number of students transported daily into operating expenditures results in a cost of $350 — a difference of $123 or 54%.

- In 1999, SDE stated that South Carolina had A. . . the lowest per pupil transportation cost in the country.@ SDE used unreliable data in reaching this conclusion. National school bus transportation data lacks uniformity, thereby preventing meaningful comparisons. Not only do states calculate the cost per student differently, but the types of costs included in their expenditures also vary.

- In our 1999 audit of school bus purchases, we found that South Carolina purchased buses with higher cost specifications than those selected by other states and communities. We also found that South Carolina had no formal replacement policy for school buses. SDE recently revised its bus specifications, which should result in lower bus prices. In addition, SDE has recommended implementation of a 15-year / 200,000 – 300,000 mile replacement schedule.

- SDE reports that school bus mechanics and bus drivers are underpaid, when compared with wages paid by other state agencies and other employers statewide, and that the turnover rate is high. In April 2000, a private consultant hired by SDE recommended a 10.2% increase in pay for bus mechanics costing $900,000 per year. The consultant also recommended a pay increase of 13.1% to 45% for bus drivers, costing between $4.6 million and $15.9 million per year. We reviewed only the transportation component of the state's educational system. Therefore, we did not determine whether the additional funds needed are available from existing education resources or whether there is a need for additional funding.

- According to the National Highway Transportation Safety Administration, school buses are "one of the safest forms of transportation." We found that a statistically valid comparison of school bus accident and injury rates between states cannot be done with existing data. As a result, there is no basis for comparing the safety of South Carolina's school bus system to systems in other states.

- SDE has not adequately monitored its school bus inspection program. We reviewed inspections performed at three bus shops during FY 99-00 and found that only 191 (68%) of the 280 required 6-week inspections had been performed. Also, only 32 (80%) of the 40 annual inspections had been performed.

- School bus drivers in South Carolina are required to undergo random drug and alcohol testing and possess a valid commercial driver's license (CDL). In a limited review of three school districts, we found that one district had not conducted random drug testing between October 1999 and September 2000.

- We found that SDE could improve its performance measures that relate to quality of service. For example, data on average ride times, morning pick-up times, and tardiness are not compiled or reported by SDE. If SDE were to report this data, parents, students, and administrators would be better able to assess school transportation services.

Introduction

Audit Objectives

Members of the General Assembly requested that we conduct an audit of South Carolina's school bus operations. The requesters were primarily concerned about the cost of operations, timeliness of service, and safety.

Based on this request, we reviewed:

- The cost of the school bus system.
- The safety of the school bus system.
- The service provided to students.

We also reviewed the status of recommendations from our 1999 report on school bus purchasing.

Scope and Methodology

The period covered during this audit was primarily 1998 through 2000. Our sources of evidence included:

- Relevant South Carolina laws and regulations, including the governing statutes for student transportation.
- State transportation policies and procedures.
- Transcripts of meetings of SDE's specifications committee.
- Inventories of school buses maintained by SDE.
- SDE financial reports.

In addition, we interviewed officials with SDE and various school districts. We also interviewed and obtained information from transportation officials in other states. We used limited non-statistical samples as indicated in the audit. In cases where we relied on SDE's computerized data, we performed a limited review of management controls over the data. This audit was conducted in accordance with generally accepted government auditing standards.

Background

The South Carolina school transportation system is the fifth largest consolidated bus fleet in the United States. Only private contractors operate larger fleets of school buses under one management structure. South Carolina is the only state in the United States where the state owns and maintains the entire school bus fleet.

SDE owns, purchases, and makes necessary repairs to school buses. SDE operates 44 school bus maintenance shops supervised by county supervisors. There is also a central rebuild facility in Richland County. More than 400 employees work at the shops.

State-funded transportation is provided to eligible, public school students to and from school on regular route buses and special needs buses. SDE shares responsibilities for student transportation with the 86 school districts. The school districts establish bus routes and also recruit, employ, and supervise the more than 5,000 school bus drivers.

Salaries and benefits for bus drivers are funded both by contributions from school districts and flow-through money from SDE. Many districts also supplement driving hours with other duties such as janitorial or food service jobs in order to enable drivers to earn full benefits. State-owned school buses may be used by school districts for "activity" trips, such as band competitions and field trips, but the school districts must reimburse SDE at a cost of 80¢ per mile and pay the driver's salary. In addition, school districts purchase and operate their own activity buses.

Two of the 86 school districts contract with private providers. According to SDE officials, beginning with the FY 95-96 school year, student transportation services in the Beaufort County School District were provided through a contract. In 1997, Charleston County began contracting its school bus transportation services. These contractors establish routes and hire and supervise bus drivers. They primarily use buses that are owned and maintained by SDE.

Fleet Statistics

As of July 2000, the state=s fleet included 5,008 route buses and 580 spare buses. The fleet consists primarily of three types of buses:

Conventional — These are school buses with a hooded engine located in front of the windshield. They comprise about 62% of SDE=s fleet.

Transit — These are flat-nosed school buses with an engine located behind the windshield, either at the front or the rear of the bus. They comprise 38% of SDE=s fleet.

Type A — This is the smallest type of bus in SDE=s fleet. There are only three type A buses in SDE=s fleet.

Table 1.1 shows the number of buses by type.

Table 1.1: Composition of SDE's Bus Fleet – July 2000

TYPE OF BUS	NUMBER OF BUSES
A	3
Conventional	3,464
Transit	2,121
TOTAL	**5,588**

Source: SDE Office of Transportation.

Buses transport both "regular route passengers" and "special needs passengers." A total of 4,661 buses are used for regular route passengers and 927 are for special needs passengers. Most of the state's buses for special needs passengers can accommodate wheelchairs.

According to SDE, there are approximately 17,000 daily bus routes. SDE defines each one-way trip of a bus as a route. A bus with a morning and afternoon route is considered to have two routes.

During FY 99-00, South Carolina school buses traveled 73,885,023 miles. In FY 98-99, school buses transported an average of 319,482 public school students each day. We estimated the state's operating expenditures for student transportation (including both state and local funds) at approximately $111.9 million (see p. 5). There were no bus purchases during FY 98-99.

