School Transportation in Minnesota

An Examination of District-Operated and Contract-Operated Programs

Minnesota Taxpayers Association

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About the Minnesota Taxpayers Association

The Minnesota Taxpayers Association was founded in 1926 for the purpose of disseminating factual information that will educate and inform all Minnesotans about Minnesota tax and spending policies. For over seventy-five years, the Association has advocated for the adoption of sound fiscal policies through its research efforts, publications, and meetings.

The Association is a non-profit, non-partisan group supported by membership dues. For information about membership, call (651) 224-7477, or visit our web site at www.mntax.org.

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I. Executive Summary

Introduction

Minnesota's school districts, like those in many other states, have the flexibility to contract with private companies to provide transportation services. Many factors – both qualitative and quantitative – must be evaluated carefully by decision-makers in determining whether contractor sourcing makes sense. A cornerstone of any comparative evaluation is an examination of the cost difference between in-house and contracted service delivery. However, cost comparisons that focus exclusively on current operating expenditures and fail to include relevant capital and related costs are incomplete. Attempts to compare transportation cost structures across different districts are further complicated by the introduction of transportation cost factors that differ among districts and are outside of their control.

To facilitate a more complete cost assessment, the Minnesota School Bus Operators Association (an association of private companies providing transportation services to school districts) funded this study, which has three parts:

1. **Methodology employed:** a discussion of relevant issues pertaining to data sources, data limitations and related issues

2. **Analysis of cost differences:** compares district and contractor costs related to school transportation.

3. **Effects of changes in transportation strategy:** compares the trends in school transportation costs between fiscal years 1997 and 2007 for districts which made major changes to their transportation strategies, either moving from mostly district-provided transportation to mostly contractor-provided transportation or vice versa.

Methodology

MTA requested district-specific school transportation expense data for individual transportation finance cost elements from Minnesota Department of Education staff for FY 2005 through FY 2007.[1] We also retrieved the following district-specific data from the Minnesota Department of Education's website:

- Total route mileage for contractor-operated and district-operated routes for FY2007
- Vehicle depreciation costs (for district fleets) for FY 2007
- Aggregate transportation expenditures for FY 1997 through FY 2007

We surveyed school transportation contractors regarding their school transportation-related costs for the 2006-07 fiscal year to account for district transportation-related capital and debt service expenses that are not reported in a separate fashion.[2]

Limitations

This study has two important limitations, which are as follows:

[1] The UFARS reporting system does not segregate transportation-specific capital costs; including facility debt and vehicle service, facility depreciation, and other storage and parking costs not otherwise classified.
[2] In cases where businesses operate on a calendar year basis, we collected data for the 2007 calendar year.

1. **Inability to measure relative efficiency.** The study cannot measure how efficiently districts allocate their transportation dollars, since this would require additional information, such as the number of hours each bus is operated, rides per hour, and alternative costs under different transportation providers, which is not immediately available. It may be that higher-cost districts are operating as efficiently as possible, and that lower-cost districts could in fact save money with greater efficiency – but the available data does not permit us to test this hypothesis.

2. **Inability to account for uncontrollable cost factors.** Our review of the literature indicated that there are various cost factors outside of a district's control that can significantly impact transportation costs. These include (but are not limited to): district sparsity, special education, desegregation busing, unique geographical or topographical features (rivers, lakes, rough terrain, etc.), and open enrollment. Since reliable, centralized data on district size and student population was readily available, we are including an examination of the effect of district sparsity on transportation costs. To examine the effects of other uncontrollable factors on transportation costs, we would need to perform route-level analyses. While resource constraints prevent us from pursuing the effects of these other factors, we recognize their importance and advocate for their further study.

Analysis

Cost Comparison

This study analyzes detailed FY 2007 school district transportation expense data. To account for unavailable district transportation-related capital and debt service expenses and facilitate a fair comparison between district-provided and contracted services, we obtained 2007 cost data for 41 private contractors, representing an estimated 45% to 50% of the state's total contract school bus fleet. We reduced school spending on contracted services by 6.07%, based on that data. We also adjusted expense data to account for district personnel having responsibilities that include both contract and in-house operations. Our analysis of this adjusted data[3] found that:

- Schools paid $6.07 per mile for in-house transportation costs and $5.75 per mile to contractors for their transportation costs.
- Sparsity has a noticeable effect on transportation cost differentials. We calculated the students-per-square mile for each district in the analysis, and then created a "sparsity index by dividing the average students-per-square mile of the dataset (7.524) by each district's students-per square mile. This created a sparsity index with a range of 0.0134 for Edina[4] to 34.219 for Grygla[5]. As the index is constructed; the higher the sparsity index score, the more sparse is the district. Contractors had significantly lower per-mile costs in the 246 districts where the sparsity index was 4.0 or below. Contractors had slightly lower costs in the 78 districts with a sparsity index above 4.0.

