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Financial Advisory

Ministry of Education Effectiveness & Efficiency Review

Phase 2 Review
Student Transportation Services of York Region

May 2008

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Executive Summary

Introduction

This report details the findings and recommendations of an Effectiveness and Efficiency review (E&E Review) of Student Transportation Services of York Region ("STSYR" or the "Consortium") conducted by a review team selected by the Ministry of Education. This review is the result of government initiatives to establish an equitable approach to reforming student transportation across the province and minimize the administrative burden for school boards associated with providing safe, reliable, effective, cost efficient transportation services. This section of the report is designed to provide an overall assessment of the Consortium and detail the findings and recommendations of the overall report that were particularly noteworthy. These major findings and recommendations are enhanced and supplemented by the specific findings and recommendations detailed in each section of the body of the report.

The E&E Review evaluated the Consortium's performance in four specific areas of operation including consortium management; policies and practices; routing and technology use; and contracting practices. The purpose of reviewing each of these areas was to evaluate current practices to determine if they are reasonable and appropriate; identify whether the Consortium has implemented any best practices; and provide recommendations on opportunities for improvement in each of the specific areas of operation. The evaluation of each area was then utilized to determine an overall rating for the Consortium that will be used by the Ministry to determine any in-year funding adjustments that may be provided.

Effectiveness and Efficiency Review Summary

STSYR provides transportation for approximately 49,000 students in the Region of York (the "Region"). STSYR was formed with the purpose of reducing the overall cost of transportation while at the same time maintaining a safe, secure, efficient and dependable level of service to the students of York Region, using the most efficient and economical methodologies available. It is a collaborative venture of the York Catholic District School Board ("YCDSB") and the York Region District School Board ("YRDSB"). The Region covers 1,776 square kilometres from Lake Simcoe in the north to the City of Toronto in the south.

Formed by YCDSB and YRDSB as an amalgamation of their two transportation departments, STSYR has been operating as a Consortium since 1994. Its governance structure is a Standing Committee of the two respective school boards. Since its

formation, STSYR has accomplished many of the key steps necessary in order to fulfil its mandate as a student transportation Consortium. Notable achievements include:

- The structure and composition of the joint governance board that oversees the Consortium is appropriate to promote fairness and equal participation in decision making and ensures the rights of the stakeholders are considered equally.

- The involvement of both an external consultant and internal auditor by the Consortium to review the performance of the Consortium. STSYR has turned specific recommendations by their advisors into management action items and has leveraged this information for use in their 5 year strategic plan.

- Establishment of an operation that works in the best interests of both Partner Boards through its governance structure. A sophisticated billing and financial management system is in place to ensure the accuracy of the revenue/cost allocation between the two Boards and timely financial reporting.

- The Consortium's implementation of a fully functional transportation management information system and the extension of this system through the use of web-based communication tools. In addition, the Consortium has recognized the value and importance of the data through well documented and comprehensive data backup and disaster recovery protocols to ensure continuity of operations and maximum staff effectiveness.

- The Consortium's clear mandate to recommend bell times and affect school hour modifications is well executed enabling cost efficiency and service effectiveness.

- Establishment and implementation of a checklist based administrative, vehicle and route audit system. This is an appropriate practice to effectively manage and monitor the performance of Operators.

Based on our findings from the E&E review, the primary opportunities for improvements are:

- *Examine the establishment of a separate legal entity through incorporation* – Partnerships have several inherent risks which make them less than optimal entity structures for coordinating student transportation for School Boards. Through incorporation, a Consortium is recognized as a legal entity separate from the school boards as owners. The primary benefit of incorporation is an effective safeguard against a third party establishing any liability on the part of a member School Board. Incorporation has secondary qualitative benefits which include enhancements to the credibility of the Consortium by requiring additional public

accountability. There are more formal reporting requirements and well established incorporation by-laws that govern organizational behaviors and decision making. Clearly defined roles and responsibilities of governance provides a robust accountability framework for all key parties involved including school boards, the consortium, and Operators or other service providers under contracts. In addition, incorporation provides assurance of continuous existence and gives the consortium greater stability in the long run.

- *Pay for Use Program* – STSYR should continue to effectively and decisively phase out the Pay for Use program within a realistic timeframe with an emphasis on minimizing additional costs incurred and resources expended during the phase out period. We understand that the Consortium and School Boards will be working jointly to facilitate alternative means of transportation where possible and the current plan for phasing out the Pay for Use Program will be completed by 2010.