Chapter 1
Introduction

Transportation Costs

We reviewed the cost of the state's school bus transportation system. In 1999, we reported that SDE had purchased buses with high cost specifications. SDE stated that we had not considered operational costs when examining these specifications and that South Carolina had ". . . the lowest per pupil transportation costs in the country."

In our current review, we found a significant difference between the cost per student as defined by SDE and the actual cost per student. We also found that comparisons of school bus transportation costs between states are not possible due to the lack of uniformity in the data. In addition, we found that SDE has made progress in addressing the recommendations on bus specifications and replacement cycle contained in our 1999 report on school bus purchasing. We also reviewed efforts to increase the wages of school bus drivers and SDE mechanics.

Cost of Bus System

One of our objectives was to determine the cost of S.C.'s school bus transportation system. School transportation expenditures consist of all costs associated with transporting students to and from public schools during the 180-day school year. It also includes the cost of providing transportation for students to attend mid-day programs such as kindergarten and vocational programs. Both state- and district-level expenditures were used to calculate total costs. We included maintenance costs incurred by SDE when districts use state-owned buses.

S.C. school transportation expenditures for FY 98-99 were estimated at $111.9 million.

S.C. school transportation expenditures for FY 98-99 were estimated at $111.9 million, as shown in Table 2.1. This was the most recent year for which both state- and district-level expenditures were available. SDE did not purchase school buses during this period.

SDE spent approximately $73 million (65%) of the state's total cost for school transportation in FY 98-99. Salaries and benefits accounted for about 70% of SDE's cost. This includes $36.6 million for school district bus drivers and $14.8 million for state transportation employees such as school bus maintenance shop employees and state transportation administrative staff. SDE also spent $1.4 million for workers' compensation insurance for bus drivers.

Table 2.1: Transportation Expenditures – FY 98-99

EXPENDITURES	FY 98-99* (IN MILLIONS)	
State Department of Education		
Bus Driver Salaries & Benefits	$36.6	
Other Operating Expenditures	20.1	
SDE Salaries & Benefits	14.8	
Workers' Compensation	1.4	
Total State Department of Education	$72.9	(65%)
School Districts	39.0	(35%)
TOTAL Operating Expenditures	**$111.9**	**(100%)**

* No school buses were purchased during this year.

Source: SDE Office of Finance.

Other operating expenditures include operating costs for the state administrative office and all of the bus maintenance shops. They consist of:

- Parts/tires.
- Fuel/motor fluids.
- Liability insurance.
- Utilities.
- Shop equipment, supplies, and tools.
- Office equipment and supplies.
- Employee travel.

Our calculations did not include indirect costs incurred by other divisions of SDE.

School district expenditures consisted primarily of salaries and benefits, purchased services, and supplies. They accounted for 35% of the cost of the state's school transportation system. This includes salaries for district bus transportation staff as well as district contributions for bus driver salaries. Allocations school districts receive from SDE for bus driver salaries were reported in SDE's expenditures only. We also did not include expenditures for maintaining and operating district-owned automobiles and buses.

Calculation of Cost Per Student

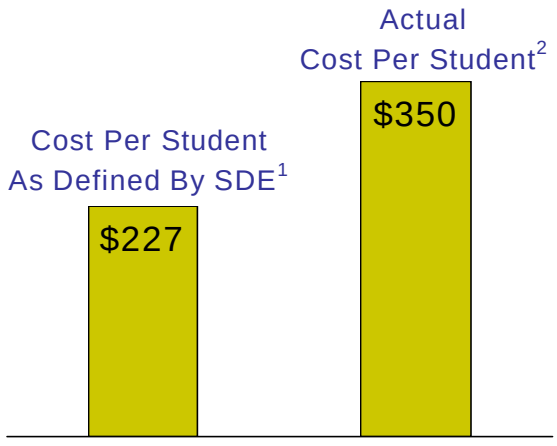
According to SDE, cost per student should be used to measure the efficiency of the state's school bus transportation system. We found that SDE defines cost per student as the average number of trips per day divided into school transportation operating expenditures. This is not the actual cost per student.

SDE considers a student riding the school bus one-way as one trip. Thus, a student riding to school and back home again is considered two trips. In FY 98-99, SDE reported that the average number of trips taken each school day was 492,179. We estimate that school transportation operating expenditures for FY 98-99 were approximately $111.9 million. When dividing these expenditures by the average number of trips taken each day, the cost is $227. This amount is *not* a true calculation of the cost per student.

There is a significant difference between the cost per student as defined by SDE and the actual cost per student. Actual cost per student is based on a count of students and not a count of trips. Thus, a student riding to school and back home again is counted as one student.

The average number of students transported daily in S.C. in FY 98-99 was 319,482. Dividing this number into school transportation operating expenditures results in a cost per student of $350 — a difference of $123 or 54% (see Figure 2.2). SDE's use of a count of trips instead of a count of students to calculate cost per student makes their cost appear low. It is important to note that no buses were purchased during FY 98-99, therefore; these calculations did not include the cost of the buses or depreciation. Including these costs would result in a higher cost per student.

Figure 2.2: FY 98-99 Cost Per Student Calculations



1 Transportation operating expenditures of $111.9 million divided by 492,179 trips.
2 Transportation operating expenditures of $111.9 million divided by 319,482 students.

Inconsistent Data Reported by SDE

We found that S.C. has been inconsistent in reporting the number of students transported. For example, in its FY 97-98 accountability report to the Governor and the General Assembly, SDE stated that 535,000 "students were provided transportation each day to and from school." However, data reported to and published by a magazine called *School Transportation News* for the same period states there were 371,507 "students transported at public expense." Table 2.3 lists some of the sources and the totals SDE reported for the number of students transported for FY 97-98.

Table 2.3: Number of Students Reported by SDE – FY 97-98

Source	Number of Students Reported by SDE
SDE Accountability Report	535,000
School Bus Fleet	492,000
School Transportation News	371,507
Data provided to LAC	334,919

Source: SDE, School Bus Fleet, and School Transportation News.

Differences in these numbers can be partly attributed to the fact that SDE sometimes reports the number of trips instead of students (see p. 7). Reporting inaccurate data can prevent legislators and other policymakers from adequately assessing the performance of the state's bus transportation system. Variances in data reported by SDE make it difficult to compare South Carolina school transportation costs with those of other states. There may also be variances in data reported by other states.