[3] Beginning with FY 2006, school districts were given the option of reporting student transportation hours or routes instead of total mileage. 19 school districts reported routes or hours for FY 2007, which presents obvious comparability issues. We contacted these districts and were able to obtain mileage information for three of them. Therefore, this data set excludes 16 school districts, which comprised 8.0% of the state's total student population and 9.4% of statewide school transportation spending in FY 2007.

[4] Calculated as 7.524 students-per-square-mile ÷ 563.485 students-per-square-mile

[5] Calculated as 7.524 students-per-square-mile ÷ 0.220 students-per-square-mile

Effects of Transportation Strategy Changes

- This study analyzed the effects of transportation strategy changes for schools that changed from providing mostly in-house transportation in FY 1997 (contracting out 5% or less of all route mileage) to providing mostly contactor-only transportation (contracting out 95% or more of all mileage) in FY 2007, or vice versa. The Bloomington school district moved from contractor-only to in-house transportation in FY 2000; the Chisago Lakes school district moved from in-house to contractor-only transportation in FY 2003.[6] An analysis of their transportation costs and the changes over that period indicates that in both cases, contract-provided transportation resulted in lower year-to-year cost increases vis-à-vis all districts than when the districts provided their own transportation services.

Conclusions

- **Existing studies claiming cost advantages that fail to account for capital costs must be interpreted with extreme caution**. Contract transportation providers reported that their costs for the capital expenditures for which no school-district data is available represented approximately 6% of their total student transportation costs. Given the size of this potential cost mismatch, the omission of capital costs will significantly distort any cost analysis that claims competitive advantage.

- **Sparsity appears to have a major influence on the economics of transportation sourcing decisions.** When controlling for issues of sparsity we found that as districts school populations become denser, cost structures tended to favor contracted transportation services. Similarly, as sparsity increased, cost structures tended to become more favorable for in-house services.

- **Minnesota school districts appear to do a good job of examining cost structures in evaluating decisions regarding purchased or district-provided transportation services**. For districts with sparsity indices greater than 4.0, 76.9% used all or nearly all in-house services and 11.5% used all or nearly all contracted services, a finding we might expect given our cost analysis findings. Likewise for districts with greater student densities (sparsity indices less than 4.0) 50.4% used all or nearly all contracted services and 35.0% used all or nearly all in-house services, again quite consistent with cost analysis findings.

  The economics of transportation sourcing decisions would be best illuminated by studying "before and after" effects of major transportation sourcing changes by districts since many other exogenous variables affecting transportation costs within a district are essentially controlled for. However, only two districts in the ten years study period "switched" from over 95% of in-house to contracting or vice versa and provided enough time-series data for valid analysis. In this extremely limited sample, a switch from in-house to contracted services demonstrated no change in per pupil transportation cost growth rates compared to the years of in-house services or relative to per pupil growth rates of all districts. However, the sole case of a strategic decision to bring formerly contracted services in house demonstrated cost per pupil transportation cost growth rates exceeding both earlier contracted years and state averages over the same time period.

[6] Three other school districts (Mabel-Canton, Lakeview, and Minneota) also made similar changes in transportation strategy; however, there is not enough "post-change" data from which to draw valid conclusions.

These findings together with our cost comparison analysis and the fact that only two districts in ten years have completely restructured transportation services suggests that current law provides school districts the flexibility they need to make transportation decisions in their best economic interests.

Recommendations

In view of our research, MTA recommends:

That school districts report separately depreciation and debt service costs related to transportation facilities and vehicles. This information would allow for more accurate cost comparisons between district-provided and contract-provided transportation. While cost should not be the only factor in selecting transportation arrangements, taxpayers and policymakers should have access to complete and accurate information as to what the different costs are.