- *Operator Access to Student Information* – STSYR should fully assess the completeness and reliability of its student information and provide sufficient information to operators to enable effective policies with respect to identifying students en route to and from school, ineligible riders, medical support, and accurate information dissemination in the event of a major accident or incident. Under the advisement of appropriate legal counsel and through stakeholder involvement, the implementation of appropriate confidentiality clauses in transportation service provider contracts with respect to access to student information can be effectively weighed against the common goal to respect and protect personal information.

- *Accuracy of Database Information* – The Consortium should accelerate and emphasize the importance of achieving a consistently high level of continuity and refinement in the management of student data from both partner Boards. In addition, a thorough review of the numerous bus runs and stops with zero assigned loads should be undertaken to ensure that the data utilized for analysis and day to day management of the transportation system is an accurate reflection of the actual operation.

- *Database Maintenance* – The use of a secondary “test” or simulation database for evaluating route changes should be institutionalized as soon as possible. The current approach of using live data to design changes has the potential to cause confusion and to result in data errors.

- *Staff Training* – It is recommended that a regular program of staff training be institutionalized. There is a significant disparity in the technical proficiency and experience of individual Planners on the Consortium staff. Given the current

organizational structure whereby each Planner is responsible for all aspects of transportation planning within their designated school groupings, this disparity has the potential to result in inefficiencies across the system.

- *Competitive procurement process* – A competitive procurement process brings fairness, impartiality, and transparency to any procurement exercise and will allow the Consortium to purchase services from Operators that are able to meet specific requirements. Using a competitive procurement process, in particular in urban centres, will provide the Consortium with the opportunity to obtain the best value for their money and set service level expectations. Furthermore, this process will reflect market prices as it allows Operators to submit proposals, based on achievable operational efficiency and an appropriate return on investment, with full knowledge of the service level requirements as specified by the Consortium. Additionally, it provides a fair and measurable basis for evaluating Operator performance and allows the Consortium to utilize financial incentives to meet desired service levels. In areas where this process may not be appropriate, the Consortium can use the competitively procured contracts as a proxy for service levels and costs negotiated with the Operators.

Funding Adjustment

As a result of this review, STSYR has been rated as a **Moderate** Consortium. Neither the YRDSB nor YCDSB have a transportation deficit in the 2006-2007 fiscal year. Based on Ministry policy, a funding adjustment is not required. Please refer to section 7 of this report for further discussion on the funding adjustment.

1 Introduction

1.1 Background

1.1.1 Funding for Student Transportation in Ontario

The Ministry provides funding to Ontario's 72 school boards for student transportation. Under Section 190 of the *Education Act* (Act), school boards "may" provide transportation for pupils. If a school board decides to provide transportation for pupils, the Ministry will provide funding to enable the school boards to deliver the service. Although the Act does not require school boards to provide transportation service, all school boards in Ontario provide service to eligible elementary students and most provide service to eligible secondary students. It is a school board's responsibility to develop and maintain its own transportation policies, including safety provisions.

In 1998-1999, a new education funding model was introduced in the Province of Ontario outlining a comprehensive approach to funding school boards. From 1998-1999 to 2007-2008, an increase of over $195 million in funding has been provided to address increasing costs for student transportation, such as fuel price increases, despite the fact that there has been a general decline in student enrolment in recent years.

1.1.2 Transportation Reform

In 2006-07, the government began implementing reforms for student transportation. The objectives of the reforms are to build capacity to deliver safe, effective and efficient student transportation services, achieve an equitable approach to funding and reduce the administrative burden of delivering transportation, thus allowing school boards to focus on student learning and achievement.

The reforms include a requirement for Consortium delivery of student transportation services, effectiveness and efficiency reviews of transportation Consortia, and a study of the benchmark cost for a school bus incorporating standards for safe vehicles and trained drivers.

1.1.3 The Formation of School Transportation Consortia

Ontario's 72 school boards operate within four independent systems:

- English public;
- English separate;

- French public; and
- French separate.

As a result, a geographic area of the province can have as many as four coterminous school boards (i.e. boards that have overlapping geographic areas) operating schools and their respective transportation systems. Opportunities exist for coterminous school boards to form Consortia and therefore deliver transportation for two or more coterminous school boards in a given region. The Ministry believes in the benefits of Consortia as a viable business model to realize efficiencies. This belief has been endorsed by the Education Improvement Commission in 2000 and proven by established Consortium sites in the province. Currently, the majority of school boards cooperate to some degree in delivering transportation services. Cooperation between boards occurs in various ways, including:

- One school board purchasing transportation service from another in all or part of its jurisdiction;
- Two or more coterminous school boards sharing transportation services on some or all of their routes; and
- Creation of a Consortium to plan and deliver transportation service to students of all partner school boards.