Recommendation

1. When calculating transportation cost per student, the State Department of Education should use a count of students, instead of student trips.

Interstate Cost Comparisons

We found that SDE used unreliable data when stating that South Carolina had the lowest per pupil transportation costs. National school transportation data lacks uniformity, thereby preventing meaningful interstate comparisons. Not only do states calculate the cost per student differently, but the types of costs included in their expenditures also vary.

We contacted eight states about their methodology for collecting and reporting school transportation data. Most of the states we contacted use a count of students, instead of trips, for calculating the cost per student. In this case, each student is counted only once per day, regardless of the number of trips taken. None of the eight states we contacted use South Carolina's method of counting each student every time the student boards the bus.

Although most of the eight states use a count of students for calculating the cost per student, there were differences in their methods for counting students.

- In Alabama the student count is partially duplicated because it includes students transported to mid-day programs, who may also ride the bus to and from school.

- In three states (Alabama, Florida, and North Carolina), an average of actual students counted on school buses during a specific period in the school year is used.

- In three states (Tennessee, Mississippi, and Kentucky), the student count information is obtained from school attendance and finance records, instead of counting students on the buses. This method counts students who are eligible for transportation and may include students who do not actually ride the bus. Therefore, the number reported may be overstated, consequently understating the cost per student.

Types of Costs Included in Expenditures

In addition to the different methods for counting students, other states include different types of costs when calculating the cost per student. For example, other states treat school bus purchases differently:

- Five of the states (Alabama, Florida, Mississippi, North Carolina, and Virginia) do not include school bus purchases.

- Two of the states (Georgia and Tennessee) include school bus purchases.

- Kentucky does not include school bus purchases in its expenditures, but the cost of school bus depreciation is included.

S.C. has not included bus purchases or depreciation when calculating the cost per student. South Carolina has purchased buses which are more expensive than those purchased in other states (see p. 11). Excluding the cost of capital may understate the per student cost. Examples of other costs that vary among the states are:

- At least two states (Florida and Virginia) include the cost of summer school.
- Three states (Florida, Tennessee, and Virginia) include the cost of activity trips.
- None of the eight states include state administrative office expenses.

For 1998-99, we estimated South Carolina's state administrative office expenses at over $1.2 million. S.C. includes workers' compensation insurance which was approximately $1.4 million in FY 98-99. Also, according to SDE officials, S.C. expenditures include the maintenance costs associated with summer school and activity trips.

National School Bus Transportation Data

National school bus transportation data is compiled and published by different sources within the pupil transportation industry. This data covers various aspects of school bus transportation including costs, fleet characteristics, and safety. Most of this data is compiled from self-reported information provided by the states through annual surveys. The survey instruments we reviewed did not clearly define each cost variable. Therefore, interpretation of some survey questions may vary. As a result, school bus transportation data reported by states is limited in its usefulness for state-to-state comparisons.

School bus transportation officials in other states indicated that they do not use national school bus transportation data for cost comparison purposes. Some noted that the unique characteristics of each state's accounting system limit the reliability of cost comparisons. An official with Virginia's Department of Education states that district-to-district comparisons within the state are more useful for evaluating cost efficiency. In addition, best practices developed to evaluate school transportation in Florida recommend that districts establish cost-comparison benchmarks based on standards from similar school districts in the state.

Until the quality of data is improved, cost comparisons between states are not valid.

Representatives of the school bus transportation industry recognize that, at present, there is no statistically reliable national school bus transportation database available. According to a National Association for Pupil Transportation (NAPT) official, terms in the surveys used for collecting data are not standard or clearly defined. NAPT is currently involved in an effort to improve the quality of school bus transportation data available.

Conclusion

We were unable to verify that SDE had the lowest per pupil transportation cost in the nation. An SDE official acknowledged that school bus transportation data reported by states is not comparable. Until the quality of data is improved, cost comparisons between states are not valid.

SDE officials have noted that it is important to consider the total cost of operating its bus system when assessing efficiency, not just the purchase price of buses. However, SDE has not calculated its costs or the number of students transported in a manner consistent with other states (see p. 9). As a result, it is questionable whether South Carolina's costs are low in comparison with costs in other states.

Recommendation

2. The State Department of Education should discontinue making interstate cost comparisons unless the data used is accurate and consistent.

School Bus Purchasing

In 1999, we issued a report with recommendations to improve South Carolina's system for purchasing school buses. We noted that the State Department of Education had been purchasing buses with higher cost specifications than those selected by other states and communities. In addition, we noted that South Carolina had no formal school bus replacement cycle. Below we describe the progress SDE has made in this area.

Specifications

In 1999, we recommended that SDE reevaluate its specifications for school buses, suggesting that higher cost school bus specifications be used only when their benefits and cost-effectiveness can be documented. SDE officials stated that our 1999 report was not published in time to allow for significant review of the specifications of buses purchased in 2000. Table 2.4 contains a summary of the school buses purchased for South Carolina school districts in 2000. Also in the table is a summary of the school buses purchased by other states and communities.

South Carolina purchased buses that cost significantly more than those purchased by other states and communities. For a 78-passenger bus: South Carolina paid $71,876; Roanoke County, Virginia paid $54,638; and North Carolina paid $65,340. For a 66-passenger bus: South Carolina paid $72,651; North Carolina paid $47,562; and Fulton County, Georgia paid $49,872.