That information on contract transportation vehicles be more accurate and detailed. School districts report transportation vehicle inventories to the Minnesota Department of Education. There are two improvements that could be made to this report.

- First, districts could report separately the number of contract vehicles provided by other public entities, parents or guardians, and private contractors.
- Second, districts could report vehicles by plate number so that vehicles that serve multiple districts are not counted multiple times in a summary.

Making these changes would allow for more accurate and detailed contract transportation vehicle counts, which would in turn allow for more accurate analyses.

That the state require uniform allocation of school transportation costs. Current law allows schools to allocate transportation costs based on routes, miles, or hours. However, this lack of uniformity makes it impossible to draw meaningful comparisons of transportation costs between all school districts in Minnesota. Making this change would allow taxpayers to easily make cost comparisons between their own and other school districts.

More research be done to determine the effects of other important uncontrollable cost variables. District sparsity will affect all routes run within a school district. However, there are a number of other important uncontrollable cost factors that affect individual routes; including but not limited to: open enrollment, desegregation busing, special education, topography, and any unique geographical factors. More work should be done to identify their impact on district-provided and contractor-provided transportation costs.

II. Introduction

According to the Minnesota Department of Education, over 830,000 students attended public schools in 2007-2008 – and the vast majority utilized district transportation services in some form. Districts are obligated by law to provide transportation services to students living two miles or more from the school which they attend[7]. Schools also provide transportation services to students who must move between buildings or who are participating in school-sanctioned events (field trips, athletic events, et cetera).

Minnesota's school districts, like those in many other states, have the flexibility to contract with private companies to provide transportation services. Many factors – both qualitative and quantitative – must be evaluated carefully by decision-makers in determining whether contractor sourcing makes sense. A cornerstone of any comparative evaluation is an examination of the cost difference between in-house and contracted service delivery.

Cost comparison studies typically focus on marginal cost analysis – comparisons of direct operating expenses which provide a picture of the anticipated short term differences in public expenditures. However, such studies often have two inherent analytical weaknesses.

First, marginal cost pricing fails to incorporate facility, capital equipment and other fixed cost issues into the analysis. The inclusion of these costs transforms marginal cost pricing into fully allocated average cost pricing. Fully allocated average cost pricing may distort potential expenditure changes in the short term since an organization may not be able to reduce its overhead and fixed assets immediately. However, it is the best indicator of relative operating efficiency between public and private contractors in the long term.

Second, the cost of providing transportation services are influenced by cost factors outside of government control. This issue becomes problematic if cost comparison studies involve multiple government entities and organizations. Interdistrict comparisons can be influenced by sparsity issues, special education demands, desegregation busing, and even unique geographical or topographical features. Failure to account for these cost factor differentials can result in apples-to-oranges comparisons.

Given these issues, the Minnesota School Bus Operators Association (MSBOA) asked the Minnesota Taxpayers Association to conduct an independent analysis to facilitate a more complete cost comparison of district-provided and contractor-provided school transportation.

[7] Minnesota Statutes § 123B.88, Subd. 1.

III. Methodology

Student Transportation Costs and Vehicle Depreciation Costs

The Department of Education[8] provided MTA with school transportation expense data for fiscal years 2005, 2006, and 2007 from the state's Uniform Financial Account and Reporting Standards (UFARS) accounting and reporting system. The Department provided district-specific expenditures in the transportation-related finance dimensions (711-739) in school operating funds (General Fund, Food Service Fund, and Community Service Fund); and the expenditures were reported by object code. A list of the object codes provided to MTA follows this report as Appendix A. Object code 360 (Transportation Contracts With Private or Public Carriers) provides the starting point for calculating private contractor transportation expenses.

The Department's Program Finance Division provides district-specific data regarding bus depreciation costs (for districts only) on the transportation portion of its website[9]. MTA gathered data for the 2006-07 school year and added it to the transportation cost dataset.

Transportation finance data available through the Minnesota Department of Education does not include facility-related depreciation or debt service costs. Such costs are not reported separately, but are instead included in the totals for the Building Construction and Debt Service Funds. Vehicle depreciation costs are reported, but separately from other detailed transportation finance data, and no information on any debt service is available.

