Report of the Citizens Transportation Committee of the Town of Concord

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Executive Summary

The Citizens Transportation Committee (CTC) was created by Article 4 of the April 24, 2012 Special Town Meeting. It was charged to "search diligently" for ways to keep the school transportation department in-house. Seven Concord citizens were appointed--4 by the Town Moderator, 3 by the School Committee The Committee has met approximately bi-weekly from May into October.

The Committee identified five major sub-topics: **Safety, Social Factors, Emergency Preparedness, Cost Analysis,** and **Site Selection.** Members of the Committee researched each of these areas and shared their findings with the Committee as a whole. This helped inform all members' research, as the topics intersect at times. The concept of "Level of Service" crossed multiple topic boundaries. This refers to the expectations the community has of the transportation department, including driver road courtesy, the distance a student must walk to get to their bus stop, and the responsiveness of the staff to student needs and issues.

Findings:

- Safety

Research into bus safety found that Concord/Concord-Carlisle's accident statistics are similar to neighboring towns. Also, state inspection records show that Concord/Concord-Carlisle's maintenance quality exceeds that of the contract bus service used in Sudbury and Fitchburg. Statistics on bus routes show that Concord/Concord-Carlisle's level of service exceeds that of Lincoln and Sudbury.

- Social Factors

With regard to social factors, CTC found that transportation department staff are considered part of the broader community. Concordians place a high value on loyalty and fairness to school employees. The committee also learned that the bus drivers act as an informal "neighborhood watch."

- Emergency Preparedness

With regard to emergency preparedness, CTC found that the transportation department is a part of the Town's Emergency Management plan and that Emergency use of Transportation assets is irregular and unpredictable.

- Site Selection

CTC found that the transportation infrastructure--building(s), fueling station, bus parking, etc., could be replicated (excluding land cost) for between $650,000 and $850,000. We also found that transportation departments work best when all the pieces of the infrastructure (bus parking, maintenance, fueling, etc) are in a single central location.

- Cost Analysis

CTC found that in-house operation of the school buses is less costly than outsourcing and that nationally, school systems that have outsourced transportation have seen a significant cost increase after the initial contract ends.

Recommendations:

The Committee makes the following recommendations:

1. The School Committees commit to keeping School Transportation in-house for a minimum of five years.
2. The best location for the School Transportation Department is its current location.
3. Maintain the current level of service.
4. Encourage bus ridership.

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Acknowledgements

The Committee is grateful to a large number of people, both within the Town and across the Commonwealth, for their input, advice, and data. Many people have helped and contributed to this process. In particular we would like to acknowledge the contributions of Wayne Busa, John Arena, the entire staff of bus drivers and mechanics, Town Manager Chris Whelan, Town Treasurer Tony Logalbo, Town Clerk Anita Tekle, Ruth Lauer, Bill Plummer and all the citizens who attended Committee meetings and hearings to provide feedback and input.

The Committee also acknowledges the untimely death of bus driver Gary Garafola. The response to Mr. Garafola's passing illustrates the inclusion of the bus drivers in the broader community far better than any report could.

Finally, the Committee wishes to acknowledge the contributions of Committee member Ray Bruttomesso. Ray was called to active duty as a military supply officer to be stationed in Kabul, Afghanistan, for the next 9 months. Although he was unable to complete his time with the Committee, his knowledge, interest in the subject, and basic humanity were of great value during this process.

Introduction

The Citizens Transportation Committee (CTC) was formed by vote of the Concord Special Town Meeting of April 24, 2012. It was charged to "search diligently for ways to maintain the existing school transportation department."[1] Although originally intended to have membership from both Concord and Carlisle, no Carlisle residents expressed interest in serving and thus all seven members of the committee came from Concord--four appointed by the Moderator and three by the School Committee.

The Committee met approximately biweekly from May to October and held two public hearings to receive input from the public at large. It invested, by a conservative estimate, more than 1200 person-hours of time on research into five broad areas: Safety, Social Factors, Emergency Preparedness, Cost Analysis, and Potential Sites. In researching and deliberating these areas, the committee identified a sixth area of interest that crosses many of the boundaries between the original five. That area is what we have called "level of service."

Level of service refers to a wide variety of factors that reflect how (and how well) the transportation department meets the needs of the community. It ranges from the distance a student has to walk to reach their bus stop, to the response the community expects when contacting the department, to the level of driver courtesy to other drivers. It is distinctly not measurable in total, but in many ways it is the thing that best describes the community's understanding and connection with the transportation department.

Consideration of how to keep school transportation in-house requires acknowledging certain fundamental truths. Regardless of who operates them, there will have to be school buses, and the buses will need to be bought. Those buses will need drivers, maintenance, and fueling, as well as a place to park. Drivers and mechanics will have to be paid, fuel will have to be purchased, and a parking lot will use space that some might wish to use in another way. Whether the schools operate the system or contracts it out to a private provider, these expenses will not go away, nor will they be smaller for a private contractor. The managers of a private contractor will have a responsibility to the owners or stockholders of the company to turn a profit.

This report has been written with certain assumptions in mind. Consonant with the Committee's charge, transportation will remain in-house. Proper evaluation of the choice between in-house and outsourced transportation requires explicit consideration of the intangible values of the community, rather than a focus solely on the budget.

Keeping school transportation in-house also requires thinking about a number of different questions. If the department remains in-house but cannot stay in its current location at the high school, where should it go? What will it cost to create a new departmental infrastructure? The further the buses are from where they are needed, the more expensive they will be to operate and the greater the chances for delays. Separating bus parking from maintenance would make routine maintenance more difficult to manage, creating an opportunity for mechanical issues to crop up and not immediately be addressed.

[1] See Appendix L for the full charge

Concord/Concord-Carlisle offer a higher level of service than is required by the Commonwealth. CTC's research shows that school systems which use a private bus company do not offer the same level of service as is offered in Concord/Concord-Carlisle.

Outsourcing may provide savings in some areas. For example, if the transportation service is switched to a private contractor, the Town would have no future post-employment obligations beyond those for persons who are already vested.[2] However, the actual cost avoidance would be small.

If the transportation staff are no longer employees of the town and regional school district, how will this affect the relationship of the transportation staff/drivers to the schools as a whole? The bus driver is usually the first and often the last contact a student has in the school day. Many students say that they have had the same bus driver throughout most of their schooling. How important is it that bus drivers consider themselves an integral part of the school system?

Many towns have outsourced transportation. In cases where towns have long standing relationships with a particular company, there can be a reasonable level of trust between the community and the drivers. This is dependent on a well-constructed bid between the provider and the town in which the services requested are clearly specified and enumerated.

Although we will need to put up with less than optimum conditions while construction of the high school is going on, the buses must continue to roll. Cooperation of the transportation staff during this difficult period will be very important.

The School Committees must give much more thought to these questions. No matter what course of action is ultimately taken, the public expects and deserves a full and open accounting of the choices being made, including consideration of non-financial factors.

[2] See "Personnel Benefits" in the cost analysis section for details about post-employment costs for current and past employees

History of School Transportation & How Our System Works

The history of Public education in Massachusetts started in 1647, when by act of the Bay Colony all settlements with fifty or more families were required to appoint a school master to teach reading and writing "to all children as shall resort to him". In the three and half centuries since, the curriculum as well as the structure of schools have undergone many changes. Communities have become larger, schools have become more consolidated. Families began to live further from the schools, and in 1869 Massachusetts enacted legislation allowing public funds to be used for transporting students to and from school. The first "school buses" were horse or ox drawn carts. Schools and school buses have both continued to evolve, but the need for students to get to school each day remains.

Concord has a three tier system with 3 elementary schools serving K-5; one middle school with two buildings serving grades 6-8; and one high school, grades 9- 12, which is regionalized with the town of Carlisle. There is also a fourth building, formerly an elementary school, which houses the administration and some early childhood classes. The two middle school buildings are approximately one mile apart on the same street, but all the other school buildings are widely separated from each other.

Two of the elementary schools are located near the centers of Concord and West Concord and thus a number of students live close enough to be able to walk to school. Concord-Carlisle High School is also close enough to more densely populated areas for a number of Concord students to walk, but Carlisle students obviously are too far to walk to school in Concord. Most students in both the Concord Public Schools and the Regional High School use, or are eligible to use, a bus to get to and from school, and to serve these students a large number of buses are required.

Prospective drivers are interviewed by the transportation department manager and given a road test. If they pass the road test, they interview with the Deputy Superintendent. Their driving record is checked, a CORI check is performed, and they must pass a physical exam. New drivers are given a six month trial period during which the transportation manager monitors their performance. If a driver ever fails to meet safety standards, they can be discharged. All drivers must pass an annual physical exam and are subject to random drug testing by law.[3]

Bus routes are first developed by a software package and then adjusted by hand to reflect specific local needs. These include changing or adding stops on a road that is too dangerous for students to walk along as well as modifying routes to account for known traffic issues. In making these changes, safety is the top priority. Because the transportation department makes safety its top priority, the radius within which students must walk to school is smaller in Concord than is mandated by the state.

Drivers are paid based on a contract that establishes steps ranging from $18.34 to $22.38 per hour. Regular drivers are guaranteed at least 25 paid hours weekly, which makes them eligible

[3] This paragraph, as well as the subsequent paragraphs on how the transportation department operates, are drawn primarily from Appendix G

for benefits. Full staffing includes 29 regular drivers and 4 “spare” drivers, who provide coverage for absent drivers. This limits unpredictable expenses and helps assure level of service. A regular driver is “on the clock” from 6:15-9:15 AM and then from 1:45-4:15 PM, which works out to 5.5 hours/day or 27.5 hours/week. On any given day, a driver might also drive a field trip, increasing their hours for that day. The first 8 hours are paid at the hourly rate, while the excess above 8 hours is paid the overtime rate. If a driver will be driving after regular school hours (as with an “away” sports event), a spare driver might take over the route for the afternoon. This creates no additional cost, as the spare driver is already being paid. The regular driver will be paid their regular hourly rate until 4:15, but any time after 4:15 is paid at the overtime rate.

Occasionally there will be so many buses needed for after school trips that the department will have to hire a private contractor (usually Dee). If this occurs, the private contractor will take the traveling students (normally an athletic team) to their destination, but a Concord/Concord-Carlisle bus will pick them up at the end. Dee charges a flat fee of $195.00 for this type of one-way “drop-off” service.

During the summer, the Recreation Department hires the transportation department to bring students to the Recreation Department camp. This has typically been charged at a rate between $40 and $42/hour. The Recreation Department investigated using a private contractor recently and found that it would likely cost at least 50% more.

At one point Concord used a private contractor to provide busing, but after a careful review of costs, Concord invested in its own bus system. This has proved to be a very satisfactory solution and periodic reviews by former school committees have indicated that although quality bus service is never cheap, it is more cost effective to be doing it ourselves rather than paying a service that would need to make a profit over and above the costs. Concord has been running its own buses for 58 years, possibly making it the oldest in-house system in the state.

Safety

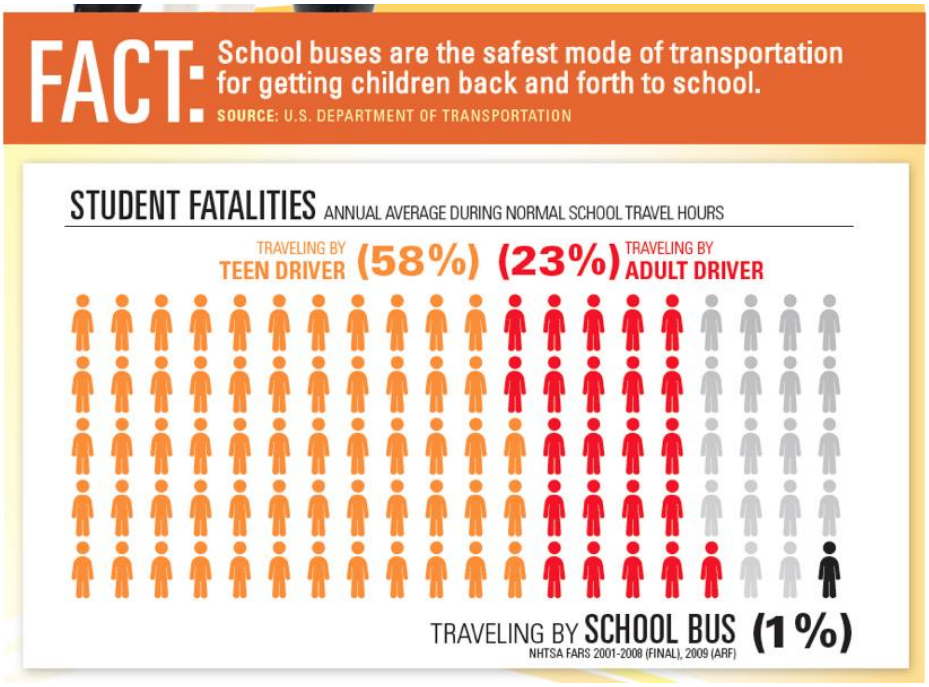
Summary of findings

The CTC charge required the committee to investigate the safety of the school transportation department as compared to private bus companies. Ultimately this developed into a consideration of a number of different facets of bus safety. These included the basic level of safety of school buses in general; the accident rates of our drivers and the drivers employed by private companies; the quality of maintenance, as reflected by state inspection reports; and the level of service provided by the transportation providers of different towns.

In summary, to and from school, a bus is safer than walking, biking or riding in a car. Massachusetts Registry of Motor Vehicle accident data from 2002-2010 shows that Concord/Concord-Carlisle bus drivers are as safe as those in neighboring towns. Mass DOT inspection reports show that our buses have only 20% the defect rate compared to the buses operated by First Student. Finally, Concord/Concord-Carlisle provides a higher level of service (more bus stops and routes) than Lincoln or Sudbury and without charging fees. Estimates are that about 70% of students ride our buses to school vs. 60% for Sudbury. This difference increases student safety while it reduces traffic congestion at the schools.

Background: The greatest fatality risk is riding to school in a car

The figure below, from a National Highway Traffic Safety Administration (NHTSA) shows school buses are the safest way to transport children to school. Not only is busing safer than riding in a car, it's safer than walking or riding a bicycle (the fatalities indicated in the gray area).



Teenage drivers are the least safe way to get to school.

School buses are safer than other modes because:

- A school bus is a large vehicle designed to keep children safe.
- School bus drivers are comprehensively trained and carefully licensed.
- Three times a year state inspectors go over the bus interior, exterior, chassis, and engine compartment. Failed items must be repaired.
- Before and after each trip the school bus driver safety-checks their bus[4].

Bus safety, in the broadest sense of the word, is continually improving. For example, the NTHSA and US Department of Transportation conduct bus crash tests as one aspect of their work to improve child safety. Drivers attend training on aspects of child behavior, defensive driving, and new vehicle capabilities to maintain their licenses. The Massachusetts Registry of Motor Vehicles updates its safety checklists for state bus inspectors and for bus drivers as needed to improve safety and respond to improved vehicle designs. These are just a few examples.

Introduction

The section measures the performance of Concord/Concord-Carlisle's in-house transportation department at providing safe busing, both in absolute terms and in comparison to departments in other towns using outside sources of data collected in an unbiased manner. This report therefore examines the following:

- Driver qualification, training, and preparation: These have an impact on a driver's ability to avoid accidents, work effectively with students, and improve safety. Professional drivers, properly trained and supported are the key to safe operations.
- Bus maintenance and specification: These reflect the physical condition and safety of buses.
- Accident statistics: These measure driver how well drivers have avoided collisions.
- Annual driver turnover: This addresses our ability to find and retain good drivers.
- Level of service: This encourages more students to take the bus and minimizes on-street walking to bus stops, both of which directly affect the safety of students off the bus.

A discussion of safety is incomplete unless it includes a child's experience riding the bus to and from school and a parent's confidence in their child's security while riding the bus. Safety is a broad topic.

Driver Qualification, Training, and Preparation

Qualification: Before a driver is hired, the transportation department reviews their experience and background, including a CORI check. All drivers in the department must pass annual CORI checks and random drug tests.

[4] For videos on how a driver checks a bus see:
http://www.youtube.com/watch?v=xmpR6kc4xQ0&feature=related
and
http://www.youtube.com/watch?v=63GmHRCFYoY&feature=fvwrel

Training: To retain their Massachusetts licenses, school bus drivers must attend at least eight hours of driver training annually. Concord/Concord-Carlisle provides more than the minimum training. Specialists in various topic areas conduct training sessions. For example, a safety specialist from the Federal Railway Administration conducts railroad safety training. School counselors provide training on bullying. Drivers are qualified in first aid and CPR.

Preparation: For each route, the department provides the drivers information about special needs of students on their routes, so the drivers are prepared to respond appropriately. Before the start of each school year, drivers review their routes and test-drive them to validate the schedules. These preparatory efforts reduce driver stress and improve safety.

The transportation department instructs children on safe bus behavior. Annually, drivers drill their riders on safe bus evacuations. Each fall Concord provides school bus orientation for Kindergarten students before school starts, so new school children can be familiar with a bus and know how to behave safely when riding.

The Concord/Concord-Carlisle drivers are assigned a specific bus. They keep that bus throughout the year. It becomes essentially 'their bus'. This policy encourages the driver to keep the bus spotless. Drivers wash and clean their buses inside and out. These factors help keep the buses clean and in good working order. Drivers work closely with maintenance people as needed to fix mechanical problems. Finally, before and after each trip drivers inspect their bus inside and out using a detailed checklist (a copy is provided in Appendix B). Drivers fill out this checklist for each trip. A driver can lose their license for driving a bus that fails the pre-trip inspection checklist.

Bus Maintenance[5]

Well-maintained buses provide safer and cleaner transportation for students. State inspectors check the physical condition of buses three times each school year, using a checklist covering 48 categories of items on the interior, exterior, chassis, brakes, and engine compartment[6]. We tallied copies of 1534 inspection records covering December 2008 to January 2012 to measure the physical condition of Concord/Concord-Carlisle's buses and First Student's buses in Sudbury and Fitchburg (procedure outlined in Appendix I). The results show problems with First Student's maintenance.

Most defects an inspector finds are fixed the same day, such as replacing a missing decal or freeing a sticking emergency door. An inspector will remove the bus's inspection sticker and apply an "Out-of-Service" (OOS) sticker for a more serious defect that makes the bus unfit for transporting students. Examples might be problems with the brakes or exhaust system. An OOS bus must be repaired and reinspected before it can again transport students.

Defects typically have been a problem on the bus for some time before the inspection. Proactive maintenance provided by conscientious drivers and mechanics keeps buses safer and cleaner by eliminating problems as they occur and not waiting for inspectors to point them out.