Table 2.4: Examples of School Bus Prices in 2000

Bus Type and Capacity	Unit Price	Horse Power	Number Purchased	State Contract	Replacement Cycle
South Carolina					
78-Passenger Rear-Engine Transit	$71,876	250	51	Yes	20 years / 200,000 miles*
66-Passenger Rear-Engine Transit	$72,651	250	100	Yes	20 years / 200,000 miles*
15-Passenger Special Needs Conventional	$69,927	250	50	Yes	15 years / 150,000 miles*
North Carolina					
78-Passenger Rear-Engine Transit	$65,340	210	8	Yes	20 years / 200,000 miles
66-Passenger Conventional	$47,562	190	826	Yes	20 years / 200,000 miles
44-Passenger Special Needs Conventional	$51,329	190	48	Yes	20 years / 200,000 miles
Fulton County, Georgia					
84-Passenger Front-Engine Transit	$64,465	210	4	No	16 years
72-Passenger Conventional	$50,508	190	42	No	12 years
66-Passenger Conventional	$49,872	190	22	No	12 years
48-Passenger Conventional	$49,656	190	6	No	12 years
19-Passenger Special Needs Conventional	$54,649	190	4	No	12 years
Nashville, Tennessee					
84-Passenger Front-Engine Transit	$62,087	225	20	No	15 years
47-Passenger Special Needs Front-Engine Transit	$68,209	205	5	No	15 years
39-Passenger Special Needs Front-Engine Transit	$65,768	190	5	No	15 years
Roanoke County, Virginia					
78-Passenger Front-Engine Transit	$54,638	190	2	No	12 years
64-Passenger Conventional	$50,065	190	3	No	12 years

*SDE's anticipated replacement cycle for buses purchased in FY 00-01 as reported in its FY 00-01 budget request.

Source: SDE and education officials in NC, GA, TN and VA.

The states and communities listed have varying specifications and replacement cycles. In addition, some states have state contracts and some do not.

SDE hired a consultant to reevaluate its bus specifications in early 2000. In September of that year, SDE's specifications committee began conducting a series of meetings. The specifications committee was comprised of SDE staff, school district staff, legislators, business people, and college faculty. The recommendations of the specifications committee included lower horsepower engines, less stringent frame strength requirements, and other changes. SDE reports that it intends to implement the committee's recommendations.

Replacement Cycle

In 1999, we also recommended that SDE establish a formal school bus replacement schedule and that the General Assembly use a formal replacement schedule for funding the replacement of buses.

SDE's specification committee has recommended implementation of a 15-year / 200,000 – 300,000 mile replacement schedule. The General Assembly, however, has not established a formal replacement schedule for funding the purchase of buses. When a regular replacement schedule is not funded, there is reduced assurance that the buses can be operated in a safe and reliable manner.

Conclusion

SDE staff expects lower bus prices to result from revised specifications. The precise effect will not be known until later this year when bids are received. We reviewed only a small part of the state's educational expenditures. Therefore, we did not determine whether implementation of a formal replacement schedule can be financed with existing education resources or whether there is a need for additional funding.

Recommendation

3. The General Assembly should consider using a formal replacement schedule for appropriating funds on an annual basis to replace school buses. To fund this program, the General Assembly should consider whether existing education resources are sufficient or whether there is a need for additional funding.

Mechanic and Bus Driver Wages

We reviewed recent efforts by the State Department of Education (SDE) to increase the wages of school bus mechanics and school bus drivers. In April 2000, a private consultant hired by SDE reported that these workers were underpaid, when their wages were compared with wages paid by other state agencies and other employers, and that the turnover rate is high.

More than 400 SDE bus shop staff work at 45 bus maintenance shops throughout the state. Local school districts employ more than 5,000 school bus drivers, whose wages are funded primarily by the state, with additional funding provided by the districts.

Bus Mechanics

In April 2000, this consultant determined that SDE's bus mechanics were underpaid. For example, the department had more than 250 Automobile Maintenance Technician II employees who earned an average of $22,384 per year. This amount was $3,045 (12%) less than comparable employees at the South Carolina Department of Transportation and $10,785 (33%) less than comparable workers statewide.

The consultant concluded:

> Based on SDE personnel data, recent annual turnover rates have been 34% for shop mechanics, and 18% for both shop supervisors and clerical support positions . . . [L]ow pay has been the dominant factor in the lack of success in retaining the technical talent needed for these critical shop maintenance operations.

The consultant recommended a pay increase of 10.2%, costing more than $900,000 per year. State government has begun to address the issue of underpaid bus mechanics. In July 2000, with approval from the General Assembly, SDE awarded "3% special salary adjustments" for bus mechanics and related positions. In its FY 01-02 budget request, SDE requested about $1.2 million to increase mechanics' wages and hire two additional mechanics.

Bus Drivers

Also in April 2000, the same consultant determined that school bus drivers, who are employed by local school districts, were underpaid. The firm found that the more than 5,000 school district drivers earned an average of $8.55 per hour. This amount was $1.73 (17%) per hour less than bus drivers employed by various state agencies and $3.83 (31%) less than bus drivers statewide.

The consultant cited an average annual turnover rate of 27%:

> . . . primarily due to low pay rates now being provided for this job. Other factors have also contributed to overall driver turnover, including the unavailability of fringe benefits, the lack of full-time employment, equipment and student discipline problems, and other related issues.

The consultant also noted:

> . . . the ability of the individual school districts to [compensate drivers] at reasonably competitive levels within their unique marketplace varies considerably from one school system to another, due to funding deficiencies.

Some school districts have been offering their bus drivers non-driving positions, such as classroom aides or cafeteria workers, during school hours to make bus driving positions more attractive. The consultant recommended a bus driver pay increase ranging from 13.1% to 45%, which would cost between $4.6 million and $15.9 million per year. In its FY 01-02 budget request, SDE requested approximately $21.4 million to increase bus drivers' wages.

Conclusion

Low wages can give the impression that an organization is efficient when compared to similar organizations that pay higher wages. However, when low wages for employees in safety-related jobs lead to excessive turnover and/or a limited pool of applicants, there is a potential for reduced safety.

We reviewed only the transportation component of the state's educational system. Therefore, we did not determine whether the additional funds needed are available from existing education resources or whether there is a need for additional funding. It is important to note that the department has begun to make changes that may reduce the purchase price of its school buses (see p. 13).

Recommendations

4. The State Department of Education and the General Assembly should ensure that bus mechanics are compensated at least equally to comparable positions in other state agencies.

5. The State Department of Education and the General Assembly, together with local school districts, should ensure that the districts' bus drivers are compensated at least equally to comparable positions in state agencies.

6. The General Assembly should consider whether these wage increases can be funded with existing education resources or whether there is a need for additional funding.

