



February 19, 2016

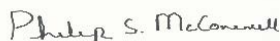
Mr. Dany Breton
Superintendent, Facilities and Environmental Services
Calgary Board of Education
1221 8th Street SW
Calgary, AB T2R 0L4

Dear Mr. Breton:

School Bus Consultants, LLC is pleased to submit the following observations, findings, and recommendations to assist the Calgary Board of Education with their development of a sustainable model for transportation services. The results of this study were based on observations and information obtained from onsite interviews and the analysis of data as provided by departmental and Board staff. The report is formatted in a manner to provide you and other senior and departmental managers with the information necessary to understand how well the system is currently operating and where there may be either opportunities for improvement or alternative models to consider.

The success of this type of study necessitates a high level of involvement from Board staff and the availability of quality data and information. We would like to take this opportunity to thank Dr. Donna Crawford for her excellent guidance into the current and past complexities of the transportation department. We would also like to thank Ms. Carrie Edwards and Mr. McArthur and the other members of the transportation staff as they were very willing to provide candid information and prompt and thorough responses to our many questions.

SBC looks forward to your thorough review of this document and the presentation of results to be scheduled at your convenience. Please do not hesitate to contact us with any questions, comments or concerns.

A handwritten signature in black ink that reads "Philip S. McLonnell". The signature is written in a cursive style and is positioned above a light yellow rectangular box.

Project Manager



Introduction

The Calgary Board of Education (CBE) provides educational services for more than 114,000 students across the City of Calgary. The Transportation Department is responsible for managing transportation services for approximately 28,400 regular and students with exceptional needs to over 220 schools and program locations. Additionally, Calgary Transit is utilized to transport approximately 11,000 secondary students to CBE schools and programs. Services are provided utilizing a contracted fleet of “yellow and black” school buses, taxis, specialized wheelchair equipped vehicles or handi-vans, and through the use of Calgary Transit buses and light-rail trains.

Board of Education staff are responsible for oversight of transportation services and the contractors that provide the service. These tasks and activities include the registration of students for transportation services, route planning and the daily management of routes and runs, assistance with student discipline, communication to stakeholders, and the oversight of the contractors including contract management and accounts payable activities.

Background

Transportation services are provided within a complex transportation network requiring the transportation of students to programs not only within their assigned school of attendance but also to center based programs for students with exceptional needs and to alternative programs that draw students from all areas of the community. This complexity is also due to growth within the community that has resulted in the need to transport students across attendance boundaries to schools that can accommodate students from the schools that are currently over capacity.

In an effort to extend the sustainability of the existing model and operate within the available funding, operational changes were made for the start of the 2015-16 school that adjusted service levels and did not increase rider fees. The key service level change was the introduction of congregated stops, some with longer travel distances from home to the stop than the previous year. This change resulted in a potential reduction of 35 route buses at an estimated annual reduction of \$1,902,075 (35 buses x an estimated annual cost per bus of \$54,345 per year).

Based on concerns brought forward by parents after the start of school that included lengthy travel distances and longer than acceptable ride times, routes were adjusted and additional buses were added. Regardless of the program they attended, stops were added to ensure an alignment with the travel distances of 1.6 and 1.8 km for elementary and junior high students. This decision resulted in the necessity for up to 50 additional buses at approximately \$2,717,300 in additional costs. (Some routes may have been added due to growth or new routes for students with exceptional needs) While this strategy has resulted in a greater level of customer satisfaction, it is not sustainable given the current funding structure.

School Bus Consultants, LLC (SBC) was engaged by the CBE to conduct an assessment of the overall effectiveness and efficiency of the current routing system and the department in general. While this baseline understanding is necessary to understand the overall effectiveness and efficiency of the system as it currently operates, the prime objective of the engagement is to help the CBE develop a more sustainable transportation model within the constraints of the current Provincial funding structure. These objectives include the development of an implementation strategy and strategic plan beginning in 2016-17 that promotes continuous improvement and sustainable service delivery given available funding sources.

Following the initial collection of data, site visits were conducted to gain first-hand observations of the operation and



to review and collect additional data. The following report is the result of these observations and the quantitative analysis of provided data.

Executive Summary

The following section summarizes the key observations, findings and recommendations related to the efficiency and effectiveness of the transportation system. The focus of these observations and recommendations is to develop a holistic picture of the administrative, operational, and financial requirements to cultivate an efficient and effective transportation operation.

Policies, Regulations, and Communications

Key Observation: While Administrative Regulations serve to document the basic criteria for the provision of service, they lack definitive parameters to guide the planning process and to support effective communications regarding the level of service and how services are to be delivered.