[5] This analysis extends an earlier analysis by Susan Kalled presented at the special town meeting in April 2012.
[6] See Appendix C for a copy of the checklist.

The results show Concord/Concord-Carlisle's drivers and mechanics are more proactive about bus maintenance than First Student's drivers and mechanics.

The condition of a bus affects the ability of the driver to operate it safely as well as the frame of mind of the students and student behavior while on board. A well maintained bus is more likely to have well-behaved riders and a driver who is in control.

The table below tallies: 1) the number of inspection sheets examined, 2) the number of buses inspectors took out of service (OOS), 3) the number of buses inspectors failed with one or more defects, 4) the total number of defects inspectors found, and 5) the most defects found on a bus. The final three columns show percentages versus the number of inspections.[7]

School Bus Inspection Results

Type C and D bus inspection	Inspections	Out of Service	Failed	Defects	Most Defects per bus	Out of Service%	Failed %	Defects %
Concord	361	4	47	81	4	1%	13%	22%
First Student Fitchburg	816	65	416	903	11	8%	51%	111%
First Student Sudbury	357	18	216	360	6	5%	61%	101%

State inspection records reveal Concord/Concord-Carlisle buses are in better shape than First Student's.

[7] Note that the Defects % column includes values greater than 100% because a single bus may have more than one defect.

Bus defects tend to rise with mileage and time, particularly if the bus is not well maintained. In tallying the above data we also recorded each bus's odometer reading when inspected. Here's the average for all inspections by town:

School Bus Ages

Town	Avg. odometer miles	Estimated age (years)*
Concord/Concord-Carlisle	58,849	7.06
Fitchburg	47,952	4.00
Sudbury	68,654	5.72

*This age is estimated from the odometer reading using the school administration's reported average miles/year for buses: about 12,000 for First Student and 8,333 for Concord/Concord-Carlisle. (Concord/Concord-Carlisle's bus depot is centrally located and the transportation department does not do extra charters.)

Concord/Concord-Carlisle's buses are in better shape because the transportation department is focused on providing safe, clean transport for school children, and the transportation staff works as a team to accomplish that goal.

Why do First Student's buses have so many more defects?

The Concord/Concord-Carlisle Transportation Director assigns each bus driver to a particular bus. It is their bus. The driver is invested in the condition of the bus. They are responsible for keeping it clean inside and out. Concord/Concord-Carlisle's drivers are familiar with their bus and since most of the time no one else drives it, they can give mechanics more accurate information on problems. Working together they find and fix defects as they occur. The mechanics in Concord/Concord-Carlisle are skilled and adequately staffed. They maintain 36 buses and roughly as many other school department vehicles. They are able to keep up with the work. Outsourcing companies actively solicit non-school charters. The following text was taken from company websites;

"All of our buses … are great for schools, churches and temples, company outings, birthday parties, Bar and Bat Mitzvahs, bachelor and bachelorette parties, weddings, and other activities."[8]

"..shuttling your wedding guests doesn't need to cost a fortune. Leave the transportation to our professionally trained drivers and put the savings toward the honeymoon you've always dreamed of"[9].

State inspectors will fail a bus for lack of cleanliness. For example, one inspector wrote the following comment as part of an inspection of a First Student bus assigned to Sudbury [capitals

[8] "Doherty's Garage." *Doherty's Garage*, accessed October 2, 2012, http://www.dohertysgarage.com/buses.htm
[9] "First Student Charter Bus Rental ! Online Quotes From $1.50 Per Person," *First Student*, accessed October 2, 2012, http://www.firstcharterbus.com/

in original]: "ALL HOLIDAY DECORATIONS MUST BE REMOVED FROM INSIDE OF BUS FOR THIS BUS TO PASS INSPECTION. ALL WINDOW DECORATIONS MUST ALSO BE REMOVED."

Concord/Concord-Carlisle does not rent out school buses to transport parties[10].

Optional Equipment that Improves Safety

Concord/Concord-Carlisle chooses equipment to improve bus safety. For example, Concord/Concord-Carlisle buses use 'thermo-pane' glass for the windshield, door, and selected windows. This allows the driver to see in wet conditions when single pane glass would fog up. The double layer glass is much easier to defrost. Better visibility in stormy weather increases driver situational awareness, which enhances safety.

Accidents

Most school bus accidents involve other vehicles hitting a bus. School bus drivers are among the most highly trained and safe motor vehicle operators on the road.

This analysis of Concord/Concord-Carlisle's school bus accident statistics uses a selection of all accidents involving a school bus in the Massachusetts Registry of Motor Vehicles (RMV) accident database covering 2002-2010 (as much school bus accident data as they have).

The table below shows the results of our analysis. The percentage of accidents in Concord/Concord-Carlisle possibly caused by a school bus driver is not significantly different from the percentage found both in neighboring towns and in the rest of the state as a whole. Acton has an in-house system. Sudbury contracts with First Student, Lexington with C&W, Lincoln with Doherty and First Student, and Bedford and Carlisle with Bedford Charter.

Massachusetts Registry of Motor Vehicles records of school bus accidents 2002-2010			
Towns	**Percentage possibly contributed to by school bus driver**	**All accidents**	**Bus driver contributed**
Concord	*31%*	39	12
Acton	*25%*	8	2
Carlisle	*50%*	4	2
Sudbury	*21%*	19	4
Bedford	*56%*	16	9
Lincoln	*43%*	7	3
Lexington	*47%*	15	7
State Total	*21%*	4519	943

[10] This raises an interesting question: Do school buses transporting parties dilute the safety provided by the special colors and "school bus" labeling?

Why do the percentages vary so much town-to-town?

School bus accidents are infrequent and random. Accident statistics for individual towns vary widely from year to year. The percentages vary because of the relatively small number of accidents in each town, even over the nine year period covering 2002 -2010. While the percentage variation is large, it does not conclusively reflect an actual difference in driver performance. Concord/Concord-Carlisle's drivers have an accident record that is about the same as drivers in neighboring towns, given the limited sample.

The following table shows school bus accidents by town by year. School bus accidents are random events. Yet if the sample area is large enough, as is the case with the State Total, the variability is less as a proportion of the total count. Concord varies from 1 to 11, while the state varies from 471 to 569. Smaller samples produce greater variance.

School Bus Accidents by Town by Year

Towns	2002	2003	2004	2005	2006	2007	2008	2009	2010	total
Concord	8	11	2	1	3	5	4	2	3	39
Acton	1	2	0	1	0	1	1	3	0	9
Carlisle	0	0	1	0	0	1	0	2	0	4
Sudbury	2	2	3	1	5	0	1	2	3	19
Bedford	2	4	1	1	0	1	2	5	2	18
Lincoln	2	1	0	3	0	0	1	0	0	7
Lexington	5	2	3	0	0	1	2	0	2	15
State Total	491	555	480	510	471	460	501	569	482	4519

More discussion of school bus accident statistics, including other ways to visualize the data, can be found in Appendices D, E, F and H. These appendices discuss how CTC processed RMV data to derive these results as well as how one can better interpret the statistics. They also provide a snapshot of the administration's findings and why these results differ.

In May, the school administration presented safety statistics to the School Committee (see Appendix D for the statistics and for a brief description of the history of the presentation).The presented result (displayed in the second table in Appendix D) appeared to show that Concord/Concord-Carlisle had 13-times more accidents per mile than First Student and 2-times more accidents than C&W

The proportion of accidents caused by the bus drivers in Concord, Lincoln (First Student & Doherty), Sudbury (First Student), and Lexington (C&W) are too similar to support the school administration's conclusion. Most school bus accidents are not caused by the school bus driver. For Concord/Concord-Carlisle to have 13 times as many accidents per mile as First Student operating in Sudbury, somehow all drivers in Concord/Concord-Carlisle would have to be crashing into school buses 13 times more often per mile than they do in Sudbury. Traffic conditions vary town to town, but not that much. Clearly, the school administration's statistics do not reflect the same data as the statistics presented here.

Driver Turnover

Low turnover increases safety because drivers are more familiar with the town, students, their families, and the local transportation system. Low turnover is an indication that the town is providing drivers with a reasonable working environment where they can get work satisfaction.

Concord/Concord-Carlisle's current turnover rate is lower than outsourcing companies despite the recent turmoil surrounding and within the department. Before 2010 the rate was about 4%. The rate may be higher currently because of driver uncertainty about the future of working in Concord/Concord-Carlisle. Even with the uncertainty, our turnover rate is lower than First Student's. A brief investigation into other towns showed that Concord/Concord-Carlisle's turnover rate is comparable to those towns.

Annual Turnover Rate

Provider	Annual Turnover
Concord	8%
Foxboro	4%
Cohasset	2%
First Student	10%

Paid Sick Days

Concord/Concord-Carlisle drivers may take one paid sick day per month. First Student allows up to four unpaid sick/personal days per year. If a First Student driver takes 5 or more (unpaid) sick days in a year they sacrifice their annual bonus.

Concord/Concord-Carlisle's policy on sick days results in drivers who are less likely to show up for work with an illness. This increases the safety of our system:

- Healthy drivers drive more safely and are more effective at dealing with children.
- Contagious drivers might also infect students, potentially spreading disease into the student population and beyond.

Paid sick days increase safety and general health during flu season.

Level of Service

The number of bus routes and stops affects safety. More bus stops relative to a given enrollment means bus stops can be closer to student's homes. Concord/Concord-Carlisle picks up students at their home in areas where it might be unsafe for students to walk, especially on dark winter mornings. More bus routes decreases the number of bus stops per route. Fewer bus stops per route means less travel time for the students, which increases safety and reduces the potential for delays.

Comparative Level of Service

		Level-of-Service			
Towns	**Enrollment**	**Routes**	**Stops**	**Average students/stop**	**Average stops per route**
CCHS	1209	43	600	2.02	13.95
Concord k-8	1991	95	1595	1.25	16.79
LSRHS	1601	34	563	2.84	16.56
Sudbury k -8	3102	59	1332	2.33	22.58
Lincoln k-8	505	14	266	1.90	19.00

The table above shows that Concord/Concord-Carlisle's level of service is higher than surrounding towns. Buses pick up and drop off students closer to home and drive shorter routes. Possibly this higher level of service encourages more students to take the bus. Another reason may be that Concord/Concord-Carlisle does not charge a fee, whereas Sudbury charges a fee to families living within 2 miles of schools ($350 per student per year with an annual $650 cap per family). Though it is difficult to measure precisely, Concord/Concord-Carlisle buses typically transport about 70% of our students to and from school, whereas in Sudbury reportedly about 60% of students ride the bus. Increased ridership increases safety.

Why bus fees reduce safety

Fees reduce the number of students using the bus to get to school. Fees reduce safety because more students are walking, biking, or driving to get to school. Fees also create administrative costs. School systems that charge fees in Massachusetts hire extra help in the summer to register students for pick up, collect fees and issue bus passes. Late registrations (after the end of July) may require rerouting buses and altering bus schedules. One town surveyed offers a $50 discount for payment before mid July. The transportation manager of that town indicated many families still sign up as late as October, complicating her bus routes and sometimes creating complete changes in routing. Having no fees eliminates the work of registering riders, collecting fees and rerouting buses to pickup and drop off those who register late. No fees encourages ridership, which increases safety for students and reduces traffic congestion at schools.

Most of the fee-charging towns surveyed advised that if the town considers fees[11], it should also consider the reduced safety, increased congestion, and increased administrative costs associated with fees and reject the proposal.

Safety - Conclusion

To reiterate: School buses are the safest mode of travel for students to and from school. Statistically, Concord/Concord-Carlisle's accident performance is not demonstrably different from that of its neighbors. However its maintenance record, personnel policies, and level of service are noticeably better than those of private contractors. CTC sees no reason to outsource, and many reasons to retain transportation in house, based on safety.

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[11] (from the 5/8/2012 school committee meeting minutes -- emphasis added)

"Transportation Report and Survey Results. .. Ms. Rigby stated that 840 parents responded to the survey resulting in an overall participation rate of 27%. ***Many comments were received and it was noted in the sentiments that we should not be charging bus fees and there was some support for bus fees but not expensive bus fees..*** "

Social Factors

A number of intangible social factors play into the question of retaining the transportation department. The school bus driver is frequently the first and last contact a student has with the schools on any given day. The drivers do more than merely operate the buses. They receive Open Circle[12] training and are part of the educational team for any student on their route who has special needs. They also establish the tone on the bus, extending the anti-bullying norms of the schools to the buses. They are in every sense members of the broader community.

The drivers contribute to the community at large in significant ways. As with other communities nationally, they act as an informal neighborhood watch.[13] As one driver said, "If you get a new car, we know it. If there's a strange car in your driveway, we know that, too." They also assist public safety, reporting downed trees and similar hazards. Many citizens commented, either privately or at the Committee's hearings, on how the drivers connect to the school community beyond the basic requirements of their jobs. When a team has an away game, the driver(s) often will watch and cheer for them. Drivers will sometimes join in on field trips, as well. Perhaps the most powerful demonstration possible of this connection can be seen in the outpouring of grief and sympathy following the recent death of bus driver Gary Garafola. That he touched the lives of many students and their families profoundly seems beyond doubt.

It is important to appreciate all the different parts of the school system. Concord/Concord-Carlisle parents have overwhelmingly indicated the importance of the drivers to their child's educational experience. One parent observed at a Committee hearing that to define transportation as somehow not central to the schools effectively declares that transportation employees are less important.

The local community also appears to place significant value on the quality of service provided by the transportation department. If there is a problem of some kind, whether it is a musical instrument left on the bus or a mix-up about stops, when parents call transportation, they are used to having the call answered by a local person who has some responsibility and who reports to another local person. Many parents have commented on their experiences in other towns where they called the local transportation department and could only speak to a busing company employee who was completely unhelpful. The contrast with Concord/Concord-Carlisle's transportation department could not be more powerful.

Concord/Concord-Carlisle also places a high value on environmental awareness and on "buying locally." Many private contractors are large national or international corporations, so that tax dollars spent with them are less likely to remain in the local area. Moving the bus depot away from a central location is also environmentally careless, since the additional fuel expenditure is certainly non-trivial.

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[12] "Open Circle" is the portion of the curriculum devoted to social issues, such as anti-bullying

[13] See, for example, http://www.pbs.org/newshour/rundown/2012/09/williston-area-schools-suffer-bus-driver-shortage-on-first-day-of-class.html

Most of these issues have more to do with personal philosophy than they do with the dollar cost of transportation. Yet it is clear that these issues speak to the community. It would therefore be both irresponsible and non-responsive to the taxpayers to make a decision about outsourcing that did not explicitly address these issues.

Emergency Preparedness

The transportation department does more than bus students at the beginning of school and at the end of the school day. The buses are used for additional functions related to the school such as the late bus, transportation to sporting events and other extra-curricular activities such as the prom. The buses are also used during the day for field trips.

Non-school related activities such as Concord Recreation Programs also make use of the buses. These additional functions are all planned and scheduled in advance.

The transportation department also has an important function, which is planned but not scheduled. Concord's emergency preparedness plans rely on the transportation department for certain functions.

CTC looked at the town's emergency preparedness plans to gain an understanding of how the transportation department and the school buses are integrated into the plan. CTC also examined other towns to gain an understanding of how they address emergency preparedness and if and how they integrate school buses.

Concord

The town of Concord has Emergency Preparedness plans overseen by the Chief of the Fire Department and the Local Emergency Planning Committee. The town has a manual consisting of a large three ring binder[14] which includes procedures on what to do in case of specific types of incidents such as fires, chemical spills, or floods. The procedures include details that are both location and incident specific. Locations include both public and private facilities (e.g., Alcott School, a nursing home, and MCI - Concord). The plan recognizes that responses will be different based on both the type of incident and location.

One of the concerns when an incident occurs at a location that has a large population is what to do with that population. The Emergency Preparedness plan includes scenarios which contemplate the use of various vehicles to either transport persons from the facility or to temporarily hold the persons; this second method is referred to as shelter in place.

One of the options described by the Emergency Preparedness plan is the use of the school buses owned and operated by the Concord Public School and the Concord Carlisle Regional School District. The transportation department plays a part in the execution of this plan. The Emergency Preparedness plan in the past included Dee Bus services, a private service, as some of their buses were stored in Concord.

[14] As this binder does not exist in electronic form, we did not obtain a copy.

Fire Department

The fire department is primarily responsible for handling the incident. As part of evaluating the situation, whether fire or other situations, the fire department determines if there is a need to either transport people or shelter them at the scene. If the department determines that school buses are need to either transport or shelter personnel in place, the department contacts the school transportation department to send the required number of buses to the incident location.

School buses are not the only method used for transporting. Depending on the situation, the desired vehicle could be an ambulance or van.

School Transportation Department

Once it has been determined that a school bus is needed or likely to be needed to either transport or shelter in place, the fire department makes contact with the School Transportation department. The fire department has a series of phone numbers including work and cell phone numbers to contact personnel in the Transportation department. The transportation department likewise has a list of persons to contact to drive the buses.

In order to get the bus to the location, the bus, the keys, and a driver are required to be at the same location. Currently the buses and the keys for the buses are both located at Concord Carlisle Regional High School property when not being used. The location of a driver is dependent on the when the event occurs.

A driver must have a commercial license, including an 'S' designation for students, for the size vehicle being driven. Within the transportation department, not only the drivers but other personnel including the transportation manager, the transportation coordinator, and a mechanic meet this requirement.

Several of the members of the fire department also have commercial licenses (but without the S designation). While it has not been required, one of these members of the fire department could move the bus from the storage location to the incident location/site for sheltering of persons.

Use of the System

The use of the Emergency Preparedness system has fortunately been limited. The use of school buses in conjunction with incidents associated with the Emergency Preparedness plan has been even more limited. The record of events does not provide an easy method to determine when a school bus has been used. It is necessary to examine each record to determine if a school bus was used. While there are anecdotal recollections that school buses were used for one event or another, there are no easily accessible records that clearly record such use.

One example of a school bus being used was in the early 2000s when a chemical spill occurred at Alcott school. As a safety precaution, the students were transported to the high school.

In addition, as this report was being written, an incident occurred on September 18, 2012 at Walden Nursing Home on Main Street. Two school buses were called to be used for sheltering in place.

In both these episodes the event occurred during the school day and the transportation department had personnel in their facility. In the first situation, the persons being transported were students and the responsibility of the Concord Public Schools. In the more recent event, the persons who were sheltered in placed were the responsibility of a private entity. The issue of whether and who reimburses the school district regarding costs incurred has not been addressed as of this writing.