Safety and Service

In 1999, SDE reported that higher cost buses were necessary, in part, due to the increased level of safety they provide. We found that comparisons of safety statistics between states cannot be done with existing data. In addition, we found that SDE has not adequately monitored its school bus safety inspection program. We also found two areas of non-compliance related to school bus drivers. SDE also should consider establishing performance measures for assessing the quality of services it provides to students.

Interstate Comparison of School Bus Safety Statistics

There are no valid statistics available that can be used to compare school bus accident and injury rates between states.

SDE officials have noted that it is important to consider safety when developing bus specifications. According to the National Highway Transportation Safety Administration (NHTSA), school bus transportation is "one of the safest forms of transportation." NHTSA and other safety organizations state that conducting a statistically valid comparison of school bus accident and injury rates between states cannot be done with existing data. As a result, there is no basis for comparing the safety of South Carolina's school bus system, with its higher cost buses, to systems in other states.

School bus-related fatalities are significantly lower than fatalities involving passenger cars, light trucks, or vans. NHTSA reported that in the United States, from 1987 through 1996:

> The school bus *occupant* fatality rate of 0.2 fatalities per 100 million vehicle miles traveled (VMT) [was] much lower than the rates for passenger cars (1.5 per 100 million VMT) or light trucks and vans (1.3 per 100 million VMT). [Emphasis added.]

NHTSA also reported that:

> *Pedestrian* fatalities (while loading and unloading school buses) account for approximately three times as many school bus-related fatalities, when compared to school bus occupant fatalities. [Emphasis added.]

To determine the feasibility of interstate comparison of school bus transportation safety statistics, we contacted NHTSA, the National Transportation Safety Board (NTSB), and the National Safety Council (NSC). Each of these organizations reported that there are no valid statistics available that can be used to compare school bus accident and injury rates between states. One problem they report is that the definitions of an accident, an injury, and even a school bus, are not consistent from state to state. Furthermore, an official with NHTSA reported that, even if these definitional problems were resolved, interstate comparisons of school bus safety data are not likely to be statistically valid because accident and injury rates are very low across the nation.

School Bus Safety Inspections

The State Department of Education has not adequately monitored its school bus safety inspection program. We reviewed inspections performed at three bus shops during FY 99-00 and found that only 191 (68%) of the 280 required 6-week inspections had been performed. Also, only 32 (80%) of the 40 annual inspections had been performed.

SDE policy requires that each school bus must be inspected during each of seven six-week inspection periods. Each bus also receives an annual inspection. Each inspection period lasts approximately six weeks. Therefore, each school bus should be inspected at least eight times during any given fiscal year.

The mechanics check many different parts of each bus, including the brakes, transmission, and warning lights. It is important that inspections are conducted to ensure the safe operation of the buses.

We selected a limited sample of 40 buses at three bus shops in Greenwood, Kershaw, and Richland counties. We found that bus shops could not document some inspections (see Table 3.1).

Table 3.1: FY 99-00 Bus Inspection Results

COUNTY BUS SHOP	BUSES IN SAMPLE	6-WEEK INSPECTIONS PERFORMED	ANNUAL INSPECTIONS PERFORMED
Greenwood	15	105 / 105 (100%)	15 / 15 (100%)
Kershaw	15	85 / 105 (81%)	15 / 15 (100%)
Richland	10	1 / 70 (1%)	2 / 10 (20%)
TOTAL	**40**	**191 / 280 (68%)**	**32 / 40 (80%)**

Source: SDE Bus Shops.

SDE requires the 44 bus shops to file reports at the close of each six-week period indicating the number of six-week inspections completed. The Richland County bus shop had documentation for only 1 of 70 (1%) inspections. It reported completing 19% of the six-week inspections for FY 99-00. In addition, Richland had documentation for 2 (20%) of 10 annual inspections, but reported completing 89% for FY 99-00. According to an SDE official, agency auditors do not visit bus shops for the purpose of verifying that the shop records support the numbers reported on safety inspections.

Recommendation

7. The State Department of Education should ensure that school bus safety inspections are performed as required by SDE policy.

Bus Driver Qualifications

Among other requirements, school district bus drivers in South Carolina are required by state law to have a commercial driver's license (CDL). We found that SDE could improve its monitoring of school districts' compliance with commercial driver's license requirements.

South Carolina Regulation 43-80 (N) states that:

> . . . school districts shall have a substance abuse program for school bus drivers . . . . The substance abuse testing program shall comply with the U.S. Department of Transportation testing program for drivers of passenger vehicles.

It also states that:

> . . . prospective drivers must meet all the requirements for testing for the Commercial Driver's License. . . .

Under federal regulation 49 CFR 382.305, employers of drivers with commercial driver's licenses are required to randomly test each year at least 10% of drivers for alcohol and at least 50% of drivers for controlled substances.

Drug and Alcohol Testing

We conducted a limited review of random drug and alcohol testing data from three school districts (Beaufort County, Fairfield County, and Orangeburg 5) from October 1999 through September 2000. These districts employ approximately 300 bus drivers. We found that Beaufort and Fairfield counties had performed random drug tests on bus drivers. Orangeburg 5 reported that none of its drivers had undergone random drug or alcohol tests during the period we reviewed. SDE reports that it does not monitor the drug and alcohol testing programs of local school districts.

Commercial Driver's Licenses

We also conducted a limited review of the commercial driver's license credentials of 42 (14%) of 292 current bus drivers in the three districts (Beaufort, Fairfield, and Orangeburg 5). According to the Department of Public Safety, all the drivers we reviewed had current CDLs.

An SDE official reported that, until December 2000, the South Carolina Department of Public Safety checked the commercial driver's license status, including moving violations, of all school district bus drivers for SDE on a monthly basis. Since then, the Department of Public Safety has instituted a fee that will cost SDE significantly more to check the status of bus drivers' CDLs. SDE officials anticipate the possibility that fewer status checks will be made.

Recommendation

8. The South Carolina Department of Education should periodically check to ensure that school districts test bus drivers for drugs and alcohol.

Quality of Service

We found that SDE could improve its performance measures that relate to quality of service.

Performance Measures

In its *1999 – 2000 Annual Accountability Report*, SDE reports that it has become more efficient at transporting students. The department notes that, since 1996, the number of buses in its fleet has declined, the number of routes has increased, the number of students transported has increased, and the age of the fleet has increased. Also, the department reports fewer accidents per mile traveled.