Relative Mileage Data

The Program Finance Division also provides district-specific data on student transportation mileage for districts and contractors. We gathered this data for the 2006-07 school year and the 1996-97 school year; and classified districts into one of three categories[10]:

- (A) districts providing all or nearly all transportation services (95% of miles or more) themselves;
- (B) districts contracting out all or nearly all transportation services (95% of miles or more) to private contractors; and,
- (C) districts providing some transportation services themselves while contracting out the remainder (i.e. districts not qualifying for either of the two previous categories).

Data Limitations and Adjustments

Our cost and mileage data is substantially limited as follows:

Missing District Capital Costs

The price contractors charge school districts for transportation services includes the costs related to all facets of their operation. However, the UFARS system does not allow interested parties to recover certain transportation-related capital costs for districts; including facility[11]

[8] From this point forward, all references to the "Department of Education" or the "Department" refer to the Minnesota Department of Education, unless otherwise specified.
[9] http://www.education.state.mn.us/MDE/Accountability_Programs/Program_Finance/Transportation/index.html
[10] In some cases, district report "hours" or "routes" rather than mileage. For these purposes, this distinction is not important.
[11] Both land and building.

debt service, vehicle debt service[12], facility depreciation, and other storage and parking costs not otherwise classified.[13] We were unable to obtain this information through other methods. Any study that does not account for this differential will understate district transportation costs.

The largest source of error in the dataset involved the missing district capital cost data. Ideally, these unavailable capital costs could be determined and added to district transportation costs. Since we were unable to obtain this information, we account for the missing data by reducing the costs reported in object code 360 by an appropriate amount.

To determine this "appropriate amount", we surveyed for-profit student transportation contractors regarding their costs for the 2006-07 year. MSBOA provided a list of private contractors, although we are not certain that the list is comprehensive of all private student transportation contractors in the state. MTA received data from 41 companies, which we estimate owned between 45% and 50% of Minnesota's contract school bus fleet during the 2006-07 fiscal year[14]. Based on the survey returns, we estimate that 6.07% of total contractor spending is in the areas for which we have no district data, and so we reduced the costs reported in object code 360 accordingly.

We did not utilize statistical sampling methods in administering this survey. The most prevalent type of bias associated with a survey that does not use statistical sampling methods is self-selection bias – a condition where certain characteristics lead people (or in this case, companies) to self-select themselves into a group. In this survey, self-selection bias would most likely occur if only those contractors with favorable costs returned the surveys, leaving out those contractors with higher costs and therefore artificially depressing our findings regarding contractor costs. Given that our survey data includes 45% to 50% of the contract bus fleet, and therefore likely also 45% to 50% of the contractor costs for 2006-07, our survey results are probably not affected by self-selection bias.

Non-Carrier Costs

Object code 360 accurately states the amount school districts spend on contract transportation. However, these expenditure figures include more than just the amounts spent on contracts with carriers. They also include:

- costs for transportation contracts with other public entities, such as schools or transit services;
- costs for bus passes for pupils who use public transit services.

It is not immediately clear whether these costs exceed a *de minimus* amount. If so, then any study that does not account for these costs will overstate total private contractor charges to school districts for transportation services. According to Department of Education staff, the Department does not collect vendor-level data through the UFARS system, nor does the Department differentiate between the different contract in other UFARS dimensions.

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[12] The $91.411.14 in statewide debt service spending reported in district operating funds for FY 2007 cannot reflect actual transportation-related debt service costs. Most transportation-related debt service spending likely occurs through the Debt Service funds, where transportation-specific expenses cannot be identified.

[13] This is because these expenses are run through non-operating school funds (the Building Construction Fund and the Debt Service Fund), and reported costs are not linked to finance dimensions.

[14] Estimate based on Minnesota Department of Education *Pupil Transportation Data* for 2006-07 and on Minnesota Department of Public Safety motor vehicle registration data for 2007.

Mileage data

Contractor-owned and district-owned mileage figures also suffer from a similar problem. When districts report contractor-owned mileage, they do not distinguish between mileage owned by private contractors, mileage owned by parents or guardians transporting their children to school under contract, and mileage owned by other public entities transporting children under contract. We cannot ascertain how large the share of contractor-owned mileage is that is not owned by private contractors, although we believe that it is quite small.

Not all districts report transportation mileage data – by law districts may instead report the number of routes or number of hours. For the 2006-07 school year, 19 districts reported hour or route data. Three of these districts provided mileage data upon request. However, 16 districts comprising 8.0% of Minnesota's K-12 students in FY 2007 and 9.4% of statewide transportation spending in FY 2007 reported routes or hours instead of mileage, and so have been excluded from the quantitative analysis; although they are included in the trend analysis as earlier referenced in Footnote 10.