Approximately 99% of student transportation service in Ontario is provided through contracts between school boards or transportation Consortia and private transportation Operators. The remaining 1% of service is provided using board-owned vehicles used to complement services acquired through contracted private Operators.

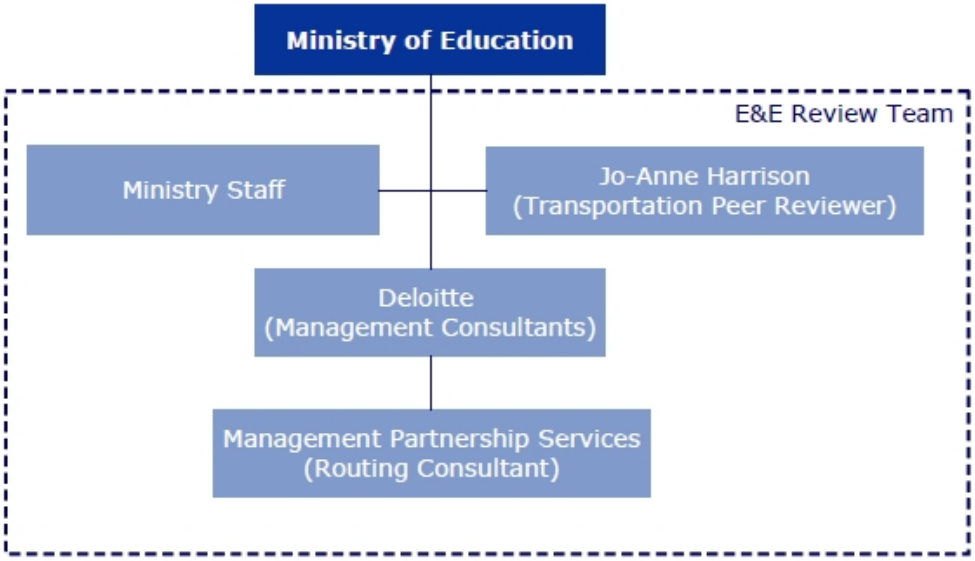
1.1.4 Effectiveness and Efficiency Review

According to the Ministry Consortium guidelines, once a Consortium has met the requirements outlined in memorandum SB:13, dated July 11, 2006, it will be eligible for an E&E review. This review will be conducted by the E&E Review Team who will assist the Ministry in evaluating Consortium management, policies and practices, routing and technology, and contracts. These reviews will identify best practices and opportunities for improvement, and provide valuable information that can be used to inform future funding decisions. The Ministry has established a multi-phase approach to review the performance of consortia (collectively the “E&E Reviews”) across the province. Phase 1 of the E&E Reviews was completed in March 2007 and included reviews on 4 consortia sites. As a result, a total of $7.6M in additional funding was provided to the reviewed boards.

1.1.5 The E&E Review Team

To ensure that these reviews are conducted in an objective manner, the Ministry has formed a review team (the "E&E Review Team" as defined in Figure 1) to perform the E&E Reviews. The E&E Review Team was designed to leverage the expertise of industry professionals and consulting firms to evaluate specific aspects of each consortium site. Management consultants were engaged to complete assessments on consortium management, and contracts. Routing consultants were engaged to focus specifically on the acquisition, implementation, and use of routing software and related technologies and on policies and practices. The Transportation Peer Reviewer has provided the E&E Review Team with valuable insight into student transportation delivery in Ontario.

Figure 1: E&E Review Team



1.2 Scope of Deloitte Engagement

Deloitte was engaged to lead the Team and serve as the Management Consultants of the E&E Review Team. Deloitte's overall role is as follows:

- Lead the E&E Review for each of the first five (5) transportation Consortium to be reviewed in Phase Two (refer to Section 1.1.4);
- At the beginning of each E&E Review, convene and moderate planning meetings to determine data required and availability prior to the review;

- Lead the execution of each E&E Review. The Ministry facilitated the process by providing the Consortium with information required in advance so that preparation and collection of information would be done prior to the on-site review;

- Review Consortium arrangement and governance structures, and contracting procedures;