With regard to quality of service, SDE reports the number of complaints successfully processed and percentage of trips completed without maintenance failure. Below are examples of additional performance measures that could provide a more complete description of service quality. Each of the measures could be reported separately for regular routes and special needs routes.

- **MORNING PICK-UP TIMES**
  This measure could be reported in intervals, such as the number and percentage of students picked up before 6:00 a.m., between 6:00 a.m. and 6:30 a.m., between 6:30 a.m and 7:00 a.m., etc.
- **LENGTH OF BUS RIDES**
  This measure could be reported in intervals, such as the number and percentage of students whose bus rides last less than 30 minutes, between 30 minutes and one hour, between one hour and 90 minutes, etc.
- **TARDINESS**
  This measure could be reported as the number and percentage of morning routes that are late to school.
- **MARKET SHARE**
  This measure could be reported as the number and percentage of eligible students who ride the bus to school.

Quality of service data might also reveal tradeoffs between efficiency and service.

SDE has guidelines addressing only one of the above measures. The department recommends A. . . one hour and fifteen minutes as a guide for a maximum riding time for [regular routes] except when unusual geographical conditions prohibit this.@ For special needs routes, SDE relies on the federal Office for Civil Rights to establish guidelines for determining the maximum riding time. Longer riding times for special needs routes are permitted only under certain circumstances.

If SDE were to compile and report additional quality of service data on a district-by-district and statewide basis, parents, students, and administrators would be better able to assess their school transportation systems. Quality of service data might also reveal tradeoffs between efficiency and service. For example, the use of larger buses permits the use of fewer buses and drivers but may result in longer routes. Likewise, the use of buses on multiple routes permits the use of fewer buses and drivers but may result in more students being picked up in the dark.

Analysis of Routes in Three Districts

Annually, SDE requires each school district to submit a written description of each bus route, including the time of day each bus is expected to arrive at each bus stop. As an illustration of quality of service performance data, we conducted a limited analysis of 227 regular and 36 special needs morning bus routes reported by three districts (Calhoun, Florence 1, and Lexington 2) in 2000-2001.

Table 3.2 shows the percentage of morning routes on which at least one student was picked up before 6 a.m. and the percentage on which at least

one student rode for more than two hours. Regular routes and special needs routes are reported separately. In one district no regular routes exceeded two hours, while over 87% of the special needs routes had at least one student who rode longer than two hours.

It is important to note that additional review, including on-site visits, may be necessary to learn the circumstances of districts with data that indicate questionable performance. School districts have varying geography, population density, and resources.

Table 3.2: Percentage of First Stops Before 6 a.m. and Percentage of Routes Over Two Hours in 2000-2001

District	First Stop Before 6 a.m.		Route > 2 Hours	
	Regular Routes	Special Needs Routes	Regular Routes	Special Needs Routes
Calhoun	15%	0%	0%	0%
Florence 1	1%	33%	0%	87%
Lexington 2	0%	13%	0%	25%

Source: SDE Bus Route Descriptions.

Conclusion

Additional measures for assessing the quality of services would have to be defined by SDE and local school districts to ensure that relevant data are collected and reported consistently from district-to-district and year-to-year.

In addition, the compiling and reporting of this data may increase the administrative costs of SDE and local school districts. Establishing measures with this issue in mind, through a joint state and local effort, could minimize the additional workload. It is important to note that not developing performance measures can also result in higher organizational costs when decisions are based on incomplete information.

Recommendations

9. The State Department of Education, together with local school districts, should develop additional performance measures for assessing the quality of school transportation services. Attention should be given to minimizing administrative costs.

10. Each year, the department should compile quality of service data on a district-by-district and statewide basis, for regular routes and special needs routes. This data should be published in the department's annual accountability report.

Agency Comments

Appendix
Agency Comments

STATE OF SOUTH CAROLINA
DEPARTMENT OF EDUCATION

INEZ MOORE TENENBAUM
STATE SUPERINTENDENT OF EDUCATION

April 19, 2001

George L. Schroeder, Director
Legislative Audit Council
3131 Elmwood Avenue, Suite 315
Columbia, South Carolina 29201

Dear Mr. Schroeder:

Thank you for the opportunity to respond to provide our final comments to the Legislative Audit Council's audit report: *A Review of South Carolina School Bus Operations.* I am including the report on disk and a hard copy for your convenience.

We look forward to working with the South Carolina General Assembly and the Materials Management Office to implement some of the recommendations.

Very truly yours,

Inez Tenenbaum

Inez M. Tenenbaum
State Superintendent of Education

IMT/dnt
Enclosures

South Carolina Department of Education's Response to the Legislative Audit Council's Report *A Review of South Carolina School Bus Operations*

The South Carolina Department of Education appreciates the opportunity to respond to the Legislative Audit Council's (LAC) report, *A Review of South Carolina School Bus Operations*. The agency welcomes any suggestions to improve our state's school bus transportation system, and we are pleased that the LAC finds the Department's school bus operations to be in compliance with state law.

LAC Recommendations

The Department makes the following responses to the LAC's findings and recommendations.

> *The Department disagrees with LAC recommendation #1 and recommends that the State continue to collect and report Peak Student Ride Demand, Total Student Rides, and Students Transported at State Expense.*

Calculation of Cost Per Student. The primary goal of calculating a "cost per student" is to accurately reflect the demand on student transportation services and also to measure the costs of meeting that demand. The Department does not agree with the LAC's definition of what data should be collected on student ridership. The LAC recommends using "a count of students, instead of student trips." The LAC audit defines a "count of students" as the unduplicated number of students who are transported by school buses on average each day. Unduplicated means that a student bus rider is counted once each day.

Based on the survey conducted by the Department and our knowledge of the school transportation industry, no state collects these types of data. There are good reasons for this, the most obvious being that unduplicated student counts have little, if any, management value.