Selection of Per Mile Costs as Comparative Statistic

We compare costs on a cost-per-mile basis. Ideally, we would also measure costs on a per-bus basis or on a per-hour-of-bus-operation basis, since the cost drivers underlying pupil transportation are most closely associated with the amount of time a bus is operated. Unfortunately, there is no reliable statewide data on the number of contractor buses or total hours that pupil transportation vehicles operate, nor any methodologically sound way to derive this from existing data.

Some literature regarding school transportation expenditures measures costs on a cost-per-pupil basis. We would also provide this perspective, except that there (again) is no comprehensive, reliable district-level data on how many students are transported by district buses and how many are transported by contractor buses. This leaves the cost-per-mile basis as the best remaining option.

The major limitation associated with a cost-per-mile analysis (or a cost-per-student analysis) is that it is difficult to make comparisons without accounting for factors such as sparsity. For example, in Saint Paul buses can run up to three different routes per day, easily translating into 150 student round-trips in one day over a relatively small area. Contrast that with a sparse district such as South Koochiching, where one bus may travel hundreds of miles in a single day to deliver only 40 or 50 student round trips.

There are potential drawbacks to this analytical method:

- The method assumes that there are no significant overall differences between the routes operated by contractors and the routes operated by districts in-house. However, if a district which provides both contract-operated and district-operated transportation services assigns the most costly routes to one party and the least costly routes to the other party, then one side will have a district cost advantage vis-à-vis the other. We cannot determine the extent of this practice, or even if it happens at all.

- While the reported costs-per-mile are factually correct, there are various factors that affect efficiency that the methodology does not control for. Our review of the literature indicated that there are various cost factors outside of a district's control that can

significantly impact transportation costs. These include (but are not limited to): district sparsity, special education, desegregation busing, unique geographical or topographical features (rivers, lakes, rough terrain, etc.), and open enrollment. Since reliable, centralized data on district size and student population was readily available, we are including an examination of the effect of district sparsity on transportation costs. To examine the effects of other uncontrollable factors on transportation costs, we would need to perform route-level analyses. While resource constraints prevent us from pursuing the effects of these other factors, we recognize their importance and advocate for further study regarding these factors.

Further Analytical Limitations

This study does measure actual FY 2007 costs on a per-mile basis, and attempts to measure the difference between district and contractor spending on student transportation. What this analysis does not and cannot do is to measure how efficiently districts allocate their transportation dollars, since this would require the information required to perform "but-for" tests; namely, what district transportation costs would have been had different providers been used.

IV. Analysis and Interpretation

The findings of this study are reported in two main areas:

- Regarding differences in student transportation costs for FY 2007 by provider type; and,
- Regarding the effects of school decisions to make major transportation strategy changes between FY 1997 and 2007.

Cost Analysis – Fiscal Year 2007

The Department of Education provided district-specific UFARS data on school transportation spending by object code. MTA added vehicle depreciation information found elsewhere. However, this dataset does not capture the following district transportation cost components:

- Facility depreciation
- Vehicle or facility debt service
- Storage/parking costs (not otherwise classified)

Table 1 presents district-provided transportation costs on a per-mile basis in some detail. Personnel costs (salary and wages and employee benefits) comprise over 60% of spending on district-operated fleets. Nearly 11% of expenditures are for fuels; and combined expenses for depreciation and for pupil transportation vehicle claim another 14%.

Table 1: District-Provided Transportation Costs, Per-Mile Basis, FY 2007

Cost Component	FY 07 Transportation Costs	
	Total	Per Mile
Salary and wages	$94,000,978	$2.90
Employee benefits	$27,252,034	$0.84
Fuels	$21,226,829	$0.66
Depreciation expense#	$15,423,674	$0.48
Pupil transportation vehicles	$12,070,347	$0.37
Miscellaneous purchased services	$6,879,888	$0.21
Supplies and materials	$6,823,991	$0.21
Repairs and maintenance services	$4,383,860	$0.14
Insurance	$3,906,325	$0.12
Operating leases and rentals	$2,591,555	$0.08
Miscellaneous capital expenditures	$729,608	$0.02
Miscellaneous travel	$521,014	$0.02
Bus and technology equipment	$340,425	$0.01
Other vehicles	$243,406	$0.01
Other expenditures	$201,782	$0.01
Debt service	$7,897	<$0.01
Total Per-Mile Cost	**$196,603,614**	**$6.07**

 # 12.5% of regular inventory and 20% of Type III inventory.
Calculations based on 32,379,010 district miles.
Includes 324 districts with 92.0% of students and 90.6% of transportation spending.
Sources: Minnesota Dept of Ed, calculations by MTA.