Key recommendations for this area include:

1. An effort should be supported to collect, validate, and document informal processes and procedures that are currently in use across the department.
2. Once departmental processes, procedures, and guidelines are documented, their efficacy should be thoroughly reviewed to ensure that they remain pertinent and compliant with other CBE rules and regulations.
3. The development of Transportation Communications protocols should be considered a priority.
4. While the Transportation Services Procedures and Information Manual is an excellent first step, it should be expanded and be available to all stakeholders.

Staffing Assessment

Key Observation: Based on the size and complexity of the transportation operation for the CBE, the number of Route Scheduling positions and technical support personnel is well below industry standards.

The initial and key observation is that for an operation that manages transportation for nearly 30,000 students with 1,100 routes using 800 buses, the number of staff that are dedicated to route planning is well below any industry standard. Additionally, as the department further implements new and enhanced routing software and supporting technology such as vehicle and student tracking systems, dedicated and specialized technical support staff will be required.

Key recommendations for this area include:

1. At least four additional Route Schedulers with the expertise in or the ability to master programs such as ArcGis and BusPlanner™ to support enhanced route planning and management activities.

2. For the department to implement and maintain software systems and the integration of supporting hardware, it is imperative that the following positions are fully staffed and dedicated to transportation functions:
 - a. Technical support for software and systems.
 - b. Systems management and maintenance i.e. the maintenance of the base map in the routing system must be updated as changes in the road network occur. In the absence of regular updates, the accuracy of planned routing solutions and the integrity of the overall routing network can rapidly degrade.
3. A systematic approach to the skills enhancement of incumbent staff should be considered. Training should not only be for new technologies but also on key district functions such as budgeting, reporting, and strategic planning.

The Use of Technology and Data Management

Key Observation: Although transportation staff have access to a variety of technology tools, the full benefit of the technologies is not being achieved due to the lack of an implementation plan, tech support, and training.

Key findings and recommendations include:

1. To obtain the full potential of the available technologies, a strategic plan for the implementation of new technology tools and the re-implementation of existing technologies should be developed.
2. A systematic approach should be developed to “centralize” the data management and reporting processes. This approach should include the data that is internal to the department such as student, bus, and route data but also line item expenditure and other financial data. This would help to ensure that there is single point of contact (within the department) for the retrieval of key reporting and measurement data, and that the available data is accurate and consistent
3. Processes and procedures regarding the use of technology should be fully documented.
4. A technology plan for the department should be developed and integrated into the overall goals for the CBE.

Routing Efficiency Analysis

Key Observation: Route designs are victim to policy and technology constraints. On average, the system is adequately efficient by most metrics, however the system is large and within it there are opportunities to improve efficiencies.

Data was analyzed for all of the regular and alternative program routes, for which data is regularly updated and monitored. From this data, an average capacity utilization of 81 percent was found based on two students per seat. Additionally, routes are not long, with over three quarters of routes lasting for less than 40 minutes. These are typical findings of systems that are of high service quality. Opportunities to retain this

level of service while improving overall efficiency are not necessarily routing problems.

Policy constraints such as eligibility for special programs and bell times cut down on efficiencies. Across over 600 routes studied in the analysis, only half were able to be “paired” or sequenced with another route during a shift. This is largely because bell times throughout the schools desiring transportation are not aligned strategically for transportation logistics. Also, certain programs are attended by students from broader attendance areas, creating long routes with low ridership because the density is lowered.

Lastly, the lack of a fully implemented comprehensive routing software package creates inefficiencies in the route planning process. The existing processes are designed to manage the system, and are relatively effective in doing so. However, a centralized database of route and student information can manage routes but also aggressively identify route design efficiencies, consolidation opportunities, and pairing opportunities.

Key findings and recommendations include:

1. Investigate areas where bell or program times, as well as facilities can be adjusted to positively affect transportation efficiency. This is a long term goal with no immediate opportunity, however important to consider during such discussions.
2. Continue to find opportunities for shared services with Calgary Transit. While yellow bus operations may or may not remain on existing contracts, the typical transit style routes can be tweaked or designed to offer services to more students.
3. Continue to implement a centralized routing technology that incorporates GPS data from buses in live time, a regularly updated student database, and effective base maps for accurate routing and scheduling.

Financial Analysis

Key Observation: Based on the current funding formula and fee structure, CBE transportation will continue to operate with a deficit absent the increase in provincial funding, student fees, increased routing efficiency, and/or a decrease in service.

For the fiscal year 2014-15 the cost of transportation was calculated to be \$11,068,941 for regular education service, \$14,461,678 for students with exceptional needs, \$18,054,196 for students attending alternative programs, and \$1,645,172 for Calgary Transit rebates and waivers for a total annual cost of \$45,229,988. The annual cost per bus for all types of transportation was calculated to be \$54,345 with the average annual cost per student of \$1,534.