What is needed to manage an efficient transportation system is an accurate picture of peak demand of ridership and the total number of student trips that must be provided each day. The peak demand tells how many buses and drivers are needed at any one time, and the total number of student trips identifies how many times the bus must be used with students on board (miles and hours of service). The fact that Johnny or Sue rides the bus on a given day (unduplicated count of students) does not help the Education Department understand what services it must provide or how much these services will cost. To properly manage student transportation services, the Department must know how many times Johnny or Sue rides each day, when they need to be transported, and how much time and distance those trips will require. These facts determine the cost to the State and district for operating the student transportation system.

Peak Student Ride Demand is the most important data collected by the Department. This data shows the Department how many students are scheduled to ride school buses during the same general time frame on a given day in South Carolina. The Peak Student Ride Demand is presented in two ways: the Scheduled Peak Student Ride Demand and the Average Peak Student Ride Demand. The Scheduled Peak Student Ride Demand is the number of students who have

reserved school bus seats during each general time frame of a school day—morning, midday, or afternoon. The Average Peak Student Ride Demand is the average daily ridership for each school bus route for the morning, midday, and afternoon time periods. The time frame that requires the greatest demand is selected to represent the greatest demand for the school day; this could be the trip from home-to-school or from school-to-home. These data help determine the maximum number of buses that are needed during any school day, district by district and statewide. The State is required not only to transport the average rider demand but also to meet the maximum demand.

Total Student Rides is the second most important type of data. These data show the Department how many total student rides are provided each day by school bus. The Total Student Rides data show the total productivity a school bus generates each school day and how efficient the school bus route is (students delivered per route mile). These data let us know how many different times Johnny or Sue is transported each day.

The third level of data, Students Transported at State Expense, counts students who ride a school bus plus all other students whose transportation is funded by the State. This count includes all data presented in the Total Student Rides Data and the Peak Student Ride Demand and adds all students transported by any means other than a school bus. For example, it includes students who are scheduled to ride and the average ridership on the state school boat (Sandy Island), as well as the number of students transported under special contract each day. Contract transportation is used to deliver a very specialized type of transportation for students with disabilities or for students who are geographically isolated.

These data generate the true cost per student transported. The State Department of Education has made great strides in improving data collection and has been very consistent with its data reporting in the past two years. The Department questions why the LAC did not use cost data reported for these two most recent fiscal years.

The Department agrees with LAC recommendation #2.

Interstate Cost Comparisons. The Department acknowledges that the definitions of terms used in the school transportation field are very confusing. The Department also agrees that nationally published data on school transportation ridership and cost are not comparable. The Department conducted its own survey of states in December 2000 and determined that data on state-by-state student ridership and cost are incompatible. Prior to this survey, the Department was not aware how incompatible the data were. Once we gained a better understanding of the problem, the Department started working with the National Association for Pupil Transportation and the National Association of State Directors of Pupil Transportation Services to develop a data collection program that will create comparable national school transportation data. The University of North Carolina at Charlotte is managing this data collection project under a grant from the National Highway Traffic Safety Administration.

The Department agrees with LAC recommendation #3.

School Bus Purchasing. The Department has followed earlier LAC recommendations presented in the 1999 report, *A Review of South Carolina School Bus Purchases*, as well as subsequent instructions from the General Assembly. Bus prices ultimately are determined by the specifications set by the purchaser. During the past year, the Department has worked closely with the General Assembly, private industry, and school bus manufacturers to develop a new set of school bus specifications that match South Carolina's needs and comply with the recommended fifteen-year replacement cycle. The Budget and Control Board, Office of Materials Management, is now bidding the specifications. An additional point to make is this: a statewide replacement cycle would generate substantial annual purchases of buses, as it does in North Carolina. The Education Department thus believes that committing to a replacement cycle would generate additional cost savings when purchasing new buses.

The Department agrees with LAC recommendations #4 and #5. The Department agrees with LAC recommendation #6 with an assurance to the General Assembly that funding is not available within the Department to fund the additional salaries needed.

Mechanic and Bus Driver Wages. The LAC report factually presents the Department's concerns and the Department's recent requests to the General Assembly.

The Department agrees with LAC recommendation #7.

School Bus Safety Inspections. The Department operates school bus inspection programs that provide two different types of inspections. The Department's Six-Week Inspection is a school bus inspection that is performed seven times per year. This inspection can be performed on a school bus while the bus is at the maintenance shop or in the school parking lot. The Department's Annual Inspection is a school bus inspection that must be performed at the maintenance shop. This inspection is a very thorough process that includes servicing and/or checks of various drivetrain and braking system components. One of the Six-Week Inspections is performed in conjunction with the Annual Inspection; therefore, the Department conducts a total of seven inspections per year per school bus.

Every six weeks, the Department receives a report from each of the 44 bus shops that summarizes the inspections performed at that shop. The Department audits the summary reports through a random review of individual vehicle records maintained at each shop and through follow-up, hands-on inspections.

The LAC's report reviewed inspection records at three of the state's 44 bus shops: Greenwood, Kershaw, and Richland. The Greenwood shop's inspection records indicated 100 percent compliance, the LAC said. In Kershaw County, the LAC found that some records were not on file although local shop personnel said all inspections had been completed. A follow-up review by the State Department of Education found that documentation for 20 vehicle inspections was missing.

Of the 89 missing six-week inspection records that created the LAC's overall compliance percentage, 69 were in the Richland shop. All of the missing annual inspection records cited by the LAC were in the Richland shop. The Department was aware of problems with the inspection programs at the Richland shop prior to the LAC's review because of the Department's ongoing review of inspection summary reports that indicated that the Richland shop was not in compliance with Department policies. Months before the LAC began this audit, the Department initiated a plan of action with the administrative and technical personnel at the Richland shop to bring their inspection programs into compliance. Since implementing our compliance plan, the following shop staff have resigned their positions at the Richland shop or were terminated: county supervisor, shop foreman, shop clerk, and five of the eight maintenance technicians (73 percent of all the shop's total staff). The Richland shop is now in full compliance with the Department's inspection programs.

State Department of Education summary reports from South Carolina's 44 bus shops show that school buses are being inspected according to agency standards. However, the LAC's audit has produced evidence of a possible clerical problem with the proper filing and storage of inspection records. Accordingly, the Department will immediately begin an internal review of vehicle maintenance and inspection records to determine how improvements can be made.