Table 2 presents contractor-provided transportation costs on a per-mile basis. As discussed previously, we reduced total contracted services costs by 6.07% to account for non-reported district costs. Our findings indicate that schools spend 5.3% less on a per-mile basis contract-provided transportation than for district-provided transportation.

Table 2: Contract-Provided Transportation Costs, Per-Mile Basis FY 2007

Cost Component	FY 07 Transportation Costs	
	Total	Per Mile
District spending on contracted transportation services*	$257,399,603	$6.12
Reduction for unavailable district transportation-related capital and debt service expenses (6.07%)	$15,616,815	$0.37
Total per-mile cost	**$241,782,788**	**$5.75**
*** Reported district transportation spending in object code 360.** **# 12.5% of regular inventory and 20% of Type III inventory.** **Calculations based on 42,065,554 contractor miles.** **Includes 324 districts with 92.0% of students and 90.6% of transportation spending.** ***Sources: Minnesota Dept of Ed and survey of MSBOA members, calculations by MTA.***		

Note that this is not our preferred analytical method. It would be far preferable to include all district capital and debt service costs in the district costs in Table 1. Since that data is unavailable, we have instead reduced contractor costs accordingly.

To determine whether differences in district sparsity affect the differential between district and contractor costs for school transportation, we computed the number of pupils per square mile for the 324 districts in this analysis. We then divided the average pupils per square mile for this set (7.524) by each individual district's pupils per square mile by to create a "sparsity index" (the sparser the district, the higher the index). This created a sparsity index with a range of 0.0134 for Edina[15] to 34.219 for Grygla[16]. Finally, we grouped districts by sparsity index range.

Table 3 presents our results. Contractors had lower costs-per mile in each sparsity index group. On the whole, contractors had significantly lower costs-per-mile (70.0% to 80.7% of district costs) than did districts in the 246 districts where the sparsity index is 4.0 or below. Costs were more comparable (contractor costs were 88.4% to 92.2% of district costs) in the 78 districts where the sparsity was 4.0 or greater, but contractors still had lower costs-per-mile. Read another way, transportation contractors appear to have a distinct cost advantage in urban and suburban districts. Contractors and districts have more similar costs in rural, more-sparse districts, although contractors appear to have an overall advantage here as well.

Table 3: District Total Per-Mile Transportation Costs, In-House and Contractor Operations, by Sparsity Index Group, FY 2007

Sparsity Index	Total Districts	In-House Operations			Contractor Operations		
		Costs	Route Mileage	Cost per Mile	Total	Route Mileage	Cost per Mile
<1.0	**103**	$124,708,973	15,147,448	$8.23	$201,366,451	30,304,182	$6.64
1.0 – 2.0	**58**	$22,900,387	4,437,254	$5.16	$16,487,434	4,561,585	$3.61
2.0 – 3.0	**39**	$9,465,382	2,085,211	$4.54	$11,337,965	3,293,736	$3.44
3.0 – 4.0	**46**	$14,822,830	3,667,184	$4.04	$8,123,219	2,540,829	$3.20
4.0 – 5.0	**19**	$4,309,500	1,164,221	$3.70	$1,983,406	580,899	$3.41
5.0 – 7.0[17]	**29**	$10,200,661	2,615,444	$3.90	$1,573,539	454,744	$3.46
>7.0	**30**	$10,195,880	3,262,248	$3.13	$910,775	329,579	$2.76
Total	**324**	**$196,603,614**	**32,379,070**	**$6.07**	**$241,782,788**	**42,065,554**	**$5.75**
Sources: Minnesota Department of Ed and survey of MSBOA members; calculations by MTA.							