Emergency Preparedness plan – Comparisons to other towns

With respect to emergency preparedness, the committee contacted other towns to determine how communities, including both those that have in-house transportation departments and those that contract for transportation approach emergency preparedness. The committee's inquiries focused on whether the local school bus system is used for transportation or sheltering in place during an emergency and if so, how. The contacted towns illustrate a variety of methods of approaching emergency preparedness. As actual emergencies of this sort are a rare occurrence, the person to whom we spoke, could only comment regarding the planning portion.

Carlisle

The town of Carlisle consists almost exclusively of single family residences and thus has no need to transport or shelter in place large groups of people. Carlisle does not have a plan that incorporates the use of school buses or describes other methods to transport large groups of people.

The area of emergency preparedness is another example of how the town of Concord and the town of Carlisle approach transportation issues differently.

Acton

The town of Acton uses an in-house bus system. Their system of busing and emergency preparedness is similar to the Concord system.

Bedford

The town of Bedford, like Carlisle, uses Bedford Charter for transportation of students. In contrast to Carlisle, Bedford has an emergency preparedness plan that incorporates the use of Bedford Charter resources. The plan uses a similar method to Concord where the buses can be used either for transportation or sheltering in place during an emergency. In case of emergency, the Bedford school transportation department contacts Bedford Charter Bus to provide the service. As in Concord, the town should be able to get school buses twenty-four hours a day seven days a week.

Sudbury

The town of Sudbury contracts out for transportation of students. First Student, the service used by Sudbury, is an integral part of the emergency preparedness plan. Although contracted, the emergency preparedness system is similar to Concord.

The buses are stored in Sudbury. The transportation person, who is a First Student employee, is part of the emergency preparedness plan. The transportation person is part of the phone chain to deliver the school buses to an incident location.

As indicated in other portions of the report, Sudbury's approach to busing is drastically different than Concord. The town does not bus as large a percentage of students as does Concord. Sudbury does not have as many reserve buses as Concord.

Lexington

The town of Lexington also contracts out student transportation. Administrators from the school transportation department indicated that the bus contract does not extend to emergency preparedness functions. The emergency preparedness department could not be reached.

Framingham

The town of Framingham has recently transitioned from an in-house school bus system to a contracted system. Durham Transportation Service transports their students. Framingham has not had a situation since their transition from in-house busing to contract busing where buses were needed for a local emergency. The personnel in Framingham are confident that the system will work. An important factor in the success of the plan and execution is the relationships between the parties.

Other towns

Other towns have systems where school buses are part of the emergency preparedness plan. However their plans differ from Concord's in that the plan only uses school buses for public facilities. The emergency preparedness plan expects private facilities including nursing homes to arrange transportation in their own emergency preparedness plan.

In addition to school buses, other towns incorporate other vehicles such recreational department or Council on Aging vehicles. One town incorporates State Department of Corrections Vehicles into their plan.

Conclusion – Use of school buses in emergency preparedness plan

The way a town uses or does not use school buses in their emergency preparedness plan is not tied to whether the school district uses in-house bus transportation or contracts the busing services.

Fortunately most towns have not had an emergency in which they had to implement their plan in which they use their school bus. Representations that the plan will work regardless of whether it is a school day or 2 AM on a holiday weekend need to recognize that actual use of the plan may identify flaws.

Regardless of whether the school district determine to use in house or contracted busing, the town of Concord needs to ensure that the emergency preparedness plan reflects the current arrangements; as indicated above the town modified the plan after Dee buses were moved out of town. The town may determine that the scope of the emergency preparedness plan needs to expand or contract. Responsibility for the emergency preparedness plan for the town of Concord is not the responsibility of the Concord Public School or the Concord Carlisle Regional School District. And as indicated above, Carlisle does not use the school buses as part of any emergency preparedness plan.

A key element in a successful emergency plan is good communication and working relationship among the parties.

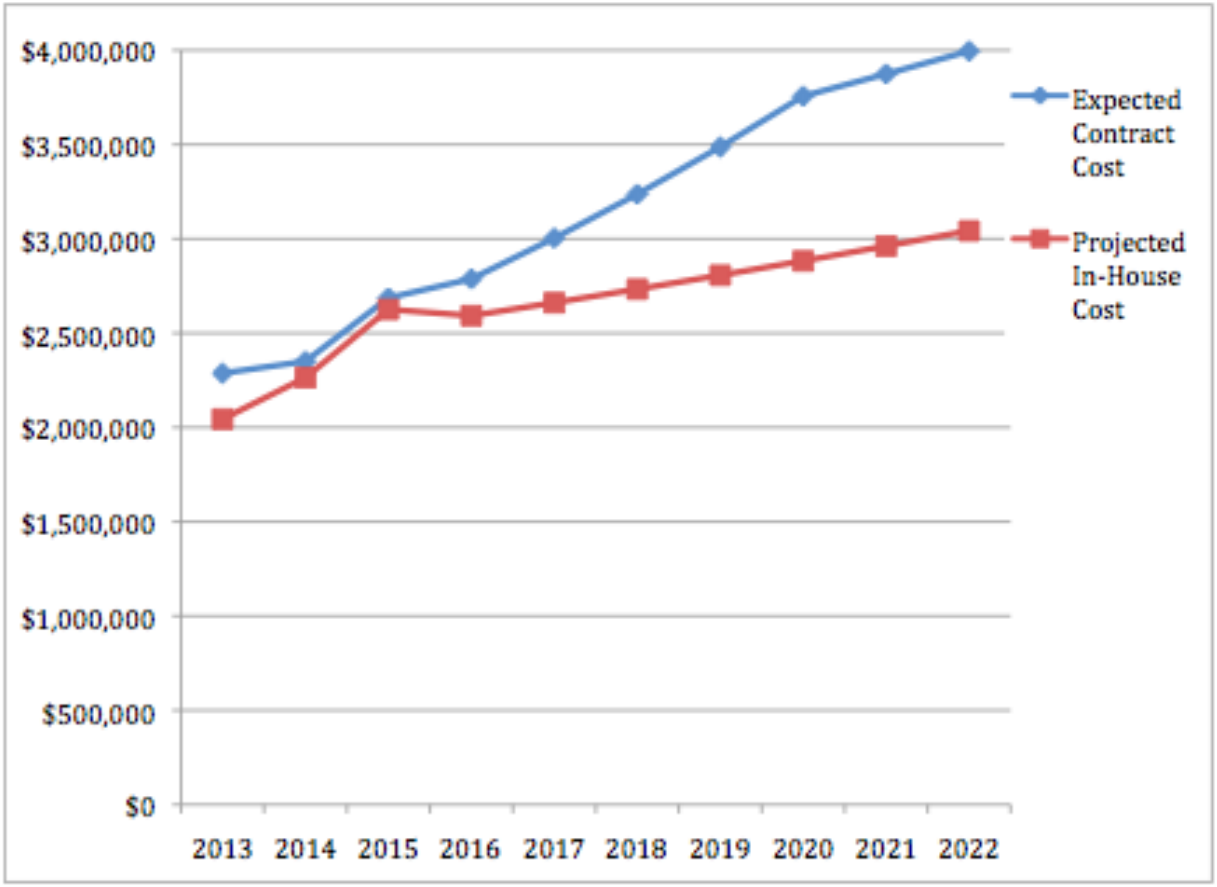
Cost Analysis

Summary of Findings

In February 2012 the school administration sought to contract out the bus transportation service for Concord-Carlisle Regional High School (CCHS) and the Concord Public Schools (CPS), eliminating the in-house transportation staff and transportation facility. In late 2011, the administration sent out an Invitation for Bid to provide the transportation service, but retaining ownership of the buses. In early spring 2012, another IFB was issued. In CTC's analysis, these IFBs provided faulty and misleading cost comparisons biased heavily in favor of contracted service.

As a result CTC decided to build an independent cost comparison, providing a balanced look at costs, looking at a 10 year period to illustrate long-term effects. The following chart compares the expected costs for contracted transportation (based on the results of the IFB from April 2012) versus In-House transportation (as provided by the existing transportation department). Backup data for this chart is provided in Appendix J; explanations for the data used in this chart are provided in the rest of this section.

10 Year Cost Comparison



Differences from School Administration Estimates

The school administration has provided many different numbers for the cost of school bus transportation over the past year. For continuity and completeness CTC used the estimates provided in a memo regarding Transportation Services dated May 3, 2012 from John Flaherty, Deputy Superintendent of Finance & Operations, to Diana Rigby, Superintendent of Schools.

What follows is a list of the biggest problems affecting cost analysis that CTC found in Mr. Flaherty's memo[15], followed by more detailed explanations:

- The removal of the current bus transportation facility was presumed
- The estimate to replace the existing bus transportation facility was inflated:
    - Purchase of land for $800,000
    - Replacement of buildings instead of moving them, or combining into one building
    - Worst-case estimates for utilities, septic, site work, etc for two buildings
    - Worst-case estimates for bus parking and infrastructure
- The bus replacement schedule was accelerated (8 each year for 2014-2016)
- Employee benefits estimates were overstated
- The level of service specified in the bids for contracted service was incomplete
- A three year bid for contracted service was requested instead of five years
- Only three years of expense projection was used to compare in-house to contracted service
- The temporary Repair Facility rental cost was included for all three years
- "Credit" for Fleet Sale for CCRHS and CPS buses was spread across three years

Some of these assumptions could be viewed as simply ensuring a not-to-exceed estimate. However when put together with persistent round-up errors, and front-loading costs into the first three years, they result in seriously inflated estimates for in-house service.

Transportation Depot Replacement

As discussed in other sections of this document, the site of the current transportation depot on the CCRHS campus, is the best site in terms of investment and operating cost, and functionality. Much discussion has ensued in the Concord community over the past few months about the "requirement" from the new High School Building Program to eliminate the current facility. Reasonable doubt exists from an engineering standpoint that there is much more than an aesthetic rationale for removing it. For reasons that are not entirely clear, eliminating this facility seems to have been a driving force for the attempts to contract out the existing bus transportation service (or perhaps it is the other way around).

CTC therefore looked very carefully at the numbers provided by the school administration to look for possible assumptions that may have crept into the figures and biased the analyses. This included expense projections for in-house operation and cost comparisons to contracted service. The first assumption as described above was of course the presumed requirement to remove the existing facility.

[15] (Many other inaccuracies such as bus safety exist in this document, but this section of the CTC report focuses only on the cost comparison provided in the document.)

The next item that stood out was the estimate of $2,000,000 to replace the existing facility if the service were to be kept in-house. This number was arrived at by adding estimates for land, replacement buildings and fuel depot, and parking. The estimate for land was based on purchasing buildable (.5 acre for the buildings and fuel depot) and unbuildable (1.5 acre for parking) land in Concord, for a total of $250,000. If buildable land were used for both, the estimate crept up to $800,000. If Town or School Department land were used there would be no cost. The $800,000 estimate was used even though there is no reason to put the parking on buildable land, and in fact there are several Town and School Department properties which could work for both purposes.

The estimate for buildings assumed replacement of the existing facility, with a summary dismissal of moving the Administration building and no discussion of moving the Maintenance building. Nor was any consideration given to combining the buildings should they be replaced. If combined, obvious economies would exist for the single structure, as well as site work and utilities.

The estimate for bus parking and infrastructure (security fencing, lighting, etc) started with an estimate for paving 2 acres at $100,000 per acre - although it was previously stated that 1.5 acres would be needed for parking. Similarly $175,000 estimated for infrastructure contained what was stated to be “the worst case cost for subsoil preparation for a two acre paved site”.

In the aggregate the CTC feels that the estimate to replace the existing facility, **if required at all**, is seriously overstated at $2,000,000.

More realistic options exist for the transportation facility. These options have cost estimates ranging from less than $200,000 to as much as $1,200,000,depending on how much is to be moved or replaced, and where. The options include:

- Keep existing facility on CCRHS property, at present location or sited elsewhere
- Keep some of the facility on CCRHS property, and some at another Town/School site
- Rebuild everything at a Town or School Department site

For purposes of the 10-Year Cost Comparison, CTC assumed the third option, with an estimate of $1,200,000. Note that the transition costs incurred due to construction of the new high school have not been included here or in the 10 Year Cost Comparison.

Bus Replacement Schedule and Cost Estimates

As of June/July 2012, the current CCRHS/CPS bus fleet (Appendix K) consisted of 36 buses with model years between 2000 and 2012 (purchased between 2000 and 2010). 21 were purchased in 2005 and 2006 alone; 2 were budgeted in 2011 and 2012 but not purchased. Some important observations:

- The average age of the buses is 4.5 years (range is 0 to 12)
- The average mileage on the buses is 66,000 miles (mileage range is 4,811 to 160,841)

The school administration's statement of projected need for bus replacement for in-house service is 8 new buses each year for three years(2014-2016), at an estimated $760,000 per year. Based on national studies of school bus replacement, this accelerated replacement is not justified; even by the school administration's current replacement schedule replacing two-thirds of the buses in 3 years does not make sense.

The **current bus replacement schedule** is stated by the school administration to be based on 10 years of service or 200,000 miles, which amounts to 3-4 per year. Mr. Flaherty's May 3, 2012 memo states that additional bus replacement is needed to include bus purchases deferred from prior years, primarily due to the age of the buses, not mileage.

According to the National Association of State Directors of Pupil Transportation Services, the **recommended bus replacement schedule** should be based on 12-15 years of service or 250,000 miles[16].

Based on this recommended useful life, at most 3 buses will be needed (instead of 16) by 2015, with an ongoing replacement schedule of 2 buses per year after that. CTC used this replacement schedule in the 10-year Cost Comparison for both in-house and contracted service since they will be needed in either case.

CTC urges that the school administration immediately adopt the recommended replacement schedule. Moreover, actual bus replacement each year should be determined by starting with the

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[16] see http://www.nasdpts.org/Documents/Paper-BusReplacement.pdf page 4 which states:

"… the following anticipated lifetimes under normal operating conditions for different types of school buses are suggested:

Type "C" and "D" school buses -- 12 to 15 years
Type "A" and "B" school buses -- 8 to 10 years

Mileage Considerations: As previously discussed, the life cycle cost study in South Carolina noted that school buses that accumulate mileage more quickly should have replacement decisions based on mileage accumulation rather than age.

According to data published by the Federal Highway Administration, the average annual mileage for all school buses is approximately 8,000 miles. … many individual school buses accumulate much higher annual mileage. For example, school buses in South Carolina average more than 15,000 miles per year. … the state believes school buses should be replaced on a 15-year or 250,000 mile cycle.

© January 2002 National Association of State Directors of Pupil Transportation Services. All rights reserved."

replacement schedule and then adjusting based on an annual review of the maintenance for each bus (to determine if maintenance costs might warrant early replacement of a particular bus).

CTC also recommends that the school administration consider the use of a different type of bus as the standard school bus. The use of a front-engine Type D bus instead of rear-engine Type D will result in a lower purchase price per bus, as well as a higher resale value when the buses are ultimately sold.

Not all buses in the current bus fleet are Type D rear-engine buses. An economic case could be made to maintain only one type of bus, leasing non-standard buses instead of purchasing them. This should result in a cost advantage by reducing parts inventory, maintenance training, etc, to only the standard school bus. Alternatively, contracting out the small number of routes where non-standard buses are used could be considered to avoid the additional operational costs.

Personnel Benefits

Personnel benefits (health and retirement), while not listed as a line item in the CCRHS budget, have been included by the school administration in the comparison between in-house operation and contracting out the service. The benefits were based on an estimate from the Town of Concord of $279,219 for total benefits cost in 2013. This estimate was then inflated by 3% for each subsequent year.

This estimate however also includes some sunk costs and not just the cost avoidance if the Transportation staff were let go. The following information was provided by Tony Logalbo, Finance Director for the Town of Concord.

The estimate includes benefits cost for any past employee already retired and any employee eligible to retire. Eligibility for post-employment health coverage requires that the retiree be receiving or be eligible to receive a public pension, i.e. be “vested.” As of May 3rd, there were 32 bus drivers enrolled in the pension system. Of those, 11 had vested with ten years of creditable service. One other current employee is imminently close to vesting. The Town is not obligated for the future benefits of any current employee not yet vested. There are ten more current bus drivers who have worked at least 4.5 years and who will be vested within the next 5.5 years (reaching ten years of service). These employees will be eligible to retire at that point. Thus while the benefits cost elements may be real, a good part of the estimated cost would not disappear from the budget if the transportation department were eliminated.

Immediate savings would be seen in the health premiums paid for active employees. The long-term liabilities would also be reduced if we no longer had these active employees. The best way to measure these savings on a current basis is to use the "normal cost" percentage that the Town’s actuary determines. This is a dollar value expressed as a percent of payroll. The best approximation of the true annual employer cost of future benefits is 5% for pension and 5-10% for the Town's 50% share of retiree health premium for life.

Thus, based on 2012 Transportation salaries of $1,405,710 CTC estimates a benefits cost for 2012 in the range of $140,057 – $210,087. Using the midpoint and inflating by 3% yields a benefits cost for 2013 of $180,323 – roughly $100,000 less than the school administration’s

estimate of $279,219. $180,323 was used in the 10 Year Cost Comparison and then inflated by 3% each year.

Note that benefits costs are borne by the Town of Concord for 30 of the drivers. This is required by Massachusetts state law, since these 30 employees work more than 50% of their time for Concord Public Schools. (It would appear to be a cost benefit for Carlisle residents if the Town of Concord bears the benefits cost for 83% of the drivers, and CCRHS bears only the remaining 17%. In contrast, CCRHS driving accounts for 39% of the total driving time.)

There is another potential recommendation that we have not had time or resources to address. The presumption in the school administration's cost comparison is that compensation and benefits levels for transportation employees are significantly higher than for Contract firms offering the same service. If this is the case, a review of level of benefits (and salaries) may be appropriate at least for future years/employees. An independent review conducted with the Town may make sense in the future.

Level of Service

Several differences in the level of service provided by the existing transportation department, as compared to Contracted Service are described in other sections of this document. Many of them, for example supporting the Town's Emergency Preparedness, are hard to quantify in terms of cost and have not been addressed here.

There are some other real costs which appear to have not been considered as the Administration tried to make the case for eliminating the existing transportation service. First is the approximately 29 other school vehicles that are maintained by the transportation department. Maintaining and repairing these vehicles could easily cost $30,000 per year or more in the private sector. This estimate has been added to the Contracted Cost estimate in the 10 Year Cost Comparison.

The second consideration is the garage that is also on the depot premises, which houses snow equipment, among other things. This additional cost, while not inconsiderable, has not been included here due to lack of time. Provision for this garage is an additional cost that should have been included in the cost of outsourcing. It is important however that it be addressed in the school administration's final transition plans.