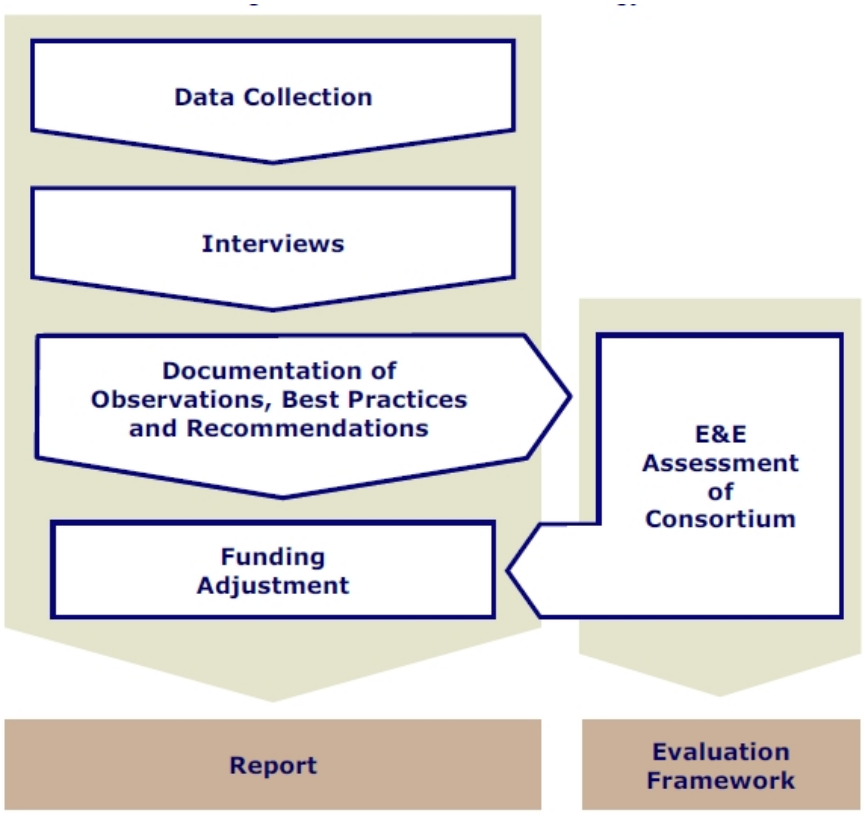
- Incorporate the results of the routing and technology review in addition to the policies and practices review to be completed by MPS; and

- Prepare a report for each Consortium which has undergone an E&E Review in Phase Two. The target audience for the report will be the Ministry, the Consortium, and its Partner Boards. Once finalized, each report will be released to the Consortium and its Partner Boards.

1.3 Methodology Used to Complete E&E Review

The methodology for the E&E Review is based on a 5 step approach, as summarized in the following sections.

Figure 2: E&E Review Methodology



A site review Report which documents the observations, assessments and recommendations is produced at the end of a site review. The Evaluation Framework, which provides the details on how the Assessment Guide was applied to reach an Overall Rating of each review site, has been developed to provide consistency.

1.3.1 Step 1 – Data Collection

Each Consortium under review was provided with the E&E Guide from the Ministry of Education. This guide provides details on the information and data needs that the E&E review team would require, and the E&E Guide will become the basis for the data collection.

Data is collected in four main areas:

1. Consortium Management;
2. Policies and Practices;
3. Routing and Technology; and
4. Contracts.

1.3.2 Step 2 – Interviews

The E&E Review Team identified key Consortium staff, outside stakeholders and key policy makers with whom interviews would be conducted to further understand the operations and key issues impacting delivery of effective and efficient student transportation services.

1.3.3 Step 3 – Documentation of Observations, Best Practices and Recommendations

Based on data collected and interviews conducted, the E&E Review Team documented their findings under three key areas:

- Observations which involved fact based findings of the review, including current practices and policies;
- Best Practices used by the Consortium under each area; and
- Recommendations for improvements based on the Assessment Guide. The key criteria used in the Assessment Guide to determine the effectiveness and efficiency of each Consortium are given below:

Effectiveness

Consortium management

- Distinct entity focused on providing student transportation services for the partner boards
- Well defined governance and organizational structure with clear roles and responsibilities
- Oversight body exists with the mandate to provide strategic directions to the consortium management on the provision of safe, effective and efficient transportation service to support student learning
- Management has communicated clear goals and objectives of the Consortium and these are reflected in the operational plan
- Well established accountability framework reflected in the set up and operation of the consortium including documentation of terms in a Consortium Agreement
- Operations are monitored for its performance and continuous improvement

- Financial processes ensure accountability and equality to Partner Boards
- A budgeting process is in place which ensures timely preparation and monitoring of expenses
- Key business relationships are defined in contracts

Policies and Practices

- Development of policies is based on well-defined parameters as set by strategic and operational plans to provide safe, effective and efficient transportation service to students of the school boards; and
    - Policy decisions are made with due considerations to financial and service impacts to partner boards
    - Communication between the consortium and partner boards facilitates informed decision making on issues directly affecting student transportation
    - Consortium's policies and practices are adequate and in compliance with all relevant safety regulation and standards
    - Practices on the ground follow policies