[15] Calculated as 7.524 students-per-square-mile ÷ 563.485 students-per-square-mile

[16] Calculated as 7.524 students-per-square-mile ÷ 0.220 students-per-square-mile

[17] A separate group was not created for districts with a sparsity index between 6.0 and 7.0 to prevent groups smaller than 15.

Trend Analysis

Districts can be placed into one of three categories when it comes to transportation services:

- (A) districts providing all or nearly all transportation services themselves[18];
- (B) districts contracting out all or nearly all transportation services to private contractors[19]; and,
- (C) districts providing some transportation services themselves while contracting out the remainder (i.e. those districts not qualifying for either of the two previous categories).

Five school districts switched between group (A) and group (B) between FY 1997 and FY 2007[20]:

- Bloomington (switched from contracting to in-house effective FY 2000)
- Chisago Lakes (switched from in-house to contracting effective FY 2003)
- Mabel-Canton (switched from in-house to contracting effective FY 2006)
- Lakeview (switched from in-house to contracting effective FY 2007)
- Minneota (switched from in-house to contracting effective FY 2007)

The switch dates for Mabel-Canton, Lakeview, and Minneota are unfortunate for purposes of this analysis. Since FY 2007 is the last year for which we have data, we cannot construct an "after" trend analysis for Lakeview and Minneota. We also simply do not have enough "after" data from Mabel-Canton to produce a useful trend analysis. Therefore, this "before and after" trend analysis will include only Bloomington and Chisago Lakes.

As Table 4 indicates, the increase in Bloomington's per-pupil school transportation costs between FY 1997 and FY 1999 (3.39%) essentially tracked the statewide total of 3.38%. After bringing the transportation services in-house, Bloomington's average 5.07% increase exceeds the statewide total, which has been 4.25%.

Table 4: Annualized Percent Change in Per-Pupil Transportation Costs, Bloomington School District and All Districts, FY 1997-FY 1999 and FY 2000-FY 2007

	Annualized Percent Change in Per-Pupil Transportation Costs	
	FY 1997-FY 1999	**FY 2000-FY 2007**
Bloomington	3.39%	5.07%
All Districts#	3.38%	4.25%
# Includes all 340 school districts. ***Source: Minnesota Dept of Ed, calculations by MTA.***		

As Table 5 indicates, the increase in Chisago Lakes' per-pupil school transportation costs during both periods was much larger than the statewide totals. However, the differential during the period of in-house transportation (FY 1997-FY 2002) was 4.29%, while the differential during the period of contracted transportation was somewhat smaller, at 3.91%.

[18] Defined in this study as those districts contracting out 5.0% or less of all student transportation mileage.
[19] Defined in this study as those districts contracting out 95.0% or more of all student transportation mileage.
[20] There were 18 fewer public school districts in Minnesota in fiscal year 2007 than in fiscal year 1997 (one district dissolved, 30 other districts were consolidated in 13 new districts). In order to make consistent comparisons across the time period, we reorganized fiscal year 1997 data to match the fiscal year 2007 school district configurations.

Table 5: Annualized Percent Change in Per-Pupil Transportation Costs, Chisago Lakes School District and All Districts, FY 1997-FY 2002 and FY 2003-FY 2007

	Annualized Percent Change in Per-Pupil Transportation Costs	
	FY 1997-FY 2002	**FY 2003-FY 2007**
Chisago Lakes	8.66%	8.40%
All Districts#	4.37%	4.49%
# Includes all 340 school districts. ***Source: Minnesota Department of Education, calculations by MTA.***		

V. Conclusions and Recommendations

This report has examined the issue of school transportation costs for contractor operations and district operations in Minnesota, and provides reasonable estimates of the per mile cost for each type of operation. Our conclusions are summarized below.

- **Existing studies claiming cost advantages that fail to account for capital costs must be interpreted with extreme caution**. Contract transportation providers reported that their costs for the capital expenditures for which no school-district data is available represented approximately 6% of their total student transportation costs. Given the size of this potential cost mismatch, the omission of capital costs will significantly distort any cost analysis that claims competitive advantage.

- **Sparsity appears to have a major influence on the economics of transportation sourcing decisions.** When controlling for issues of sparsity we found that as districts school populations become denser, cost structures tended to favor contracted transportation services. Similarly, as sparsity increased, cost structures tended to become more favorable for in-house services.