Cost Comparison

When going out for bid for contracted bus transportation, a big concern should be that the bidders may low-ball their prices in order to get the contract, and make it up in subsequent years. Once the bus fleet is sold it would be a massive investment to bring it back in-house and purchase the buses again In our case it would be on the order of $3.6 million, and then the buses would all need replacement at the same time after 12-15 years.

To partially protect against low-balling, a longer contract term, such as 5 years, is normally recommended. In the school administration's November 2011 IFB which retained fleet ownership but leased the buses to the contract firm, a 3 year contract was specified with 2 option years. For some reason the second IFB in March 2012 specified only a 3 year contract. This raises concern about cost increases after the initial contract term expires.

This need for this concern is borne out in studies that have been done on School Transportation, and privatization in particular. For example, the "Study of Ohio Public School Transportation Privatization 1994-1998"[17] says:

> "Perhaps the most central question is, 'Why does it appear that contracting districts are so much more costly than non-contracting districts?' There are a number of possible explanations, each worthy of further research. The most straightforward explanation is that vendors charge more than what it costs districts to run their own service. In exchange for the administrative freedom to focus exclusively on 'instructional services,' school districts and communities pay a premium to contractors."

The Ohio study quantifies the cost of this premium per student transported as ranging from 23.6% to 50.2% during the period 1994-1998, with 33% being the most recent.

The Keystone Research Center's "Study on the Cost of Student Transportation Services in Pennsylvania, 1986-2008,"[18] was more recent, and most conservative (lowest) in terms of price increases for contracted services. More importantly for the purposes of this report, it captured the **inflation-adjusted** transportation spending in the five years after the initial contract: "29 districts that privatized transportation services between 1992 and 2001 reveals that these districts experienced a **26%** increase in total transportation costs in the five years after contracting out compared to a **6%** increase in the five years before contracting out."[19]

CTC has used this figure (26% increase over 5 years, in addition to 3% inflation per year) for the period following the third year of the contract bid. In contrast, in-house service assumes 3% inflation for each year.

The use of a 10 year cost comparison demonstrates the impact of this effect. It also smooths out the costs of in-house and contracted service, and allows the "credit" for the sale of the bus fleet (if contracting out) to be spread over 10 years (Note that this still assumes that the school administration is allowed use of the Concord Public School fleet proceeds towards vendor costs, this has not been confirmed.)

The Cost Comparison does not include the temporary rental cost of the Repair Facility in Billerica; it presumably would be needed in either alternative for a year, but it's not clear that it would be needed longer than that. It also does not include any other transition costs while the new High School is being built, but concentrates on the long-term cost of bus transportation.

To summarize all these cost differences, in developing the 10 Year cost comparison CTC started with the numbers provided by Mr. Flaherty in his May 3, 2012 memo.

- Contracted service numbers were based on the "2nd bid – Without Fleet Ownership" cost analysis ("1st Bid – Retained Fleet Ownership" included an **additional** 15 buses over the first 3 years), with the following adjustments:

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[17] http://www.afscme.org/news/publications/privatization/taking-them-for-a-ride-an-assessment-of-the-privatization-of-school-transportation-in-ohios-public-school-districts

[18] http://keystoneresearch.org/publications/research/school-bus-transport

[19] See also An Analysis on the Contracting Out of School Support Services in Oregon 2003, http://pages.uoregon.edu/lerc/public/pdfs/costsconsidered.pdf

- The bid for 2015 was inflated by 3% + 4.73% per year for the next 5 years
- The credit for the sale of the fleet was spread over 10 years (CCHS **and** CPS buses)
- Replacement buses added for 2015 (3) and beyond (2 per year)
- Repair Facility Rental was not included
- Maintenance for an additional 29 school vehicles was added and inflated by 3% per year

- In-house transportation used the base 2013 budget for the transportation department, with the following adjustments:
  - The budget was inflated by 3% per year for 10 years
  - $1,200,000 for the transportation facility[20] was added as debt service for a ten year bond; this normalizes its impact by spreading over 10 years.
  - Replacement buses added for 2015 (3) and beyond (2 per year)
  - Rental for the repair facility was not included.
  - Retirement benefits were added to 2013 at 5% of salary, and inflated 3% per year
  - Health benefits were added to 2013 at 7.5% of salary, and inflated 3% per year

As a final note, the 10 year period from 2013 through 2022 is still being used; adjustments can be made to update the comparison to 2014 through 2023 if necessary, although assumptions about contractor pricing would be needed.

[20] To test the sensitivity of this cost comparison to other options for relocating/rebuilding the transportation facility, additional data was entered to represent costs of $200,000 and $2,000,000 for the debt service for in-house transportation. These comparisons are included in Appendix J in addition to the cost of $1,200,000.

Site Selection

The selection of a site for the transportation department requires consideration of the land and location as well as the capital improvements necessary to use that site. Consensus opinion both within and outside the Committee is that the ideal location should be able to support all the functions of the department - administration, maintenance, fueling, and parking, both for buses and employees. The ideal location should also be centrally located, to minimize extra travel time before and after bus routes. The Committee looked at what exists in the current facility, what would be required to replace it, and at five locations within the Town of Concord. Preference was given to sites already owned by either the Concord Public Schools or by the District, and then to sites owned by the Town. The Committee concluded that the best available option is the current site at Concord Carlisle High School.

The existing facility consists of a three-bay maintenance building of approximately 3900 square foot, a 1440 square foot modular office building, a 5000 gallon fuel tank and associated pumping station, safety fencing and lighting, and an additional building that houses the school's sand/salt truck. The modular building includes a reception area, two offices, a day room that is also used for training, and restroom facilities. The facility also includes parking for the buses and for the bus drivers and mechanics. Similar parking facilities would be required at any new location, with an ideal size of approximately 2 acres.

If the transportation department is moved, clearly all the functions of the existing facility will need to be replicated. There is no need, however, to duplicate the existing facility exactly. In particular, there would be no need to build two buildings to house maintenance and administration separately. A single larger building is likely to be at least as useful as well as being more energy efficient and cheaper to build. The Committee therefore determined, in discussion with a variety of builders, that a 4800 square foot building (60x80) would be able to accommodate two or three bays, offices, a day room/training room, a reception area, restrooms, and storage. A rough cost estimate for this structure would be between $480,000 and $600,000, which would cover all construction costs excluding site preparation and utility hookups. Similarly, paving a 2 acre site to a standard that will meet the needs of school buses would cost between $185,000 and $250,000, that estimate covering grading and paving only.[21]

Committee's Priority order	Site	Cost to Improve	Comments
1	Current location at CCHS	$0.00	No costs or modifications required. Positives: Site already exists. Has all needed improvements and is relatively central. Negatives: Conflict about whether the new school requires that the site be destroyed.

[21] For information on the sources for these various estimates, see Appendix Q

Committee's Priority order	Site	Cost to Improve	Comments
2	CCHS Student Parking Lot	~$1 million to $1.1 million	New maintenance building required (moving existing building would not be cost effective). Lot is on top of the old landfill, which must be remediated. Possibly paving the area to support buses could be part of the capping process. Because the site is part of the larger CCHS property, it would be possible to install a new fueling station. Such a station would have to be brought up to code and require a special permit from the Zoning Board of Appeals (ZBA). The ZBA has indicated it would be supportive of this action if the new design ensured safety, with features such as double or triple walls on the tank, an overflow tank, and an alarm system connected to the Police and Fire Departments. Positives: No land cost, is relatively central. Negatives: Uncertainty about timeline for landfill remediation. Concerns from Bristers Hill Road neighbors.

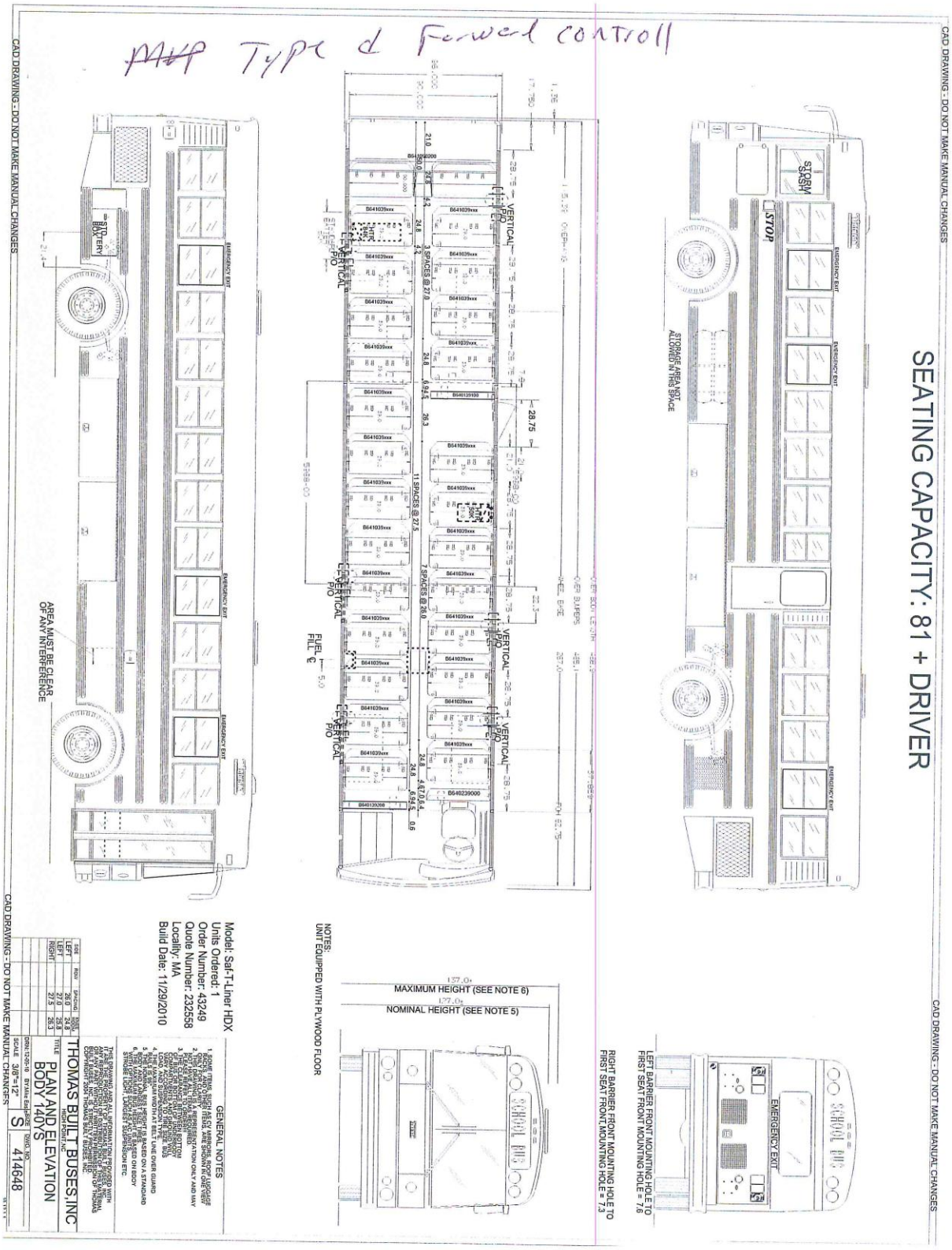
Committee's Priority order	Site	Cost to Improve	Comments
3	Concord Landfill (the "new" landfill).	~$1 million to $1.1 million	Controlled by the Board of Selectmen. The School Committee would need to make a written request that the land be transferred to their custody for educational use. The facility would need to be constructed. A permit would be required from DEP. Methane is present on the site, although the specific site in question was never actually used as a landfill. Methane would have to be considered with respect to the building (i.e. proper ventilation), but would be very manageable. General view is that DEP would be supportive of the project. Positives: Re-use of land which has little value for anything else. Relatively central (not far from current site). Negatives: All buses would have to cross or get on Route 2 multiple times daily. Walden Woods has again expressed interest in purchasing a conservation restriction from the Town on the property.
4	Ripley School (Burke and Ammendolia land)	~$1 million to $1.1 million	Facility would need to be constructed. The land was acquired for educational purposes (i.e. school use). A special permit would be required due to the presence of wetlands. Positives: Relatively central location, no land cost. Negatives: Closer to residential neighborhood than other sites.

Committee's Priority order	Site	Cost to Improve	Comments
5	Town land adjacent to CMLP	~$1 million to $1.1 million	Would require building, a parking lot, a driveway to that lot, plus all required improvements. A 1500 gallon fuel tank is on site--it would need to be enlarged or replaced. Site owned by town. Town Manager has indicated the town would be willing to have a bus depot there. Would require an NRC permit due to wetlands. Positives: No land cost. Might be benefits to sharing some of the facility with CMLP and CPW. Negatives: Not at all central. Virtually all buses would have to negotiate the rotary 4 times daily.

Conclusion & Recommendations

The School Transportation Department should continue to be operated directly by the schools. The existing department is integrated into the school community as well as into the town at large, in a manner which a private contractor would not necessarily be able to match. Private contractors cannot offer the same level of service as the transportation department can for a competitive price. Private contractors have no advantage in safety, and their maintenance record is considerably worse than the department has historically provided. The transportation department should reside in a central location that can support all the necessary functions--maintenance, administration, fueling, bus parking, etc. The current location, on the campus of CCHS, meets these criteria better than any other available site the Committee considered. Although the transportation department is less expensive than a private contractor would be, some reductions in expenses might be possible through more careful planning on the part of the school administration with respect to fuel costs, route assignment, and purchase specifications.

Appendix A: Type D Bus Diagram



Appendix B: Transportation Dept Pre-Run Checklist

Untitled

Bus No.: _____ Date: _____

Driver: _____

Start Mileage: _____ End Mileage: _____

1. In the columns provided, enter the appropriate inspection codes for each trip taken:
   X - QUESTIONABLE O - DEFECTIVE
2. If (X) or (O) is entered for any item, please explain in the comment section below.
   Items not noted have no known defects

____ Engine
____ Service Brakes
____ Parking Brake
____ Wheels / Tires
____ Body Damage / Paint
____ Exterior Lights / Flashers
____ Reflectors
____ Steering Mechanism
____ Horn
____ Windshield Wipers
____ Mirrors
____ Exhaust System
____ Glass
____ Interior Lights
____ Emerg. Exits / Buzzers / Triangles
____ First Aid Kit / Fire Extinguishers
____ Driver / Passenger Seats
____ Doors / Windows
____ Heat / Air Conditioning
____ Gauges
____ Cleanliness
____ Other: _____

DRIVER COMMENTS: _____

I have reviewed the previous DVIR, performed a pre-trip inspection and find:

☐ NO DEFECTS ☐ DEFECTS AS NOTED

Condition of the above vehicle is: ☐ SATISFACTORY ☐ UNSATISFACTORY

Pre-Trip Signature: _____

I have performed a Post-Trip Inspection, checked for remaining students or belongings and find:

☐ NO DEFECTS ☐ DEFECTS AS NOTED

Post-Trip Signature: _____

MECHANIC'S COMMENTS: _____

☐ Above Defects Corrected
☐ Above Defects Need Not Be Corrected For Safe Operation of Vehicle

Mechanic's Signature: _____ Date: _____

Driver Reviewing Repairs: Signature: _____ Date: _____

35085 Bus inspection.qxd 11/22/10 12:42 PM Page 1

MASSACHUSETTS REGISTRY OF MOTOR VEHICLES
SCHOOL BUS INSPECTION FORM (10/2007) Date _____

Operator: _____ Location: _____

VIN: _____ Reg. #: _____ Odometer _____

Body Manufacturer: _____ Body Year: _____ Body Type: A B C D Lift Equipped: Y N

Chassis Manufacturer: _____ Chassis Year: _____ Bus Number: _____ Reinspection?: Y N

COMMENTS *required for all fails and equipment defects:* _____

BODY INTERIOR

BUS IDENTIFICATION 1. [ ]
registration, plates, VIN, inspection sticker,
SAFETY EQUIPMENT - fire ext., first aid kit, 2. [ ]
body fluid clean up kit, reflectors, chock blocks,
belt cutter
DRIVER'S SEAT - adjust, seat belt 3. [ ]
STEERING 4. [ ]
wheel, column, horn, directional indicator, 4-way
BRAKE, CLUTCH 5. [ ]
brake operation, starter interlock
GAUGES - speedometer, oil, air, vacuum, volt, 6. [ ]
amp, brake warning, school bus monitor board
WINDSHIELD - glass, wipers, washers, sun shield 7. [ ]
MIRROR - interior, sun shield 8. [ ]
SERVICE DOOR - operation, seals, padding 9. [ ]
INTERIOR LIGHTS 10. [ ]
HEATER, DEFROSTER 11. [ ]
FLOOR COVERING, AISLE - steps, step well, 12. [ ]
nosing, hand rail
SEATS , RESTRAINING BARRIERS 13. [ ]
secured, proper tape repairs, upholstery, seat belt
operation if equipped
EMERGENCY DOOR - operation, locking device, 14. [ ]
seals, alarm, decals, light, padding
EMERGENCY WINDOWS, ROOF HATCHES 15. [ ]
operation, buzzer, decals
WINDOWS 16. [ ]
operation, sash, frames, glass, latches
INTERIOR BODY PANELS - ceiling, side, 17. [ ]
wheel housing, any sharp edges
CLEANLINESS - trash receptacle & broom 18. [ ]

BODY EXTERIOR

LIGHTS - head, marker, stop, tail, directional, 19. [ ]
reflectors, backup light/alarm
FRONT WHEEL - bearings, kingpins, lugs, seals 20. [ ]
FRONT TIRES 21. [ ]
MIRRORS AND BRACKETS 22. [ ]
rear view, cross view
SCHOOL SIGNS 23. [ ]
SCHOOL LIGHT SYSTEM 24. [ ]
STOP ARM - if equipped crossing arm 25. [ ]
BODY - panels, rub rail, bumpers 26. [ ]
HOOD, LOCK, BATTERY 27. [ ]
STIRRUP STEPS 28. [ ]
REAR WHEELS 29. [ ]
lugs, flange bolts, leaks
REAR TIRES - including mud flaps 30. [ ]
LETTERING - vehicle markings, owner, operator, 31. [ ]
bus number, roof number, unlawful to pass,
R/R crossing, 100'

CHASSIS

STEERING - gearbox, pump, hoses, leaks 32. [ ]

CHASSIS (Con't)

pitman arm, draglink, tie-rod ends
EXHAUST SYSTEM - leaks, hangers 33. [ ]
FRONT AXLE - springs, shackles, U-bolts, 34. [ ]
shock absorbers, air suspension
HYD BRAKES - brake lines, connectors, leaks 35. [ ]
wheel cylinders, hydrovacs, drums
AIR BRAKES - valves, cams, chambers, lines, 36. [ ]
linings, drums, leaks, adjustments
TRANSMISSION - leaks, mountings 37. [ ]
EMERGENCY BRAKE SYSTEM - operation, 38. [ ]
low air warning, adjustment
DRIVE SHAFT - universal joints, guards 39. [ ]
REAR AXLE - differential leaks, leaks, springs, 40. [ ]
shackles, U-bolts, shock absorbers, seals,
air suspension
FRAME - cross members, outrigger, unibody 41. [ ]
FUEL SYSTEM – lines, brackets, leaks, fuel 42. [ ]
tank cage

ENGINE COMPARTMENT

AIR CLEANER 43. [ ]
ELECTRICAL SYSTEM - secured, wiring. 44. [ ]
BELTS 45. [ ]
HEATER VALVES 46. [ ]
ENGINE - leaks, critical components 47. [ ]

SPECIALLY EQUIPPED SCHOOL BUSES

WHEELCHAIR LIFT/RAMP 48. [ ]
wheelchair securement, door open signal, restraint system

INSPECTED BY:

_____
Inspector Signature and Badge Number

_____
Copy Received by

_____
Equipment Defects Have Been Corrected (authorized signature)*

_____
Title/Date

Must mail within (7) days to: RMV, Vehicle Safety & Compliance Services, ATTN: School Bus Compliance, P.O. Box 55892, Boston, MA 02205-5892.