Routing and Technology

- Advanced use of transportation management software to store student data, and create a routing solution.
- Disaster recovery plans and back up procedures are in place and operating properly
- Responsibility and accountability for student data management is clearly identified
- Routing is reviewed regularly
- Reporting tools are used effectively
- Special needs routing is integrated with regular needs where reasonable

Contracts

- Competitive contracting practice is used

- Contract negotiations are transparent, fair, and timely
- Contracts are structured to ensure accountability and transparency between contracted parties
- Contracts exist for all service providers
- Ongoing compliance checks for safety, legal and service requirements are performed by the consortium

Efficiency

Consortium management

- Oversight committee focuses only on high level decisions
- Organizational structure is efficient in utilization of staff
- Streamlined financial and business processes
- Cost sharing mechanism are well defined and implemented

Policies and Practices

- Harmonized transportation policies between partner boards enable efficient planning
- Proper level of authority delegated to consortium to enable the realization of potential efficiencies e.g. bell times setting
- Best practices in planning are adopted e.g. utilize tiered runs and combination runs to maximize the use of available capacity
- Public transit usage is optimized where available and efficient
- Service levels are reasonable and comparable to common practices

Routing and Technology

- System can be restored quickly if database fails
- Student data is accurate, requires little post processing verification
- System functionalities are used to identify efficiencies

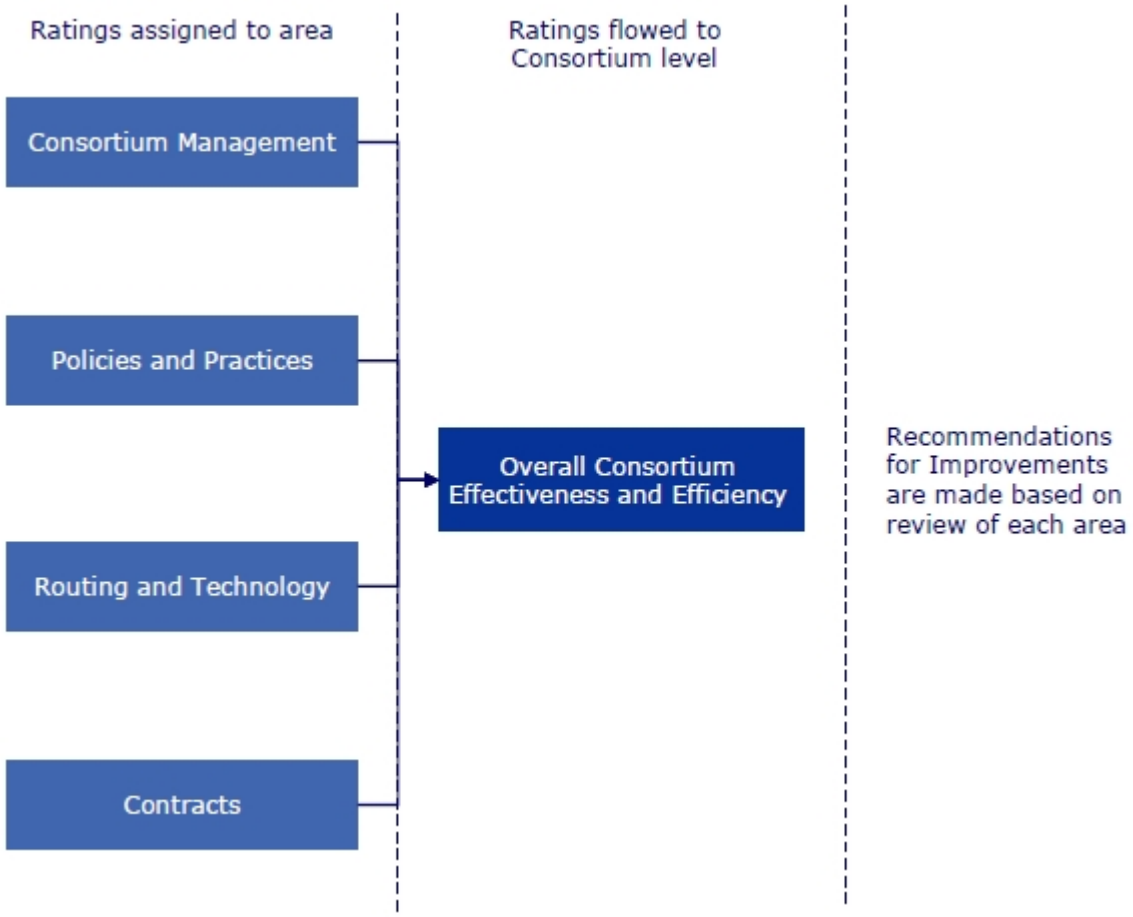
Contracts

- Contracts awarded are based on market prices and best value for money
- Fair payment terms are included in contracts and implemented with clarity to both parties

1.3.4 Step 4 and 5 – E&E Assessment of Consortium and Site Report

The Assessment Guide was developed to enable the E&E Review Team to provide each Consortium that undergoes an E&E Review with a consistent, fair, and transparent method of assessment. The Assessment Guide is broken down between the four main components of review (i.e. Consortium Management, Policies and Practices, Routing and Technology, and Contracts) and, for each, illustrates what would constitute a specific level of E&E (refer to Figure 3 for diagram of process).