- **Minnesota school districts appear to do a good job of examining cost structures in evaluating decisions regarding purchased or district-provided transportation services**. For districts with sparsity indices greater than 4.0, 76.9% used all or nearly all in-house services and 11.5% used all or nearly all contracted services, a finding we might expect given our cost analysis findings. Likewise for districts with greater student densities (sparsity indices less than 4.0) 50.4% used all or nearly all contracted services and 35.0% used all or nearly all in-house services, again quite consistent with cost analysis findings.

  The economics of transportation sourcing decisions would be best illuminated by studying "before and after" effects of major transportation sourcing changes by districts since many other exogenous variables affecting transportation costs within a district are essentially controlled for. However, only two districts in the ten years study period "switched" from over 95% of in-house to contracting or vice versa and provided enough time-series data for valid analysis. In this extremely limited sample, a switch from in-house to contracted services demonstrated no change in per pupil transportation cost growth rates compared to the years of in-house services or relative to per pupil growth rates of all districts. However, the sole case of a strategic decision to bring formerly contracted services in-house demonstrated cost per pupil transportation cost growth rates exceeding both earlier contracted years and state averages over the same time period.

  These findings together with our cost comparison analysis and the fact that only two districts in ten years have completely restructured transportation services suggests that current law provides school districts the flexibility they need to make transportation decisions in their best economic interests.

Recommendations

This study does not make a blanket recommendation regarding the selection of district-provided or contract-provided transportation. Each school district's situation is unique, and cost should only be one factor in the decision of a school board in selecting its transportation arrangements.

In view of our research, MTA recommends:

That school districts report separately depreciation and debt service costs related to transportation facilities and vehicles. This information would allow for more accurate cost comparisons between district-provided and contract-provided transportation. While cost should not be the only factor in selecting transportation arrangements, taxpayers and policymakers should have access to complete and accurate information as to what the different costs are.

That information on contract transportation vehicles be more accurate and detailed. School districts report transportation vehicle inventories to the Minnesota Department of Education. There are two improvements that could be made to this report.

- First, districts could report separately the number of contract vehicles provided by other public entities, parents or guardians, and private contractors.
- Second, districts could report vehicles by plate number so that vehicles that serve multiple districts are not counted multiple times in a summary.

Making these changes would allow for more accurate and detailed contract transportation vehicle counts, which would in turn allow for more accurate analyses.

That the state require uniform allocation of school transportation costs. Current law allows schools to allocate transportation costs based on routes, miles, or hours. However, this lack of uniformity makes it impossible to draw meaningful comparisons of transportation costs between all school districts in Minnesota. Making this change would allow taxpayers to easily make cost comparisons between their own and other school districts.

More research be done to determine the effects of other important uncontrollable cost variables. District sparsity will affect all routes run within a school district. However, there are a number of other important uncontrollable cost factors that affect individual routes; including but not limited to: open enrollment, desegregation busing, special education, topography, and any unique geographical factors. More work should be done to identify their impact on district-provided and contractor-provided transportation costs.

VI. Appendix A: Object Codes

Object Codes, Department of Education School Transportation Expense Data

Code Number	Code Name
110-199	Salaries and Wages
200-299	Employee Benefits
340	Insurance
350	Repairs and Maintenance Services
360	Transportation Contracts with Private or Public Carriers
370	Operating Leases or Rentals
300-339; 381-399	Miscellaneous Purchased Services
366-369	Miscellaneous Travel
401	Supplies and Materials – Non-Instructional
430-433	Supplies and Materials – Instructional
440	Fuels
460-499	Miscellaneous Supplies and Materials
532	Bus Equipment – Purchased
548	Pupil Transportation Vehicles
550	Other Vehicles Purchased
555	Technology Equipment
510-531; 535-545; 580-599	Miscellaneous Capital Expenditures
700-799	Debt Service
800-899	Other Expenditures

Note: Other finance data reported as follows (reported under non-transportation finance dimensions):

State Supported Programs, Federal Program Aid rec'd through MDE & directly from Federal Sources, Child Nutrition with Transportation Contracts with Private or Public Carriers:

Funds 1-4, Finance Dimensions 000-710, Object Code 360

Special Education, State Placement, Levy Supported Programs, Career & Technical Education & School to Work with Transportation Contracts with Private or Public Carriers:

Funds 1-4, Finance Dimensions 740-999, Object Code 360

Note: Offsetting chargeback accounts not shown.