[✓] INDICATES PASS

[F] INDICATES FAIL (Do NOT sign and return form. You must call RMV for reinspection of bus after repairs are made)

[E] EQUIPMENT DEFECT #_____ (repair defects and return signed form to RMV)

[ER] EQUIPMENT DEFECT (same day repair) **[FR] FAIL (same day repair)**

STICKER # ISSUED: _____

OUT OF SERVICE DECAL ISSUED YES [ ] NO [ ]

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Appendix C: Massachusetts DOT school bus inspection form

Appendix D: History of Administration Safety Statistics

In May, the school administration presented the following table of safety statistics to the school committee.

A table comparing our internal safety statistics to those of private vendors who have submitted bids in our two IFB cycles, and some local private carriers follows for the School Committees consideration:

Concord Public Schools & Concord-Carlisle Regional School District
April 30, 2012

	2-Year Continuous Data							
	Previous 2-Year Accident Record	Previous 2-Year Recorded Miles Driven	Total 2-Year Buses per Entity	Total 2-Year Drivers per Entity	Accidents per Million Miles Driven	Accidents/ Bus	Accidents/ Driver	Miles Driven Between Accidents
Illinois Central School Bus [2]	26	62,396,790	6,772	6,796	0.4167	0.0038	0.0038	2,399,877
First Student [2]	636	1,324,000,000	94,526	86,000	0.4804	0.0067	0.0074	2,081,761
Durham School Services [2]	249	381,338,728	23,962	25,042	0.6530	0.0104	0.0099	1,531,481
Local Motion [2]	7	8,448,000	264	288	0.8286	0.0265	0.0243	1,206,857
C & W Transportation [2]	5	1,280,000	86	100	3.9063	0.0581	0.0500	256,000
CPS & CCRSD [1]	28	600,000	72	72	46.6667	0.3889	0.3889	28,571
Dee Bus Service [2]	10	N/A	326	328	N/A	0.0307	0.0305	-

[1] Source: CPS/CCRSD Transportation Manager Wayne Busa and MIIA Insurance for 24 month period March 2010 to March 2012.

[2] Source: U.S. Department of Transportation, Federal Motor Carrier Safety Administration; previous 24 month data March 2010 to March 2012.

The range of miles driven between accidents for the carriers above is 28,571 miles to 2,399,877 miles. The data indicates that private carriers who submitted bids and local private bus vendors experience a significantly lower rate of accidents per million miles driven than our CPS-CCRSD transportation department.

According to this table Concord/Concord-Carlisle's buses have a lot more accidents per mile (9-times that of C&W Transit (Lexington) and 72-times First Student's (Sudbury and part of Lincoln)).

Fortunately, the School Committee noticed an error in the table (as noted in the meeting minutes)

Mr. Fondriest asked Mr. Flaherty to revise safety information into a format that compares like information to like information.

Mr. Flaherty and his staff made the revision. which is shown below. This table leads one to believe that Concord/Concord-Carlisle's buses get into accidents 13 time more often than First Student's buses and twice as often as C&W. The assertion of this table is that Concord/Concord-Carlisle's buses get into accidents a lot more often. For this reason, we contacted the Massachusetts Registry of Motor Vehicles and received a copy of their school bus accident data for the state covering 2002-2010. Analyzing the RMV data we concluded that Concord/Concord-Carlisle, First Student, and C&W have roughly identical accident rates in our region.

Concord Public Schools & Concord-Carlisle Regional School District
May 21, 2012

CPS & CCRSD Historical Annual Data [1]

	Total Annual Accidents	Total Annual Miles	Total Buses	Total Drivers	Accidents per Million Miles Driven	Accidents/ Bus	Accidents/ Driver	Miles Driven Between Accidents
FY06	9	300,000	36	36	30.0000	0.2500	0.2500	33,333
FY07	7	300,000	36	36	23.3333	0.1944	0.1944	42,857
FY08	13	300,000	36	36	43.3333	0.3611	0.3611	23,077
FY09	14	300,000	36	36	46.6667	0.3889	0.3889	21,429
FY10	7	300,000	36	36	23.3333	0.1944	0.1944	42,857
FY11	14	300,000	36	36	46.6667	0.3889	0.3889	21,429
FY12	10	300,000	36	36	33.3333	0.2778	0.2778	30,000
TOTAL	**74**	**2,100,000**	**252**	**252**	**35.2381**	**0.2937**	**0.2937**	**28,378**

2-Year Continuous Data - All Accidents

	Previous 2-Year Accident Record	Previous 2-Year Recorded Miles Driven	Total 2-Year Buses per Entity	Total 2-Year Drivers per Entity	Accidents per Million Miles Driven	Accidents/ Bus	Accidents/ Driver	Miles Driven Between Accidents
Illinois Central School Bus [2]	26	62,396,790	6,772	6,796	0.4167	0.0038	0.0038	2,399,876.54
First Student [2]	636	1,324,000,000	94,526	86,000	0.4804	0.0067	0.0074	2,081,761
Durham School Services [2]	249	381,338,728	23,962	25,042	0.6530	0.0104	0.0099	1,531,481
Dee Bus Service [2]	10	N/A	326	328	N/A	0.0307	0.0305	-
C & W Transportation [2]	5	1,280,000	86	100	3.9063	0.0581	0.0500	256,000
CPS & CCRSD [1]	28	600,000	72	72	46.6667	0.3889	0.3889	21,429
Local Motion [2]	7	8,448,000	264	288	0.8286	0.0265	0.0243	1,206,857

2-Year Continuous Data -Categorized [3] per FMCSA Methodology

	Previous 2-Year Accident Record	Previous 2-Year Recorded Miles Driven	Total 2-Year Buses per Entity	Total 2-Year Drivers per Entity	Accidents per Million Miles Driven	Accidents/ Bus	Accidents/ Driver	Miles Driven Between Accidents
Illinois Central School Bus [2]	26	62,396,790	6,772	6,796	0.4167	0.0038	0.0038	2,399,876.54
First Student [2]	636	1,324,000,000	94,526	86,000	0.4804	0.0067	0.0074	2,081,761
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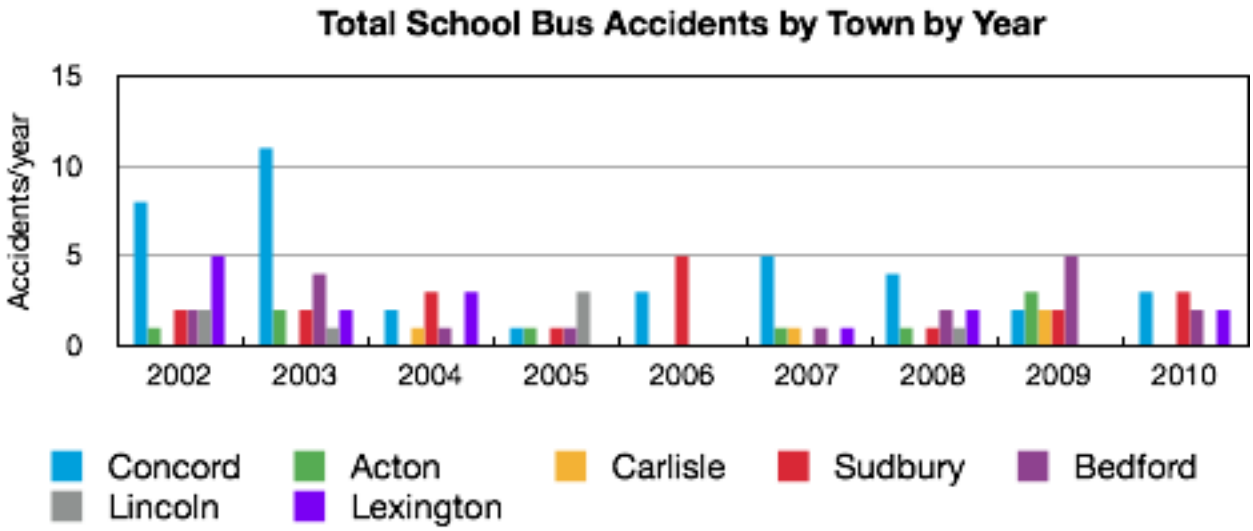
Dee Bus Service [2]	10	N/A	326	328	N/A	0.0307	0.0305	-
C & W Transportation [2]	5	1,280,000	86	100	3.9063	0.0581	0.0500	256,000
CPS & CCRSD [3]	4	600,000	72	72	6.6667	0.0556	0.0556	150,000
Local Motion [2]	7	8,448,000	264	288	0.8286	0.0265	0.0243	1,206,857

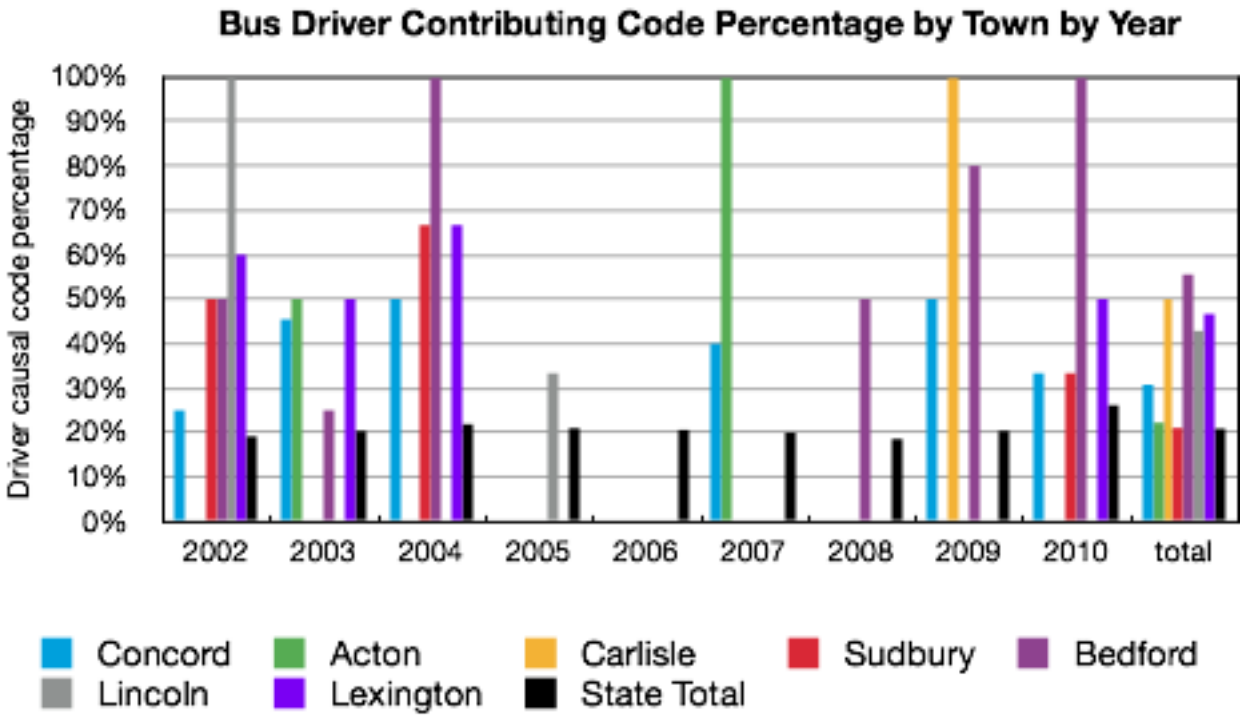
[1] Source: CPS/CCRSD Transportation Manager Wayne Busa and MIIA Insurance for 24 month period March 2010 to March 2012.
[2] Source: U.S. Department of Transportation, Federal Motor Carrier Safety Administration; previous 24 month data March 2010 to March 2012.
[3] Accidents that resulted in a fatality, injury, or tow-away as defined by the Federal Motor Carrier Safety Administration (3 injuries, 1 tow-away).



Appendix E: School Bus Accident Statistics

The chart below reflects the data from page 15 in visual form(total omitted to improve visibility of yearly data):

Applying bus driver contributing codes for each accident to determine the bus driver contributing percentage by year produces the chart below. The annual samples by town are highly variable. The choice of years can have a large effect on the results. (We've used everything the RMV could provide.) Having more years smoothes the result as can be seen in the 'totals' column group.



This chart vividly illustrates the smoothing effect of a larger sample of accident data. Each year's "State Total" is close to 21%, the 9-year average.

Appendix F: Why are CTC statistics different?

CTC's analysis differs from the administrations in the following ways:

- The CTC analysis was developed from a single database, the Massachusetts RMV accident data, making comparisons between towns consistent.
- The administration used Concord/Concord-Carlisle's insurance claims for Concord/Concord-Carlisle and the Federal Motor Carrier Safety Administration (FMCSA) accident data for contractors, which complicated comparison of Concord/Concord-Carlisle's accident rate to contractors because the insurance company and FMCSA define accidents differently.
- The RMV collects accident records from police using a uniform system. In house school buses are treated the same as contractor buses.
- The CTC results cover 9 years; the administration's only 2. The longer timeframe reduces statistical fluctuations.
- RMV accident records fail to identify vehicle's owners. So if a bus from Maynard gets in an accident while in Concord, the CTC analysis assumed it was a Concord/Concord-Carlisle bus; conversely if the Concord/Concord-Carlisle METCO bus has an accident in Boston, the CTC analysis assumed it was a Boston bus. The CTC analysis therefore assumes that most school bus accidents in a town involved that town's bus service. The administration's results reliably identify ownership.
- A possible problem with the FMSCA data is consistency between carriers. Why is C&W's accident rate 6 times that of First Student? The CTC accident analysis does not support that conclusion. C&W is a small firm located in Lexington. First Student is multinational. It may be that driving conditions in suburban Boston are particularly difficult, in which case First Student's accident rate in Sudbury might be more like that of C&W or Concord/Concord-Carlisle. This inter-company inconsistency deserves further investigation, but it is beyond the scope of this report.

How were relevant accidents selected from the RMV data?

From all school bus accidents in the RMV database the CTC analysis first selects accidents involving buses that carry more than 15 people. This is as close to the C and D type buses used in Concord as possible while excluding accidents involving smaller school buses: cars and vans.

What does "Percentage possibly contributed to by the school bus driver" mean?

No one can say for sure what causes an accident. Police record their assessment of driver contributing codes on the RMV accident form. The table below lists the codes police assigned to school bus drivers in the selected accident. This analysis tags certain codes as "possibly contributory" to causing the accident, as also listed in the table below. This assignment is a judgment that may or may not be valid. It was done 'blind' and applied to all towns uniformly. These codes thus determine the percentage of accidents possibly contributed to by the school bus driver.

From 2002-2010 the data base contained 4830 driver contributing codes. This table lists the codes assigned to bus drivers in descending order based on how many times a code was assigned. (Sometimes more than one contributing code is assigned per accident which is why for 4519 accidents police assigned 4830 contributing codes.)

School Bus Driver Contributing Code	State total 2002-2010	Possibly Contributory
(No improper driving)	2,632	No
()	650	No
(Unknown)	375	No
(Inattention)	290	Yes
(Failed to yield right of way)	160	Yes
(Other improper action)	139	Yes
(Failure to keep in proper lane or running off road)	105	Yes
(Made an improper turn)	87	Yes
(Followed too closely)	77	Yes
(Visibility obstructed)	65	No*
(Over-correcting/over-steering)	63	Yes
(Swerving or avoiding due to wind; slippery surface; vehicle; object; non-motorist in roadway; etc)	41	No**
(Distracted)	39	Yes
(Operating vehicle in erratic; reckless; careless; negligent or aggressive manner)	24	Yes
(Wrong side or wrong way)	11	Yes
(Driving too fast for conditions)	10	Yes
(Glare)	7	No
(Exceeded authorized speed limit)	6	Yes
(Illness)	5	Yes
(Operating defective equipment)	4	Yes
(Emotional)	3	Yes
(History heart/epilepsy/fainting)	3	Yes
(Fatigued/asleep)	1	Yes
(Computer)	1	No
total	**4,830**	

*Unknown - might be due to temporary problem out of control of the driver.
**Unknown - might be due to avoiding swerving cyclist or a child that ran into street.

Appendix G:CTC Meeting with Transportation Staff

Notes from CTC meeting with Transportation staff, June 21, 2012

Attendees: John Arena, Transportation Coordinator
Lisa Bergen, CTC
Wayne Busa, Transportation Manager
Mark Hanson, CTC
Joe Signor, mechanic
Matt Wells, Business Analyst

Overview

CTC members Mark Hanson and Lisa Bergen met with Wayne Busa, John Arena and Joe Signor to get a better understanding of the issues related to bus, driver, and student safety. Matt Wells attended at John Flaherty's request. The following questions were asked. Answers are below the questions.

Bus safety

Q. What is the routine bus maintenance schedule per bus?

A. Tuesdays all buses have oil, fluids, engine and mileage checks. This covers 36 buses and 29 school department vehicles

Preventative maintenance is done every 3000-5000 miles, includes oil change, checking tires, and brakes. There is a checklist that is used to assure complete maintenance work is performed. Each driver is required by law to conduct a pre and post-trip inspection of the bus. Should there be a concern, the driver would fill out a maintenance slip to let the mechanics know something needed attention.