Figure 3: Assessment of Consortium – Diagram Flow



The Evaluation Framework provides details on how the Assessment Guide was applied, including the use of the Evaluation Work Sheets, to arrive at the final Overall Rating. The E&E Review Team then compiled all findings and recommendations into an E&E Review Report (i.e. this document).

1.3.5 Funding Adjustment

The Ministry will use the results of the E&E reviews and the cost benchmark study to inform any future funding adjustments. Only Boards that have undergone E&E Reviews are eligible for a funding adjustment. Table 1 illustrates how the Overall Rating will affect a Board's transportation expenditure-allocation gap.

Table 1: Funding Adjustment Formula

Overall Rating	Effect on deficit boards[1]	Effect on surplus boards[1]
High	Reduce the gap by 100% (i.e. eliminate the gap)	No in-year funding impact; out-year changes are to be determined
Moderate-High	Reduce the gap by 90%	Same as above
Moderate	Reduce the gap by 60%	Same as above
Moderate-Low	Reduce the gap by 30%	Same as above
Low	Reduce the gap in the range of 0% to 30%	Same as above

1.3.6 Purpose of Report

This Report serves as the deliverable for the E&E Review conducted on STSYR by the E&E Review Team during the week of December 3, 2007.

1.3.7 Material Relied Upon

Refer to Appendix 3 for a list of documents that the E&E review team relied upon for their review. These documents were used in conjunction with interviews with key Consortium staff, outside stakeholders, and key policy makers.

1.3.8 Limitations on Use of This Report

The purpose of this Report is to document the results of the E&E Review of STSYR. The E&E Review is not of the nature or scope so as to constitute an audit made in accordance with generally accepted auditing standards. Therefore, as part of this E&E Review, Deloitte has not expressed an opinion on any financial statements, elements, or accounts to be referred to when reporting any findings to the Ministry. Additionally, procedures used by the E&E Review Team are not intended to disclose defalcations, system deficiencies, or other irregularities.

[1] This refers to boards that have a deficit/surplus on student transportation (see Section 7 – Funding Adjustments)

2 Overview of Consortium

2.1 Introduction to STSYR Student Services Consortium

STSYR provides transportation for approximately 49,000 students in the Region of York. STSYR was formed in 1994 for the purpose of reducing the overall cost of transportation while at the same time maintaining safe, secure, and reliable school transportation services to the students of York Region, using the most efficient and economical methodologies available. It is a collaborative venture of the York Catholic District School Board ("YCDSB") and the York Region District School Board ("YRDSB"). The Region covers 1,776 square kilometres from Lake Simcoe in the north to the City of Toronto in the south.

Table 2 below provides a summary of key statistics of each Board:

Table 2: 2006-07 Transportation Survey Data

Item	YCDSB	YRDSB
Number of schools served	94	174
Total students transported daily[2]	18,039	31,439
Total special needs[3] transported students	916	2,343
Total riders requiring wheelchair accessible transportation	51	154
Total specialized program[4] transportation	528	6,593
Total courtesy riders (Pay for Use Program ridership)[5]	620	1080
Total hazard riders[6]	-	-

[2] This figure excludes the courtesy rider numbers imputed from the RCETS Pay for Use Program. See footnote #5.
[3] Includes students requiring special transportation such as congregated and integrated special education students who require dedicated routes and/or vehicles; students who must ride alone; students who require an attendant on the vehicle.
[4] Includes students transported to French immersion, magnet and gifted programs. Students with special needs who are transported to specialized programs are captured as special needs transported students.
[5] As discussed in section 4.2.1 and section 6.2.1 of the report; the Consortium does not permit courtesy riders, however for completeness of the report included here is the number of paid courtesy riders under the Pay for Use program (this estimated split between the two boards was determined based on the relative number of students transported for each school board).
[6] Hazard riders are not reported within this Transportation survey data as the Consortium reduces the walk boundaries for these specific students who would otherwise be hazard riders to show them as eligible within their reported data.