The lack of an annual replacement cycle for school buses in South Carolina has resulted in an aging state bus fleet, and these older vehicles make a rigorous inspection program absolutely vital. The Department's policy is that bus inspections take precedence over all other shop activities, even bus repair. That means that if one bus breaks down and needs repair and another bus is due for inspection, the inspection is done first. The Department is committed to safe bus operations.

The Department agrees with LAC recommendation #8.

Driver Qualifications/Drug and Alcohol Testing. Under state and federal law, all school bus drivers in South Carolina are required to participate in a drug and alcohol testing program. The testing of drivers is not directly funded by the State; this expense is paid for by the local school districts. In response to the finding of the LAC, the Department proposes to establish a compliance review process as part of each school district's annual financial audit. This review will require that the school district's auditor confirm the district's compliance with state and federal drug and alcohol testing requirements.

Driver Qualifications/Commercial Driver's Licenses. The LAC's review documents that out of the three districts surveyed, 100 percent of the drivers held a current and valid commercial driver's license.

Several years ago, the Department developed a program especially designed to assure the public that all school bus drivers are properly licensed. The Department performs monthly school bus driver record checks through the Department of Public Safety's database of current holders of a South Carolina commercial driver's license. This check provides the Department with a list, by school district, of all school bus driver records with violations posted during the past month. This information is forwarded to the local school districts' transportation officials, along with

instructions that the school districts conduct a more in-depth investigation of those school bus drivers whose names appear on the list of violators. The Department also provides, at no cost to the school districts, a direct computer link to the DPS to check individual driver's license records. The districts take the information from the monthly school bus drivers' check and check the detail of each driver's violations. This detailed check is necessary because not all violations reported are related to the operation of a vehicle. Violations can be posted for failure to pay vehicle property taxes, failure to provide proof of insurance coverage, and so forth. Access to the drivers' record checks also provide a means for districts to monitor the status of commercial driver's licenses on a continuing basis and to determine the suitability of an individual for employment as a school bus driver.

On December 18, 2000, the DPS increased fees for conducting all driver license checks. As a result, the Department experienced an annual cost increase exceeding $100,000. The Department is reviewing the driver's license monitoring program to determine if cost-saving adjustments are practical. The Department is facing the possibility that monthly checks may be reduced to periodic checks (three times a year) that would be held at the beginning of school, mid-year, and near the end of the year. Even with this limited monitoring, the Department will incur a cost increase of at least $60,000.

In addition to the Department record-check program, federal law mandates that an "operator of a commercial motor vehicle, who is convicted of violating, in any type of motor vehicle, a State or local law relating to motor vehicle traffic control (other than a parking violation), shall notify his/her current employer of such conviction within 30 days after the date of conviction."

The Department agrees with the LAC recommendations #9 and #10.

Quality of Service. The LAC has recommended four performance measures for school districts to collect and report to the Department. The Department is to compile this data into a report and publish it annually. While this data may be valuable, it is also subject to numerous variables and is not a dependable indicator of quality service delivery.

As part of the review of performance measures, the LAC conducted on-site visits to evaluate bus routes that pick up a student before 6 a.m. and bus routes that have students who ride more than two hours. The Department agrees with neither the LAC's generalization of the data they collected nor the method of presentation. The Department believes some of the stops listed before 6 a.m. are actually students who board the bus before 6 a.m. because they are the children of the bus driver. The Department knows that some students board the bus before 6 a.m. at the request of the parent, allowing the parent to leave home for work. The Department also acknowledges that just because a route is over two hours long does not mean that a student rides the bus for two hours. The Department contacted each school district for which these evaluation data were published. Each of these districts was allowed to review the text of the report that directly related to the them and was encouraged to respond. Florence Public School District One and the Calhoun County School District submitted written responses that are attached to the Department's response.

Conclusion

The safe transportation of children to and from school is the State Department of Education's primary concern, and the Department is committed to a quality program that uses available resources in the most efficient manner possible. We look forward to implementing many of the recommendations of the LAC and to continuing to provide the best student transportation system in the United States.

Florence Public School District One

Department of Transportation
1810 East National Cemetery Road : Florence, South Carolina 29506
Telephone: (843) 673-1118 Fax: (843) 673-1194

April 17, 2001

Mr. George Schroeder
Director of Legislative Audit Counsel
1331 Elmwood Ave.
Suit 313
Columbia, SC 29201

Dear Mr. Schroeder,

The following is the response from Florence School District One in reference to the routing review of South Carolina bus operations conducted by the Legislative Audit Counsel for the 2000/2001 school term.

According to the report presented by the Legislative Audit report, Florence School District One was sited for having 33% of special needs routes starting before 6:00AM and 87% of special needs routes with students riding longer than 2 hours. Below is an account in percentage according to my calculations.

According to the start and end time of the routes for drivers we have 14 out of 16 routes that began before 6:00AM. This would show an 87% rate of routes starting before 6:00AM. However, this time does not reflect the actual ride time for students. We run elementary routes and high school routes.

At the time the original route descriptions were submitted, we were transporting 341 students. Of the 341 students, we show 11 that were being picked up before 6:00am. The time range for these students are indicated on the route descriptions from 5:45am – 5:58am. This would be 3% of students who were being picked up before 6:00am. Of the 11 being picked up before 6:00am, only 8 were on the bus longer than 2 hours. This would be only 2% of students with a ride time over two hours. Of the 8 students who were on the bus longer than two hours, two of these students had a longer ride time due the fact that they live on the far end of the district.

We are in the process of doing amended route descriptions that will reflect the changes in pick up and ride time for students. However, the start and end time for total route time for drivers will still be longer than two hours.

Should you have any further questions, please do not hesitate to call me at (843) 673-1118.

Sincerely yours,

Cindy Lyles
Coordinator of Transportation

CALHOUN COUNTY PUBLIC SCHOOLS
OFFICE OF TRANSPORTATION

MEMO

TO: Doug Hamrick
FROM: Zam Fredrick, Director of Transportation
DATE: March 26, 2001
RE: Transportation Audit

In response to the transportation audit, I hereby confirm that I have at least four routes that pick-up before 6:00 a.m. These students are children of bus drivers who board at the driver's home. Thank you.