If a bus has a problem on the road, the driver will call in over the two-way radio. Mechanics will try to triage over the radio, asking for gauge readings. If they cannot diagnose or fix via radio, the mechanic will go to the bus in the repair truck. If necessary a second mechanic will come with a replacement bus to make sure students get to their destination safely.

First priority is always student safety and then getting students to their destination.

Q. How often does a bus have to be sent out for repairs that cannot be done in house?

A. If the bus is under warranty it would be sent to the warranty service provider.

If the transportation department does not have the software on-site for a diagnosis, then the bus would be sent out to the appropriate service location, i.e., Dedham for a Cummins engine repair, or Milford for Thomas-made buses.

Buses may also be sent out for transmission repairs.

Q. How often are buses inspected by the state?

A. Buses have an annual inspection for registration.

The RMV also schedules an inspection on each bus three times a year. Typically the RMV checks 12 buses per day. This is a complete mechanical and safety equipment inspection.

Q. Are there federal inspections as well?
Drivers are required to have their vehicle inspection book on the bus. Also, if any master lights are out (red flashing lights) the bus is considered out of service and may not be driven by law.

Q. What is our failure rate for inspections?
There has been one bus put out of service during an RMV inspection.

Q. What add-on features do we have on our buses that we purchased for safety? For example, can a bus driver see the lower side of the bus using the rear view mirrors?
A. With the exception of back stop arms and cameras, all buses come standard with all available safety features. For example, there is a child check button at the back of the bus. This requires the driver to walk to the back of the bus and press the button – insuring a check of each seat.

Driver safety

Q. The contract calls for eight safety training sessions per year per driver. Is that what we do?
A. Federal law requires a minimum of eight hours of safety training. The Transportation Department offers 12-15 hours, roughly one training session per month, available to all drivers. These are posted in the Day Room in advance.

Q. What do these training sessions cover? Is it a fixed program, changing?
A. Some are standard and an expert may be brought in to present information. Some are video training sessions. Topics can vary, depending on driver requests and manager discretion and new regulations.

Q. Do our training programs conform to state, local, federal (NTSB, FHA) or union standards?
A. Our driver training exceeds all required minimums.

Q. What first aid, safety, and bullying training do the drivers receive?
A. Drivers receive the same training in first aid, bullying, and open circle training as teaching staff.
Each driver has a list of the students on their bus which includes allergy information. This list is kept confidentially on the bus with the driver. (other medical information?)

Q. How are the radios used for safety? Examples?
A. The buses have 2-way radios that are tied in with the police and fire department. The Metco drivers have push-to-talk phones.

Q. Describe the process for selecting and training new drivers. Is there a try-out/ probationary period?
A. The transportation department Manager interviews driver and takes them on a road test. This is graded. If the driver passes the road test they then interview with John Flaherty and Human Resources. Candidate must have a physical, a CORI check and their driving record is checked. Newly hired drivers are on a six month trial period during which the

transportation manager monitors their driving closely. At any time, should a driver fail to meet safety standards, they can be let go.
All drivers are subject to random drug testing (state/federal law), and an annual physical. They are also required to carry their medical card with them when driving.

Q. How much discretion does management have for deciding whether a driver should be let go?
A. The Transportation Manager monitors new drivers carefully during trial period. Drivers have been let go if their driving behavior does not meet expectations. There is a process in place to discipline or terminate an employee. The Superintendent makes the final decision on such matters.

Depot safety

Q. Is the depot lit at night?
A. Yes.

Q. Is the depot fenced and is it locked after hours?
A. The bus area is fenced and the gate is locked after hours.

Q. Generally, how are the buses kept safe?
A. Buses are not locked, but the perimeter fence is locked after hours for safety. Drivers typically use the same bus and carry the key with them.

Community safety

Q. What is the expectation for bus/driver availability in the event of a school evacuation emergency?
A. There is an evacuation plan for each school. Willard students to Sanborn, Peabody to Sanborn and vice versa, Thoreau to the Harvey Wheeler Center and the High School and Alcott to the Armory.

Q. What is the expectation for bus/driver availability in the event of a town evacuation emergency?
A. The transportation department Manager is on-call 24/7 for emergency evacuation. This includes assisting with prison and/or a hospital evacuation, as well as weather related emergencies for citizens. An example is when there was a fire on Elsinor (*sic*) Street some years ago and buses were brought in for residents to keep them warm if necessary. The transportation department Manager has a phone tree and can mobilize buses very quickly.

Q. Is this different when school out of session?
A. No, there is a summer emergency evacuation plan.

Routes

Q. Describe the process of route design.
A. Software by Transfinder is used for a basic model and then it is hand-tuned to adjust for local conditions.

Q. What would cause a route to be changed during the year?

A. New students could add to bus routes. Another example is the impact the Concord Mews will have on routes since elementary students from the Mews will be buses to Thoreau and Alcott. The middle school and high school runs will need to be extended to the Mews.

Q. How much impact does safety have on route design?

A. Safety is always a first priority. For example, Concord has many narrow roads without sidewalks. Rather than have students walk to aggregated stops, they are picked up at their driveways for safety reasons. While there are state guidelines based on distance from school that determines bus eligibility, Concord buses students within those distances if safety is a factor, i.e. crossing Route 2.

Q. Clarify the district and state regulations for what students must be bused. How do we differ from these mandates?

A. The state guidelines are 2 miles for high school students, 1.5 miles for grades 6-8, 1 mile for grades 3-5 and .5 miles for kindergarten. However Concord buses all kindergarten students.

Costs

Q. Please help us understand how drivers are paid as there is a myth in the community that drivers are paid to sit around.

A. Drivers are paid according to the steps in the contract ranging from $18.34 to $22.38 per hour. All regular drivers have a minimum guarantee of 25 hours paid, which makes them eligible for benefits and keeps us competitive in the market place.

When we are fully staffed we have 29 route drivers and four 'spare' drivers, where spare means full-time drivers who provide coverage for absent drivers and/or trips. This helps both in terms of budgeting as it limits unforeseen expenses, and in assuring level of service.

The easiest way to understand how drivers are paid is to use examples.

Example 1

Let's imagine a driver named Pat who is contracted for 27.5 hours a week.

Pat is on the clock for routes from 6:15-9:15am and again from 1:45-4:15pm, for a total of 5.5 hours each day, or 27.5 hours per week. Pat will be paid an hourly rate based on contract terms and rates.

Now, let's say that Pat is going to drive a mid-morning trip to a museum. This trip will be from 9:30-12:30, three hours. So on this day Pat will have worked 8.5 hours, 5.5 contracted hours and 3 additional hours for the trip. Pat's pay will be at the regular rate for the first eight hours and at the overtime rate for the additional .5 hour.

Example 2

Today Pat is going to drive a trip for one of the sports teams which will leave the high school at 2:15 and is not expected back until 7pm. Assume a 'spare' driver will cover

Pat's afternoon routes, which will not cost any additional money as that driver is on the clock already. As before, Pat is contracted for 5.5 hours, three in the morning and 2.5 in the afternoon. However, all drivers receive overtime for any driving after 4:15pm. In this case Pat would be paid at the regular rate for the three morning hours and for two hours in the afternoon, from 2:15-4:15. From 4:15 to 7pm Pat would be paid at the overtime rate. Drivers are also paid for a ½ hour meal period if they are working overtime between 5-8pm.

Q. How often in a school year do we have to hire other bus companies to provide transportation? What are the major reasons for this?

A. We hire out, typically Dee, approximately six times a year for drops (taking students to an event). This happens when our own buses are not available to drop students off. For example, this year because there were so many rain outs and make up sports events, eight on one day, three buses had to be hired for drops. Pick ups are scheduled for in-house service.

When we use Dee, we typically pay a flat fee of $195 per drop.

Q. What do we 'charge' for fuel, driver time, etc. for trips? How is this calculated? How is it accounted against overall transportation costs?

A. We charge $.55/mile for fuel and no additional cost for driver time is charged to the event. Comparable charge from private vendors is approximately $2.50-3.00/mile plus $15-20/hour for driver time with a minimum charge of 2-4 hours regardless of actual time.

Q. How do you bill the recreation department? Does it cover the actual costs of the services provided?

A. In the summer, the recreation department pays approximately $40-42/hour for the driver, fuel and distance. This figure is calculated by the Transportation Manager.

During the school year, routes are planned to allow students participating in recreation department activities to be dropped off at the appropriate location with no additional costs.

It is worth noting that the recreation department has not raised fees in five years, being sensitive to economic conditions.

When they learned that the in-house transportation system might be replaced , the recreation department sought pricing from private vendors. They learned that the cost would increase by approximately $20-24/hour.

Q. Is transportation provided for summer school students? Is that a fee for service or absorbed in the budget?

A. Concord does not provide transportation for local students for summer school. Metco students are provided with busing for four weeks of summer school. Two buses are used.

Appendix H: Software to extract accident codes

Appendix : Software used to extract causal codes from RMV accident data

The following perl script was used to process the RMV accident data, which is provided as a spread sheet file. This script assumes the separate fields of the spread sheet are comma separated (.csv). To prepare the spread sheet: first data within the spread sheet's cells is modified to eliminate any internal commas (in this case we substituted ";" for commas), then the data is exported from the spread sheet software in comma separated format.
The script purpose of the script is determine the causal categories associated with the driver(s) of any school bus(es) capable of carrying 15 or more passengers involved in any school bus accidents. It outputs a list of the causal categories it finds to a separate text file conveniently named "rmvAccidOut.csv".

A sample of the output file of driver contributing codes associated with particular accidents is shown below. The field "Bus Id" indicates which of the vehicles identified in the accident V1,…, Vn is a bus of interest. The bus id is then used to access the contributing codes of a driver of the same number D1,...Dn.:

Crash Number	City Or Town	Year	Month	Day	Bus Id	Index	Driver Contributing Codes
2596666	AGAWAM	10	5	3	1	0	(No improper driving)
2655669	AGAWAM	10	10	18	2	0	(No improper driving)
2676345	AGAWAM	10	12	10	3	0	(Failure to keep in proper lane or running off road)
2608319	ANDOVER	10	6	9	1	0	(Other improper action)
2653615	ANDOVER	10	10	18	2	0	(No improper driving)

A listing of the perl extraction software that produces the above output follows:

```
#!/usr/bin/perl -w
# Copyright (c) 2012 by Mark Hanson, Concord, MA.
# All rights reserved.
#
# Permission to use, copy, modify, and distribute this software and
# its documentation in source and binary forms for non-commercial
# purposes and without fee is hereby granted, provided that the
# above copyright notice appear in all copies and that both the
# copyright notice and this permission notice appear in supporting
# documentation, and that any documentation, advertising materials,
# and other materials related to such distribution and use
# acknowledge that the software was developed by Mark Hanson.

#Documentation:
```

```
#The following perl script was used to process the RMV accident data provided as a spread sheet. This script assumes the separate fields of the spread sheet are comma separated (.csv). To do this the data within the cells is modified to eliminate any internal commas. Then the data is exported from the spread sheet software in comma separated format.

#This script extracts bus driver causal categories from RMV school bus accident data.
#to run this software: run the perl with an argument for the input file name. Alter the file name to reflect the directory structure of the new data that will be importable into quicken. The file name standard includes #_yymmdd_yymmdd (from_to).

use strict;
use warnings;

my @out=();
format OUT =
@<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
<<<<<<<<<<<<<<<<<<<<<
@out
.

my @fields=0;

my $filename = "> rmvAccidOut.csv";
print "out ".$filename."\n";
open OUT, ($filename), or die "file not openable";

my $readingState = 1;# 1= header, 0 = reading transactions

my $line = <STDIN>; #header line
        @out = "Crash Number, City Or Town, Year, Month, Day, Bus Number, Index, Driver Contributing Codes"; write OUT;

LINE: while (defined (my $line = <STDIN>)) {
    if ($line =~/Bus\ \Wseats\ for\ more\ than\ 15\ people\;\ including\ driver/){
        @fields = split (/,/,$line);
        my $CrashNumber = $fields[0];
        my $CrashDate = $fields[1];
        my @date = split("/", $CrashDate);
#       print "year=$date[2]\n";
        my $CrashTime = $fields[2];
        my $CityOrTown = $fields[3];
        my $CrashSeverity = $fields[4];
        my $MaximumInjurySeverityReported = $fields[5];
        my $NumberofNonFatalInjuries = $fields[6];
```

```
        my $NumberofFatalInjuries = $fields[7];
        my $NumberofVehicles = $fields[8];
        my $MannerofCollision = $fields[9];
        my $VehicleActionPriortoCrash = $fields[10];
        my $VehicleTravelDirections = $fields[11];
        my $FirstHarmfulEvent = $fields[12];
        my $FirstHarmfulEventLocation = $fields[13];
        my $MostHarmfulEvents = $fields[14];
        my $VehicleSequenceofEvents = $fields[15];
        my $VehicleConfiguration = $fields[16];
        my $AgeofDriver_YoungestKnown = $fields[17];
        my $AgeofDriver_OldestKnown = $fields[18];
        my $DriverContributingCodes = $fields[19];

        my $NonMotoristType = $fields[20];
        my $NonMotoristAction = $fields[21];
        my $NonMotoristLocation = $fields[22];
        my $HitRun = $fields[23];
        my $RoadSurface = $fields[24];
        my $AmbientLight = $fields[25];
        my $WeatherCondition = $fields[26];
        my $StreetNumber = $fields[27];
        my $Roadway = $fields[28];
        my $DistanceAndDirectionFromIntersection = $fields[29];
        my $NearIntersectionRoadway = $fields[30];

        my $Landmark = $fields[31];
        my $DistanceAndDirectionFromLandmark = $fields[32];
        my $TrafficWay = $fields[33];
        my $SpeedLimit = $fields[34];
        my $RoadwayIntersectionType = $fields[35];
        my $TrafficControlDeviceType = $fields[36];
        my $TrafficDeviceFunctioning = $fields[37];
        my $PoliceAgency = $fields[38];
        my $SchoolbusRelated = $fields[39];
#       @out = $VehicleConfiguration.$DriverContributingCodes;
#        write OUT;

        if ($VehicleConfiguration =~/V\d:\WBus/) {
            print $VehicleConfiguration."\n";
#           print $DriverContributingCodes."\n";
            @fields = split (/:\WBus/,$VehicleConfiguration); #****there may be more than one
bus.
            my $busCount = @fields-1;
#           print "bus count = $busCount\n";
            for (my $i = 0 ; $i < $busCount; $i++) {
```

```
#                   print "i=$i fields[$i] $fields[$i]\n"; #bus fields
                    my $busNumber = chop $fields[$i]; #get a bus's number
                    my @causes = split(/D$busNumber:/,$DriverContributingCodes); #need
"DbusNumber:" rather than busNumber
                    my @driverCauses = split ( /[DP]\d:/, $causes[1]);
#                   print "$i busNumber $busNumber => $causes[1].\n";
                    print "$i busNumber $busNumber => $driverCauses[0]\n";
                    my @driverCauseList = split (/\W;\W/, $driverCauses[0]);
                    my $driverCauseCount = @driverCauseList;
#                   print "count= $driverCauseCount. list = @driverCauseList\n";
                    for (my $j=0; $j < $driverCauseCount; $j++) {
                        if (($j == 0)&&($driverCauseCount!=1)) {$driverCauseList[$j] =
$driverCauseList[$j].")";}
                        if (($j>0)&&(($j+1) == $driverCauseCount)) {$driverCauseList[$j] =
"(".$driverCauseList[$j];}

#                       {$driverCauseList[$j]=$driverCauseList[$j].")";}
                        print "$busNumber $j $driverCauseList[$j]\n";
                        @out = $CrashNumber. ",". $CityOrTown. ",". $date[2] . ",". $date[0] .",".
$date[1] .",".$busNumber. ",". $j.",". $driverCauseList[$j];
                        write OUT;
                        }
                    }
                }
            }
        next;
        }
close STDIN;
close OUT;
```

Appendix I: Building CTC's Inspection Spreadsheets

To facilitate compiling and processing the inspection statistics found in this report, data from over 1500 inspection sheets from Concord, Sudbury and Fitchburg shown in the picture below were extracted into spreadsheets for each municipality.

By extracting the data from these sheets into a spread sheet, we were able to quickly calculate the statistics shown in the report. We were also able to determine other useful information, like the average age of vehicles when inspected. One interesting study that has not yet been done is to determine the relative frequency of the different defect types versus town or provider.

A tiny sample of the data extracted from the sheets into a spread sheet is shown below. There is one row per sheet. Defect categories indicated on the sheet were extracted as the entries in columns 1 through n (below showing only the first two columns, many inspections uncovered more than two defects -- the record was nearly 10).

The "code" column indicates the severity of the defects. Defects of the eq and f type were repairable at the time of discovery. A failure of type oos (the last entry in this sample) caused the bus to be taken out of service.

yr	mo	vin	kmiles	code	1	2
8	**12**	561	64	eq	seats, restraining barriers	
8	**12**	562	72	eq3	seats, restraining barriers	
8	**12**	563	86	f3	hood, lock, battery	
8	**12**	564	59			
8	**12**	565	58			
8	**12**	566	80	f3	gauges	
8	**12**	566	80			
8	**12**	567	60			
8	**12**	568	65	oos3	steering	lights

Not shown in this table are codes in the spread sheet data that allow anyone to quickly locate the particular inspection sheet that the table entry reflects. This is useful to verify the accuracy of our findings.