Item	YCDSB	YRDSB
Total Number of Contracted Vehicles	360	770
Total contracted full- and mid-sized buses[7]	220	363
Total contracted mini-buses	73	217
Total contracted school purpose vehicles[8]	7	12
Total contracted physically disabled passenger vehicles (PDPV)	-	-
Total contracted taxis	60	178

Table 3: 2006-07 Financial Data[9]

Item	YCDSB	YRDSB
2006/2007 Transportation Allocation	15,440,222	32,136,269
2006/2007 Transportation Expenditure	15,110,455	30,540,878
2006/2007 Transportation Surplus (Deficit)	329,767	1,595,391
Percentage of transportation expenditure attributed to STSYR Student Services Consortium	100%	100%

The catchment area served by STSYR is experiencing rapid growth in population; York is one of the fastest growing Regions in Ontario. From 2001-2006 approximately 2/3 of all of Ontario's population growth was concentrated in a handful of census divisions with York Region being the largest contributor[10]. This rapid population growth is translating into higher student populations. Some of YCDSB's and YRDSB's work in response to the increasing student population is to open new schools in areas where population growth is concentrated, however, delays in establishing new schools and/or programs in these growth areas is linked to increasing transportation costs. STSYR has worked to mitigate some of the population growth pressures and has used strategies, such as staggered school bell times, to maintain cost stability.

[7] Includes full-sized buses, mid-sized buses, full-sized buses adapted for wheelchair use and mid-sized buses adapted for wheelchair use; all vehicle counts are rounded to the nearest whole number
[8] Includes school-purpose vans, mini-vans and sedans
[9] Based on Ministry Data – see Appendix 2.
[10] http://www.fin.gov.on.ca/english/economy/demographics/census/cenhi06-1.html

The establishment of STSYR is the result of a long history of cooperation and collaboration between the participating Boards as a collaborative effort through the amalgamation of the respective boards' transportation departments. The consortium currently transports approximately 49,000 students per day to over 260 schools using a contracted fleet of approximately 1,100 vehicles. Each board's transportation needs are served 100% by the consortium; there are neither services purchased from any other consortium nor does STSYR sell services to other consortia or school boards.

3 Consortium Management

3.1 Introduction

Consortium Management encompasses the management of the entire organization providing student transportation services. The analysis stems from a review of the four key components of Consortium Management:

- Governance;
- Organizational Structure;
- Consortium Management; and
- Financial Management.

Each component has been analysed based on information provided by the STSYR Consortium, and from information collected during interviews with Transportation Managers and selected Operators. The analysis included an assessment of best practices leading to a set of recommendations. These results are then used to develop an E&E assessment for each component, which is then summarized to determine an E&E assessment of Consortium Management as shown below:

Consortium Management – E&E Rating: Moderate-High

3.2 Governance

Governance refers to the way in which an organization is directed and controlled. Establishing administrative structures and processes which facilitate and monitor effective business management are primary responsibilities of a governance structure. Three key principles for an effective governance structure are as follows: accountability, transparency, and the recognition of stakeholders. In order to respect these three principles, it is important that the governance body be independent of the management of day-to-day operations.

3.2.1 Observations

Governance Structure

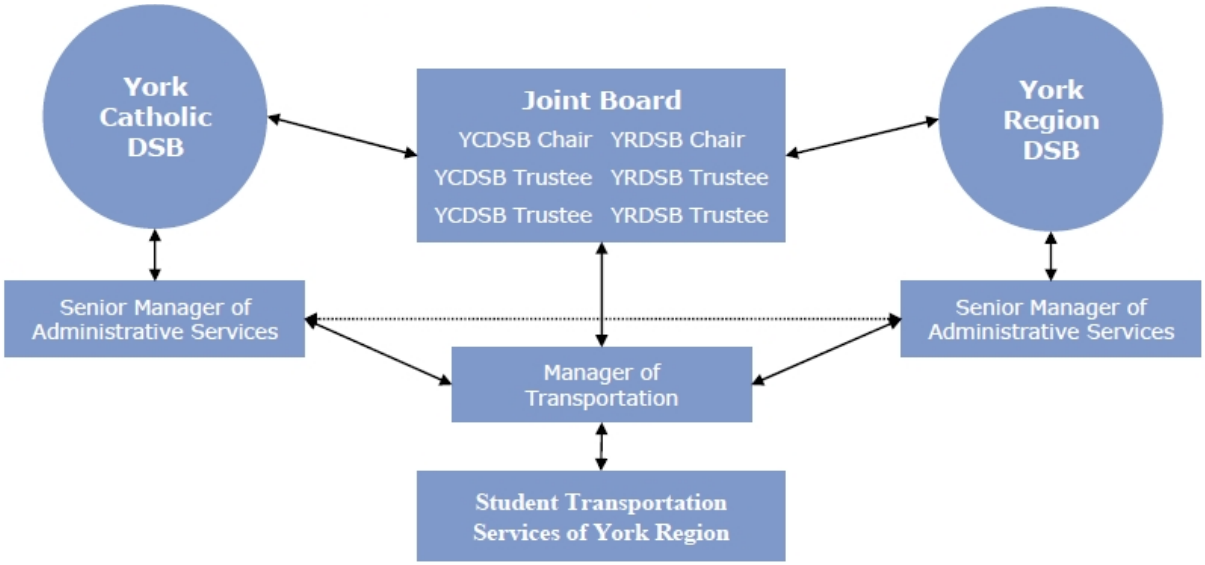
The role of a governance committee is to ensure that the Consortium is focused on an overarching objective while allowing management to run the day to day operations. Its function is to provide oversight and ensure that all key stakeholders are appropriately represented. Documentation should support the appropriate roles and responsibilities of