While the average annual cost for a regular education student at \$819 per year is reasonable, the cost of students with exceptional needs at \$7,611 and alternative program students at \$1,388 per year account for the overall higher than expected cost per student of \$1,534. The cost per student for regular education and alternative program students is the direct result of having to transport students out of their assigned school zone either due to program location or overcrowding.

The key recommendations for the area include:

1. While an increase in the fee for service is likely to meet with resistance, it is within the control of

CBE and the rationale can be clearly illustrated.

2. The processes for the waiver of fees must continue to ensure that only families that meet clear financial guidelines are granted waivers and that Principal waivers should be granted based on well-defined criteria ensuring equal and equitable application across the system.
3. Support the recommendation for an increase in departmental staff and especially in the area of route planning. As discussed above, for every bus that is removed from service due to improved route planning, an average of \$54,345 could be saved.

Contract Management

Key Observation: The current contract and the recently developed Request for Proposals - Student Transportation Services overall set the stage for effective and efficient delivery of transportation services.

The key findings and recommendations related to Contract management are focused on a combination of concerns related to the contractual agreement and the manner in which CBE oversees the agreement. Specific concerns include:

1. A key element of the current Master Agreement that is found in Article 8 – Audits, does not appear in the draft Request for Proposals (RFP) or Form of Agreement. This article clearly defines the right of the CBE to review and audit the following:
 - i. Carrier records and supporting documents to ensure that the terms of the Master Agreement and YSA are being met or exceeded.
 - ii. The inspection of the facilities of the carrier.
 - iii. Employment records of personnel providing service the Board.
 - iv. Audits by CBE staff will not occur more than once annually.

This article should be reexamined and inserted into the RFP and Form of Contract. It is also recommended that the CBE reserves the right to conduct audits at any time during the course of the year where in the Board's judgment, that performance or safety related issues warrant an auditing of the carrier.

2. Fleet age maximums or the average age of the fleet is not discussed or described within either the draft RFP, Form of Agreement, of the Yearly Service Agreements. The establishment of fleet standards is important for multiple reasons including:
 - i. Newer buses have the benefit of improved safety and emissions equipment compared to older vehicles.
 - ii. Newer vehicles generally are more reliable resulting in less down time due to mechanical failure and maintenance.
 - iii. Newer vehicles generally provide a greater level of student comfort due to advances in seating, and heating and air conditioning systems.

Alternative Service Delivery Models

It is apparent that the CBE is highly motivated to examine and implement improvements within its transportation operation while maintaining its high level of service. Concurrent with the start of this evaluation, the CBE met with senior managers of Calgary Transit to explore mutual opportunities for collaboration. This could range from increasing routes served by CTS up to the consideration of entering into a service provider agreement. Under a service provider agreement with Calgary Transit, all operational aspects of providing student transportation could be under the auspices of Calgary Transit.. SBC was provided an opportunity to attend several of the preliminary meetings with CT and CBE representatives. CT expressed their understanding of K-12 transportation and how they feel they could be of value to the CBE as summarized below:

- Calgary Transit (CT) expressed that they have a high level of understanding of the unique requirements of K-12 pupil transportation. This understanding is in part due to providing service to secondary students but most importantly due to the fact that this concept was previously piloted in 1996. While the pilot was considered to be a success, no formal service provider agreement was signed nor was there any remuneration provided to Calgary Transit for managing the service.
- CT has embraced the use of technology throughout its organization and could transfer the benefits of their systems and their expertise in its use to ensure that K-12 transportation is operated in a manner that is both effective and efficient.
- The CT organization is of the size that it employs specialists in each of the key management and operational areas of an effective transportation operation. Examples include communications and media specialists, route planners, data analysts, technical support staff, and staff with expertise in strategic planning.
- CT expressed full understanding of the specific needs of the CBE regarding the concern for student safety at stop locations and while in transit being the most notable.
- CT views this form of collaboration as a great benefit to the City of Calgary as a whole and expressed these key points:
 - Collaboration would provide the best value and service to the community, further stating that it is “the right thing to do”.
 - That the CBE and CT share common values in trying to provide the best service possible to the customers they serve.
 - Collaboration would ensure greater sustainability for both organizations and would be mutually beneficial.

While SBC would agree that the potential for a mutually beneficial relationship appears to exist, several key areas would need further analysis and discussion. These include:

- Cost and service benefits would need to be fully analyzed to ensure that service standards would be maintained or enhanced and that cost savings are truly achievable.



- Services would need to be provided in a manner that fully aligns to CBE educational goals and safety standards.
- Methodologies would need to be designed to ensure enforcement of CBE policies and regulations.
- As the accountability for the service would remain with the CBE, a number of CBE transportation staff would need to be retained. Positions would include specialists in the area of contract management, performance analysis, and reporting.

Each of these findings and the resulting recommendations will be discussed in greater detail in the following report sections.