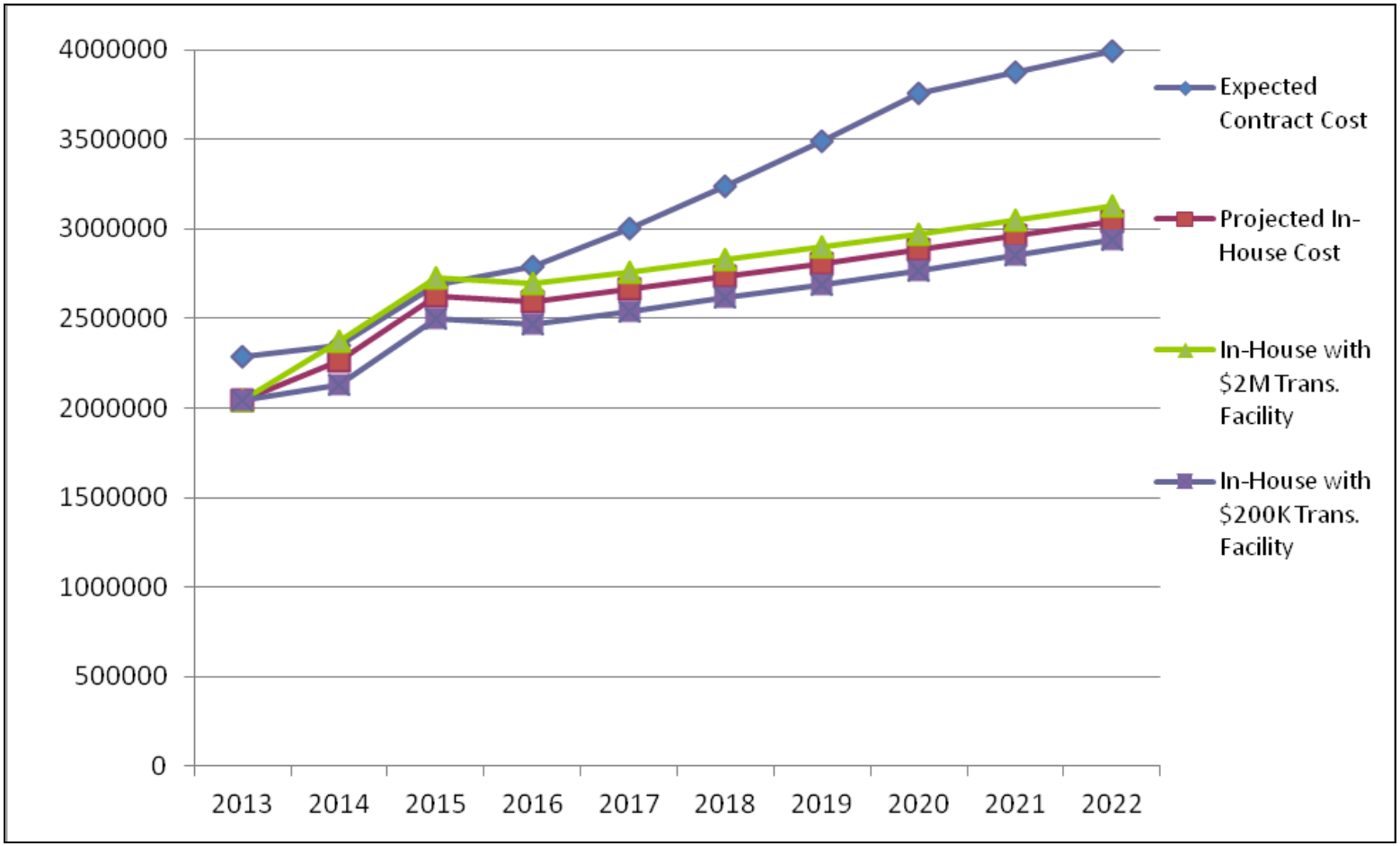
Appendix J: Cost Comparison Data

Expected Contract Costs	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Contract Pricing from April IFB	$2,446,892	$2,479,771	$2,513,125								
Inflation 3% + 4.73% per year				$2,707,407	$2,916,709	$3,142,191	$3,385,104	$3,646,796	$3,756,200	$3,868,886	$3,984,953
less Credit for sale of bus fleet	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570	-$159,570
Replace buses (3 in 2015, then 2/yr)			$302,357	$207,618	$213,847	$220,262	$226,870	$233,676	$240,686	$247,907	$255,344
Other vehicle maintenance		$30,000	$30,900	$31,827	$32,782	$33,765	$34,778	$35,822	$36,896	$38,003	$39,143
Total Expected Contract Cost	$2,287,322	$2,350,201	$2,686,812	$2,787,282	$3,003,767	$3,236,648	$3,487,182	$3,756,724	$3,874,213	$3,995,226	$4,119,870

Projected In-house Costs	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Projected In-house from budget	$1,868,790										
Projection inflated 3% per year		$1,924,854	$1,982,599	$2,042,077	$2,103,340	$2,166,440	$2,231,433	$2,298,376	$2,367,327	$2,438,347	$2,511,497
Move/rebuild Transportation Facility		$159,000	$155,100	$151,200	$147,300	$143,400	$139,500	$135,600	$131,700	$127,800	$123,900
Replace buses (3 in 2015, then 2/yr)			$302,357	$207,618	$213,847	$220,262	$226,870	$233,676	$240,686	$247,907	$255,344
Benefits - Retirements	$70,029	$72,130	$74,294	$76,523	$78,818	$81,183	$83,618	$86,127	$88,711	$91,372	$94,113
Benefits - Health Benefits	$105,043	$108,194	$111,440	$114,783	$118,227	$121,774	$125,427	$129,190	$133,065	$137,057	$141,169
Total Projected In-house Cost	$2,043,862	$2,264,178	$2,625,790	$2,592,201	$2,661,531	$2,733,058	$2,806,848	$2,882,968	$2,961,490	$3,042,483	$3,126,024

	2013	*2014*	*2015*	*2016*	*2017*	*2018*	*2019*	*2020*	*2021*	*2022*	*2023*
Expected Contract Cost	$2,287,322	$2,350,201	$2,686,812	$2,787,282	$3,003,767	$3,236,648	$3,487,182	$3,756,724	$3,874,213	$3,995,226	$4,119,870
Projected In-House Cost	$2,043,862	$2,264,178	$2,625,790	$2,592,201	$2,661,531	$2,733,058	$2,806,848	$2,882,968	$2,961,490	$3,042,483	$3,126,024
In-House with $2M Trans. Facility	$2,043,862	$2,370,178	$2,729,190	$2,693,001	$2,759,731	$2,828,658	$2,899,848	$2,973,368	$3,049,290	$3,127,683	$3,208,624
In-House with $200K Trans. Facility	$2,043,862	$2,131,678	$2,496,540	$2,466,201	$2,538,781	$2,613,558	$2,690,598	$2,769,968	$2,851,740	$2,935,983	$3,022,774

Appendix J: Cost Comparison Data



Appendix K: Bus Fleet Data

Concord Public School & Concord-Carlisle Regional School District
Fleet Detail
Projected as of June/July 2012

MAKE/MODEL	DISTR.	ROOF#/VEH#	CAPACITY C/A	TYPE/ CAP	YEAR	ENGINE TYPE	ENGINE FRONT/REAR	ID	PURCHASE COST	PURCHASE DATE	PLATE	MILEAGE	MINIMUM BID
Thomas/0908S	CPS	19	34/24	Whichr Bus	2003	Cummins	Front	1T88G4d2231129615	64,400	9/30/02	SB24491	59,863	$ 4,500
Thomas/1308S	CPS	12	77/51/L	Bus	2006	Cat	Rear	1T88R4C2461160526	70,000	1/3/05	SB28006	44,151	$ 23,400
Thomas/130YS	CPS	28	75/50/L	Bus	2006	MB	Front	1T7YR4A2261160533	77,000	1/3/05	SB28003	83,296	$ 23,400
Thomas/1308S	CPS	2	77/51/L	Bus	2006	Cat	Rear	1T88RR4C2261160525	70,000	1/3/06	SB28004	30,171	$ 23,400
Blue Bird/A3RE39	CPS	5	81/54/T	Bus	2006	Cat	Rear	1BABNBKA16F237463	68,355	11/10/05	SB10132	69,771	$ 23,400
Blue Bird/A3RE39	CPS	26	81/54/T	Bus	2006	Cat	Rear	1BABNBKA36F237464	72,655	11/10/05	SB10131	97,907	$ 23,400
Thomas/130YS	CPS	60	75/50	Bus	2007	MB	Rear	1T7YR4A2271273298	61,104	11/8/05	SB10128	115,443	$ 27,000
Thomas/130YS	CPS	61	75/50	Bus	2007	MB	Rear	1T7YR4A2271273299	61,104	11/8/05	SB10129	116,583	$ 27,000
Thomas/130YS	CPS	62	75/50	Bus	2007	MB	Rear	1T7YR4A2271273297	61,104	11/8/05	SB10127	120,621	$ 27,000
Thomas/130YS	CPS	6	75/50	Bus	2007	MB	Rear	1T7YR4A2X71279948	77,571	2/10/06	SB29309	72,129	$ 31,500
Thomas/130YS	CPS	30	75/50/L	Bus	2007	MB	Rear	1T7YR4A2871279947	77,571	2/10/06	SB29308	62,472	$ 31,500
Thomas/130YS	CPS	36	75/50/L	Bus	2008	MB	Rear	1T7YR4A2581292396	82,444	11/27/06	SB29351	66,148	$ 37,800
Thomas/130YS	CPS	35	75/50/L	Bus	2008	MB	Rear	1T7YR4A2581292397	82,444	11/28/06	SB29352	59,124	$ 37,800
Thomas/140YS	CPS	21	81/54/L/T	Bus	2009	MB	Rear	1T7YT4A2X91107598	78,374	11/6/07	SB26211	42,175	$ 45,000
Thomas/140YS	CPS	24	81/54/L/T	Bus	2010	MB	Rear	1T7YT4A28A1121357	88,738	11/20/08	SB24461	43,408	$ 53,100
Thomas/130YS	CPS	9	75/50/L/T	Bus	2010	MB	Rear	1T7YR4A23A1121359	82,524	11/20/08	SB19434	33,846	$ 53,100
Blue Bird/A3RE39	CPS	1	81/54/L/T	Bus	2010	Cat	Rear	1T7YR4A2XA1121360	82,524	11/20/08	SB25800	90,993	$ 48,600
Blue Bird/A3RE37	CPS	8	75/50/L/T	Bus	2010	Cat	Rear	1BABKBKAF267486	85,578	3/11/09	SB24462	28,382	$ 53,100
Thomas/140YS	CPS	22	81/54/L/T	Bus	2011	Cummins	Rear	1T7YT4E25B1130979	98,504	9/19/09	SB24494	11,965	$ 68,400
Thomas/140YS	CPS	7	81/54/L/T	Bus	2011	MB	Rear	1T7YT4E21B1130980	98,504	12/9/09	SB24493	22,109	$ 68,400
Thomas/140YS	CPS	17	81/54/L/T	Bus	2012	Cummins	Rear	1T7YT4E29C1143249	107,703	12/14/10	SB34782	4,811	$ 76,500

MAKE/MODEL	DISTR.	ROOF#/VEH#	CAPACITY C/A	TYPE/ CAP	YEAR	ENGINE TYPE	ENGINE FRONT/REAR	ID	PURCHASE COST	PURCHASE DATE	PLATE	MILEAGE	Minimum Bid
GMC/051MS	CCRSD	27	28/20	Bus	2000	GMC	Front	1GDJG31F3Y1260561	37,800	10/19/00	SB25799	55,094	$ 1,350
Thomas/130YS	CCRSD	31	75/50	Bus	2003	Cummins	Rear	1T7YR4E2831129616	70,400	9/3/02	BU 320	131,151	$ 4,500
Thomas/130YS	CCRSD	23	75/50/L	Bus	2006	MB	Rear	1T7YR4A2061160532	77,000	1/3/05	SB28005	90,727	$ 21,600
Thomas/130YS	CCRSD	10	81/54/L/T	Bus	2006	MB	Rear	1BABNBKA76F237466	66,705	11/15/05	SB10126	30,628	$ 23,400
Blue Bird/A3RE39	CCRSD	14	81/54/L/T	Bus	2006	Cat	Rear	1BABNBKA96F237367	74,105	11/15/05	SB10144	82,948	$ 21,600
Blue Bird/A3RE37	CCRSD	20	75/50/T	Bus	2006	Cat	Rear	1BABNBKA16F237455	72,825	11/10/05	SB231	51,982	$ 23,400
Blue Bird/A3RE37	CCRSD	3	75/50/T	Bus	2006	Cat	Rear	1BABNBKA06F235082	68,149	6/28/05	SB4024	160,841	$ 18,000
Blue Bird/A3RE37	CCRSD	4	75/50/T	Bus	2006	Cat	Rear	1BABNBKA26F235083	68,149	6/28/05	SB4148	140,676	$ 18,000
Thomas/130YS	CCRSD	33	75/50/L	Bus	2008	MB	Rear	1T7YR4A2981292398	82,444	11/27/06	SB29353	77,262	$ 36,000
Thomas/130YS	CCRSD	34	75/50/L	Bus	2008	MB	Rear	1T7YR4A2981292395	82,444	11/27/06	SB29354	79,193	$ 36,000
Thomas/101BS	CCRSD	32	39/26	Whichr Bus	2008	Cat	Front	1T88K4C2081292349	75,834	11/27/06	SB29355	48,920	$ 37,800
Thomas/140YS	CCRSD	25	81/54/L/T	Bus	2009	MB	Rear	1T7YT4A2191107599	81,374	11/6/07	SB26209	51,525	$ 45,000
Thomas/140YS	CCRSD	18	81/54/L/T	Bus	2010	MB	Rear	1T7YT4A26A1121356	89,738	11/20/08	SB24491	43,720	$ 49,500
Blue Bird/A3RE37	CCRSD	29	75/50/T	Bus	2010	Cat	Rear	1BABNBKA9AF267487	86,578	3/11/09	SB27289	51,219	$ 49,500
Thomas/130YS	CCRSD	16	75/50/L/T	Bus	2012	Cummins	Rear	IT7YR4E1C1143180	107,703	12/14/10	SB34807	7,477	$ 76,500

Appendix L: CTC Charge

Citizen School Transportation Committee

Established by the Concord Special Town Meeting on April 24, 2012

MISSION

Town Meeting, in creating this Committee, expressed an intent "to search diligently for ways to maintain the existing Bus Transportation Department."

RESPONSIBILITY

The Committee will be asked to examine a number of issues, including but not necessarily limited to the following. After a complete review of these issues, the Committee is asked to present its report by July 17, 2012 to the Concord Public Schools Committee and the Concord-Carlisle Regional School Committee, summarizing their findings and providing recommendations.

- Consider safety issues.
- Prepare a detailed analysis comparing costs associated with an in-house bus service with an outsourced one.
- Consider the value of such intangibles as (a) widespread community trust in present system; (b) confidence in local administrators, bus drivers and mechanics who know the Town well and can respond quickly in unusual circumstances.
- Identify potential sites on School-owned property, Town-owned property, or privately owned property within Concord or contiguous towns where the bus transportation activities might be relocated, and estimate the cost.
- Hold at least one public hearing to solicit comments from the public and confer with School officials.
- Write a Report with recommendations to the Concord Public Schools Committee and the Concord-Carlisle Regional School Committee.

SUGGESTED TIMETABLE

July 2, 2012	Issue draft report/ recommendations for public review
July 9, 2012	Hold a public hearing on recommendations
July 17, 2012	Present report to CPS and CCRHS Committees

MEMBERSHIP REQUIREMENTS AND EXPECTATIONS

Members will be appointed (four by the Moderator and three by the Concord-Carlisle Regional School Committee) for a term of three months to expire on July 31, 2012. The Committee should complete its business by July 31, 2012, subject to extension at the discretion of the appointing authorities.

Other Considerations

The Committee shall elect a chair and a committee clerk, who will be responsible for maintaining the record of the committee's discussions, votes, and actions.

All meetings will be conducted in conformance with the Open Meeting Law, including the proper notice and posting of meetings, and all records will be maintained in conformance with the Public Records Law.

Public discussion is expected to take place before recommendations are presented to the Concord Public Schools Committee and the Concord-Carlisle Regional School Committee.

Requests for staff assistance or operating expenses will be made in compliance with the following regulations:

KDB PUBLIC'S RIGHT TO KNOW

http://policy.ctspublish.com/concord-carlisle-masc/lpext.dll/Infobase/heading%20200289.htm/heading%20300300.htm?f=templates&fn=document-frame.htm&2.0#JD_KDB

KLK RELATIONS WITH LOCAL GOVERNMENTAL AUTHORITIES

http://policy.ctspublish.com/concord-carlisle-masc/lpext.dll/Infobase/heading%20200289.htm/heading%20300315.htm?f=templates&fn=document-frame.htm&2.0#JD_KLK

Town of Concord, APP # 6, Staff Communications with Boards

http://www.concordma.gov/pages/ConcordMA_TownManager/policies/APP6_Staff%20Communications%20with%20Boards.pdf

Appendix M: 2011-2012 Bus Runs

CPS and CCRSD Buses and Runs per day - based on posted bus route schedules

district	VEH#	Morning Runs			K runs	Afternoon Runs			Late Runs	
		CCHS	CMS/ PRIVATE	ELEMENTARY	K - all	CCHS	CMS	ELEMENTARY	PRIVATE/ LATE	LATE
CPS 2010	1	SPARE								
CPS 2006	2		cms 7:25-8:00	alcott 8:08-8:45			cms 2:30-3:10	alcott 3:25-3:58	nash/fen 3:53-4:46	
CC 2006	3	SPARE								
CC 2006	4	SPARE								
CPS 2006	5	cchs 6:38-7:12	cms 7:19-8:00	thoreau 8:05-8:45		cchs 2:17-2:47		thoreau 3:25-4:07		
CPS 2007	6		cms 7:07-8:00		nash/fen 12:20-1:17		cms 2:30-3:25		nash/fen 3:45-4:34	
CPS 2011	7	cchs 6:19-7:10	nash/fen 7:14-7:59	thoreau 8:04-8:49	thoreau k 12:00-1:09	carl cchs 2:17-3:22		thoreau 3:25-4:23		
CPS 2010	8	cchs metco 5:15-7:20	nash/fen 7:26-8:08		thoreau k 12:00-12:50		cms 2:30-3:02	willard 3:25-4:02	cchs/cmsm etco 4:10/4:30-	
CPS 2010	9	elem metco 6:15-8:30					cms 2:35-3:07	elem metco 4:10-		
CC 2006	10	carl cchs 6:15-7:12	nash/fen 7:11-8:00	willard 8:05-8:47	alcott k 12:00-12:51	carl cchs 2:17-3:14		willard 3:25-4:07		
CPS 2006	12	cchs 6:50-7:12	cms 7:13-8:00	willard 8:02-8:47		cchs 2:17-2:49	cms 2:30-3:50		cms late 3:45-	
CC2006	14	carl cchs 6:14-7:11	nash/fen 7:20-7:57	thoreau 8:12-8:47	thoreau k 12:00-12:57	carl cchs 2:17-3:21		thoreau 3:25-4:04		
CC 2006	16	cchs 6:48-7:10	cms 7:18-8:00	thoreau 8:19-8:41		cchs 2:17-2:42	cms 2:30-3:14	thoreau 3:25-3:59		
CPS 2012	17	cchs 6:42-7:10	cms 7:24-8:00	alcott 8:14-8:46		cchs 2:17-2:42	cms 2:30-3:14	alcott 3:25-4:05		
CC 2012	18	cchs 6:32-7:04	cms 7:27-8:00	alcott 8:00-8:39		cchs 2:17-2:52	cms 2:30-3:11	alcott 3:25-3:59		
CPS 2003	19	SPARE								
CPS 2006	20	cchs metco 5:15-7:20	nash/fen 7:30-8:00	willard 8:08-8:47	nash/fen 12:20-1:03	cchs metco 2:20-				
CPS 2009	21	cchs 6:22-7:11	nash/fen 7:19-7:58	willard 8:16-8:45	thoreau k 12:00-12:57	carl cchs 2:17-3:05		willard 3:25-4:02	cms late 4:30	cchs late 5:15
CPS 2011	22	carl cchs 6:14-7:09	nash/fen 7:19-8:05	thoreau 8:00-8:52	alcott k 12:00-1:09	carl cchs 2:17-3:15		thoreau 3:25-4:18		
CC 2006	23	cchs 6:14-7:13	cms 7:20-8:00	alcott 8:01-8:46		cchs 2:17-2:46	cms 2:30-3:14	alcott 3:25-4:04		
CPS 2010	24	cchs 6:48-7:10	cms 7:13-8:00	alcott 8:01-8:47	willard k 12:00-1:04	cchs 2:17-2:46	cms 2:35-3:15	alcott 3:25-3:55	nash/fen 3:52-4:55	
CC 2009	25	carl cchs 6:15-7:12	nash/fen 7:30-8:01	willard 8:18-8:47	alcott k 12:00-1:04	cchs 2:17-3:10		willard 3:25-4:11		
CPS 2006	26		cms 7:26-8:00	willard 8:14-8:48			cms 2:30-3:05	willard 3:25-3:55	nash/fen 3:53-4:37	

L Bergen 5/24/2012

CPS and CCRSD Buses and Runs per day - based on posted bus route schedules

district	VEH#	Morning Runs			K runs	Afternoon Runs			Late Runs	
		CCHS	CMS/ PRIVATE	ELEMENTARY	K - all	CCHS	CMS	ELEMENTARY	PRIVATE/ LATE	LATE
CC 2000	27				nash/fen 12:00-1:04					
CPS 2006	28	cchs 6:37-7:15	cms 7:17-8:03	willard 8:08-8:46		cchs 2:17-3:00		willard 3:25-4:03	nash/fen 3:53-4:38	carl cchs late 5:15
CC 2010	29	elem metco 6:15-8:30				cchs 2:17-2:41		elem metco 4:10		
CPS 2007	30	metco cms 5:15-8:00			nash/fen 12:10-1:12		metco cms3:20-			
CC 2003	31	SPARE								
CC 2008	32	cchs 6:25-7:12	cms 7:30-8:00	thoreau 8:05-8:47		cchs 2:17-2:55	cms 2:30-3:05	willard 3:25-3:57	nash/fen 3:54-4:26	
CC 2008	33	cchs 6:38-7:10	cms 7:27-8:00	willard 8:21-8:47	willard k 12:00-12:54	cchs 2:17-2:37	cms 2:30-3:09	willard 3:25-4:05		
CC 2008	34	cchs 6:29-7:10	cms 7:24-8:02	alcott 8:10-8:45		cchs 2:17-2:45	cms 2:37-3:07	alcott 3:25-3:54	nash/fen 3:49-4:47	
CPS 2008	35	cchs 6:29-7:10	cms 7:25-8:00	thoreau 8:06-8:46	willard k 12:00-12:52	cchs 2:17-2:52	cms 2:30-3:07	thoreau 3:25-4:11		
CPS 2008	36	cchs 6:38-7:10		willard 8:20-8:47		cchs 2:17-2:42	cms 2:30-3:08	willard 3:25-4:14		
CPS 2007	60	cchs 6:49-7:10	cms 7:20-7:57			cchs 2:17-2:43	cms 2:30-3:50		cms late 3:45-	
CPS 2007	61	cchs 6:19-7:10	cms 7:24-8:01	alcott 8:01-8:44	willard k 12:00-12:57	cchs 2:17-2:41	cms 2:30-3:21	alcott 3:25-4:06		
CPS 2007	62								cms late 4:30	cchs late 5:15

Notes:
27 is a van sized bus
19 and 32 are wheelchair accessible buses

region owns 14 buses
CPS owns 22 buses

Appendix N: 2012-2013 Bus Runs

CPS and CCRSD Buses and Runs per day - based on posted bus route schedules 2012

district	VEH#	Morning Runs			K runs	Afternoon Runs			Late Runs	
		CCHS	CMS/ PRIVATE	ELEMENTARY	K - all	CCHS	CMS	ELEMENTARY	PRIVATE/ LATE	LATE
CPS 2010	1	spare								
CPS 2006	2	cchs 6:32-7:04	cms 7:16-8:00	willard 8:11-8:47	thoreau 12:25-1:01	cchs 2:17-2:57		willard 3:25-4:02		
CC 2006	3		cms 7:10-8:00	thoreau 8:15-8:45	nash tue 12:20-1:20	cchs 2:17-2:41	cms 2:30-3:25		3:35-4:55	
CC 2006	4	cchs 6:32-7:10	cms 7:29-8:00	alcott 8:11-8:45		cchs 2:17-2:50	cms 2:30-3:13	alcott 3:25-3:59		
CPS 2006	5	carl cchs 6:19-7:06	nash/fenn 7:14-7:57	thoreau 8:04-8:46	alcott 12:15-1:02	carl cchs 2:17-3:27		thoreau 3:25-4:24		
CPS 2007	6		cms 7:26-8:00	willard 8:14-8:48			cms 2:30-3:07	willard 3:25-3:54	3:49-4:45	
CPS 2011	7		cms 7:28-8:00	alcott 7:59-8:45			cms 2:30-3:13	alcott 3:25-3:59	3:53-4:53	
CPS 2010	8	metco 5:15-7:20	nash/fenn 7:26-8:07		alcott 12:10-12:54	metco 2:20-4:40	cms 2:30-3:02	willard 3:25-4:06		
CPS 2010	9			metco 5:15-7:35		cchs 2:17-2:49		metco 4:20		
CC 2006	10	carl cchs 6:22-7:11	nash/fenn 7:19-7:59	willard 8:16-8:47	thoreau 12:00-1:00	carl cchs 2:17-3:02		willard 3:25-4:01		cms 4:30 cchs 5:15
CPS 2006	12	cchs 6:45-7:12	cms 7:12-8:00	willard 8:02-9:00		cchs 2:17-2:48	cms 2:30-3:47			cms 3:45
CC2006	14	carl cchs 6:14-7:11	nash/fenn 7:25-8:07	thoreau 8:12-8:46		carl cchs 2:17-3:18		thoreau 3:25-4:05		
CC 2006	16		metco 5:15-7:10		nash tue 12:20-1:20		metco 4:05			
CPS 2012	17	cchs 6:49-7:05	cms 7:18-8:00	alcott 8:30-8:41	nash tue 12:20-1:05	cchs 2:17-2:43	cms 2:30-3:48			cms 3:45
CC 2012	18				willard 12:00-12:55					
CPS 2003	19	spare								
CPS 2006	20	metco 5:15-7:20		willard 8:08-8:47		metco 2:20-4:40	cms 2:30-3:02	willard 3:25-4:06		
CPS 2009	21	spare								
CPS 2011	22	carl cchs 6:14-7:11	nash/fenn 7:19-7:58	thoreau 8:03-8:47	alcott 12:10-12:44	carl cchs 2:17-3:14		thoreau 3:25-4:19		
CC 2006	23	cchs 6:33-7:10	cms 7:18-8:00	alcott 8:00-8:46		cchs 2:17-2:46	cms 2:30-3:19	alcott 3:25-4:05		
CPS 2010	24	cchs 6:38-7:10	cms 7:32-8:00	willard 8:21-8:47		cchs 2:17-2:47	cms 2:30-3:08	willard 3:25-4:02		
CC 2009	25	carl cchs 6:15-7:07	nash/fenn 7:15-8:14	willard 8:14-8:45	alcott 12:10-12:53	carl cchs 2:17-3:20		willard 3:25-4:14		
CPS 2006	26	cchs 6:38-7:12	cms 7:19-8:00	thoreau 8:06-8:45		cchs 2:17-2:47	cms 2:30-3:07	thoreau 3:25-4:04		

CC 2000	27				nash th-fr 11:45-1:07					
CPS 2006	28	carl cchs 6:10-7:08	nash/fenn 7:10-8:00	willard 8:05-8:47	thoreau 12:00-1:02	carl cchs 2:17-3:13		willard 3:25-4:08		cms 4:30/cchs 5:15
CC 2010	29					cchs 2:17-2:36		metco 4:30		
CPS 2007	30	cchs 6:42-7:10	cms 7:24-8:00	alcott 8:05-8:45		cchs 2:17-2:50	cms 2:30-3:13	alcott 3:25-4:00		
CC 2003	31	cchs 6:37-7:10	cms 7:11-8:00	alcott 8:05-8:46			cms 2:30-3:22	alcott 3:25-4:00	3:52-4:50	
CC 2008	32	cchs 6:50-7:10	cms 7:26-8:00	thoreau 8:03-8:45		cchs 2:17-2:43	cms 2:30-3:08	alcott 3:25-3:57		
CC 2008	33	cchs 6:24-7:10	cms 7:30-8:00	willard 8:21-8:47	willard 12:00-12:55	cchs 2:17-2:40	cms 2:30-3:10	willard 3:25-4:08		
CC 2008	34	cchs 6:29-7:10	cms 7:15-8:00	thoreau 8:15-8:45	willard 12:00-12:58	cchs 2:17-2:47	cms 2:30-3:13	thoreau 3:25-4:09		
CPS 2008	35	cchs 6:43-7:11	cms 7:21-8:00	alcott 8:10-8:45		cchs 2:17-2:41	cms 2:30-3:14	alcott 3:25-3:48	3:53-4:47	carlisle 5:15
CPS 2008	36				thoreau 12:25-1:00					metco 6pm
CPS 2007	60	cchs 6:51-7:10	cms 7:25-8:00	thoreau 8:190-8:44			cms 2:30-3:12	thoreau 3:25-4:08		
CPS 2007	61	cchs 6:30-7:10	cms 7:18-8:00	alcott 8:12-8:45	willard 12:00-1:00	cchs 2:17-2:47	cms 2:30-3:16	alcott 3:25-3:57		
CPS 2007	62	spare								

Notes:
27 is a van sized bus
19 and 32 are wheelchair accessible buses

region owns 14 buses
CPS owns 22 buses

Disclaimer: This information is based on the routes published on the school website as of 9/2012

Appendix O: Cost Questions from the Public Hearing

Cost Factors

1. Where is the landfill site? Is it behind goose pond?

   Yes

Which site would require the least permitting?

2. They will all require some level of permitting. The Ripley/Ammendolia land and the Light Plant would require wetlands permits.
3. Of the three sites, which would be least expensive?

   The least expensive option is keeping the transportation facility exactly where it is. Next would be moving part of it such as bus parking to another location on High School premises such as the existing student parking lot. Next would be moving the entire facility on site. Next would be moving buildings or rebuilding on Town or School land and rebuilding the rest of the infrastructure. Next would be rebuilding everything on private land.
4. Is there a cost to keeping the facility where it is now?

   The cost would be minor modifications to the "ring road" around the new high school, along with re-grading. According to a landscape architect who looked at the site, the re-grading and landscape changes would cost less than $200,000.
5. Where would the fuel depot be on the high school site?

   We would prefer to keep it right where it is. Another alternative (instead of creating a new one) is joint use of a Town fuel depot. This could entail upgrade to an existing depot, installing devices on all the vehicles to measure fuel use, coming up with a non-interfering schedule – for example buses refuel once a week out of school hours, so early morning should work fine.
6. What's the timing for use of the student parking lot?

   The state first needs to decide what the problems are, and how to remediate. There is not a schedule for this yet that we know of.
7. Are you under pressure to finish the parking lot within three years?

   A long-term solution for bus parking is important because of the cost of leasing temporary space but also the cost in fuel, driver time, and wear and tear on the buses. We would like to see a permanent solution in town this year.
8. Has there been any discussion about facility one place, buses another?

This is one of the alternatives that has been looked at, but there are many advantages to having everything co-located. This includes administration offices, maintenance building, fuel depot, bus parking, and driver parking.

9. If we rebuild a single building for the buses, will it be a safety hazard for the drivers and mechanics with the gasoline fumes?

   This should not be a problem with adequate ventilation etc. It is a matter of design.

10. Is the CTC looking at short term or long term solutions?

    We are concentrating on long-term solutions although short-term needs inevitably arise.

11. What is the cost difference with keeping the bus system the way it is, tweaking it slightly, and adding another site to keep buses?

    The options for the Transportation Facility are covered in the report. Also see the answer to question 3 above.

12. How much would we save by either leaving it the way it is, or adding another bus lot to keep the buses?

    The savings could be up to $2,000,000; leaving it the way it is, is the least cost option.

13. Will you be able to put out all the costs for the public to see?

    The project costs over a 10 year period of outsourcing versus in-house operation will be published in the final report.

14. Why are your numbers and the district numbers different?

    This is covered in detail in our final report.

15. Have you included the costs of maintaining the school/town vehicles?

    We have attempted to do that, and added it into the cost projection for outsourcing.

16. Can you put a cost on the use of the buses not only to bus students but for emergencies in the town?

    This is very hard to put a cost on because it happens infrequently. However this is an area that should have been covered in the request for bids.

17. Have you been able to keep all things equal?

    We've tried to in our final report.

18. What's the best way to provide the service?

    Maintain the existing service in house, in one location in town, preferably on the existing site.

19. Does it make sense to out-source our private school transportation?

This is something that should be looked at and is identified in our final report.

20. Could you get the data for outsourcing in elementary schools in Carlisle for the past 10 years?

    We can try to do this, but it isn't a priority at this time.

21. Are there dedicated buses for Carlisle routes?

    No

22. When did the schools last buy buses? Is the money budgeted still available to buy buses?

    The last bus was bought in 2010. 2 buses were budgeted in 2011 and 2012 but not spent. The money is no longer available because buses are expensed in the year they are purchased.

23. Were the buses going to be leased to First Student?

    In the first bid (Nov 2011) they were to be leased. In the April 2012 bid the buses were going to be sold in a separate bid.

Appendix P: Safety Questions from the Public Hearing

Training (slide 3)

1. Who does the training for the bus drivers?

   Certified driver/trainers and specialists (bullying, railroad safety, etc.)

2. Is the cost for the training built in?

   Yes, but drivers are not paid for time spend in training.

3. Is there a penalty for not being trained?

   Loss of bus driver's license, which requires 8 hours/year of training.

Inspections (slide 4)

4. What is the frequency of the inspections? Will the inspection sheets be checked periodically?

   3 times a year Fall(Aug-Oct), winter (Dec-Jan), spring (April-May)

5. Are the inspections scheduled? Is there prior notice?

6. Are the bus check sheets required for inspection?

   yes

7. Who's enforcing the law saying the inspection sheet is required?

   Mass RMV.

8. Does management of the RMV periodically check the inspection sheets?

   Inspectors are employed by the RMV. This is a good question. Will ask the RMV.

9. Are the standards of road maintenance different between towns, and does that have an effect on the buses and their inspectors?

   Roads are different, effect on buses is mostly to chassis portion of inspection (about 10% of items).

10. Did you factor in the age of the bus?

    No, we only have the odometer readings. Our buses are probably older because our buses go fewer miles per year. Why fewer miles? Because our transportation depot at the high school minimizes non-route miles driven (for example if we move our bus parking area from the high school to Acton we increase our annual mileage for the fleet of 36 buses from 300,000 to roughly 440,000 miles. We also don't do weekend charters, which saves miles.

11. Do we have a good idea of where the 100,000 mile limit came from?

    Limit is more based on the condition of the bus.

Facility safety

12. If we rebuild a single building for the buses, will it be a safety hazard for the drivers and mechanics with the gasoline fumes?

    No because vehicle maintenance buildings have proper ventilation. Not any worse than a car dealership.

Accidents (slide 5)

13. Did Lexington outsource?

    Yes (C&W)

14. Should we be out-performing the state average?

    For accidents, it's unlikely because of traffic and road conditions are a factor. Most accidents not fault of bus driver.

15. Do we know if there's any RMV bias as to how they collect their information?

    The information is collected by police departments, not the RMV.

16. Do we know the total number of trip miles?

    Roughly. Concord buses travel about 8,333 miles per year on average. First Student's average is 14,006. It is a multinational company and this mileage includes non-school charters.

Accident Statistics (slides 6 and 7)

17. Are page 10 table statistics even significant?

    Yes.

18. Concord's school administration published accident-per-mile statistics showing Concord's buses got in accident far more often than Outsourcing companies. For example, the table showed First Student's buses (the provider for Sudbury and Lincoln) went 13 time further and between accidents.

    The page 10 table is normalized to the accident. It shows that our drivers do not cause accidents 13 times more often than First Student's drivers in Sudbury or Lincoln.

    However, because the sample sizes are small one should not use this table to state, for example, that Concord's drivers cause fewer accidents than Bedford's. The statistical margin of error is too large. For example, political polling is also randomly done and it

takes 1300 or so events (call to a citizen and getting answers) to give estimates that have an error of ±5%.

Driver Turnover (slide 8)

19. Do we know if we have a contractor, do we get the same drivers?

    NO

Level of service (slide 9)

20. How long are routes in each town?

    Depends. Typically about 1/2 hour max in Concord. In Framingham it's more like 1 hour.

21. Does anybody charge a penalty/fee for not taking the bus?

    No. Students who drive pay for parking at CCHS.

22. How does RMV plan the routes?

    Local school transportation planners and/or contractors plan the routes.

Appendix Q: Estimate sources

For a new, single structure to replace the existing maintenance building and the modular building, estimates were received from:

- Space Buildings (East Taunton, MA)
- DR Poulin (Fitchburg, MA)
- Rhino Building (Denton, Texas)
- Olympia Buildings (McKees Rocks, PA)
- Morton Buildings (Auburn, NH)

These estimates ranged from $480,000-$600,000, and cover the entire building, start to finish (foundation through building completion), but not any site preparation or hook-ups.

Paving estimates, for a 2 acre lot, were received from:

- Shoemaker & Jennings/Nashoba Paving (Concord)
- Lazaro Paving (Shirley)
- Johnston Paving (Sudbury)

These estimates ranged from $185,000-$250,000, and covered grading and paving only.