its members allowing the structure to be maintained indefinitely, and the level of responsibility should be focussed on oversight of the consortium with no interference with the daily operation of the business.

In 1994, the respective transportation departments of the two boards began operating as a single entity to coordinate transportation services for both school boards. According to the Terms of Reference, the Consortium is responsible for school bell time scheduling, policy direction and development, financial controls, and cost allocation as it relates to student transportation for the boards which it serves.

The Joint Board is the governance body that oversees the operation of the Consortium. The Joint Board consists of eight members: one Chair and two Trustees from each Board. Senior Managers of Administrative Services from the School Boards are the points of contact with the Consortium. Each Chair and the Trustees from both Boards have voting privileges in making transportation related policies and directing strategic directions for the Consortium. Each individual has one vote and decisions follow the majority rule. The Joint Board meets four times a year to discuss any issue related to student transportation and approves policies/regulations, business decisions, and the Consortium's annual budget. Meeting minutes are well kept by the Joint Board.

Figure 4: Governance Organizational Chart



Board Level Dispute Resolution Policy

The board level dispute resolution policy is a stand alone document that defines the terms in place to resolve disputes between the Boards. The policy advises that all disputes be referred to mediation for mandatory Alternative Dispute Resolution, and a

Mediator shall be selected and approved by the Boards. Any dispute between the Boards which cannot be resolved through the mediation shall be submitted for determination by arbitration pursuant to the Arbitration Act of Ontario (the “Act”). The policy has also defined the timeline at each action stage and the allocation of costs between the two Boards.

3.2.2 Best Practices

It is recognized that the Consortium has demonstrated best practices in the following areas:

- The Joint Board that oversees the Consortium has equal representation from each Board which promotes fairness and equal participation in decision making and ensures the rights of the stakeholders are considered equally. There is a clear delineation (demonstrated both in formally documented terms and as observed operationally) between the roles executed by those in a governance capacity and management of the Consortium. This is a key element in effective governance and management;

- The Senior Managers of Administrative Services at both School Boards work very closely with the Consortium Manager while at the same time respecting a clear delineation between the day to day management of the Consortium and high level policy and strategic matters that are handled at the Joint Board level. The positive working relationship between the two Boards and the Consortium allows for open communication amongst all parties;

- The Joint Board meeting takes place four times a year (more if required) and requires both a formal agenda and minutes in a public forum, making the Consortium accountable and transparent to its stakeholders; and

- A board level dispute policy is in place between the Boards. The policy is an effective mechanism to protect the rights of both Boards. It ensures that the decisions made represent the best interests of both Boards.

3.3 Organizational Structure

An organizational structure can have the power to provide for effective communication and coordination which will enable operations to run efficiently. The roles and responsibilities within the organization should be well defined. This will lead to operational efficiencies by ensuring tasks are not being duplicated and issues raised can be addressed effectively by managing up the chain of command. Ideally the

organization is divided functionally (by department and/or area) and all core business functions are identified.

3.3.1 Observations

Entity Status

At the formative stages of the Consortium, discussions were held between the two Boards which determined that forming an unincorporated Consortium as a Standing Committee of the respective Boards was the best option for both Boards at the time. The resulting Consortium has no legal standing separate from YCDSB and YRDSB. The Consortium does not enter into contracts with any third party; rather it negotiates them on behalf of the Boards.

The Consortium is physically located in the YCDSB building. The office space lease agreement is between the Consortium and YCDSB. The lease is signed by the two Associate Directors from the School Boards, one from each of the Boards representing the Consortium, and the Senior Manager of Administrative Services from the YCDSB. Lease agreements have existed since the Consortium was formed.

Organization of Entity

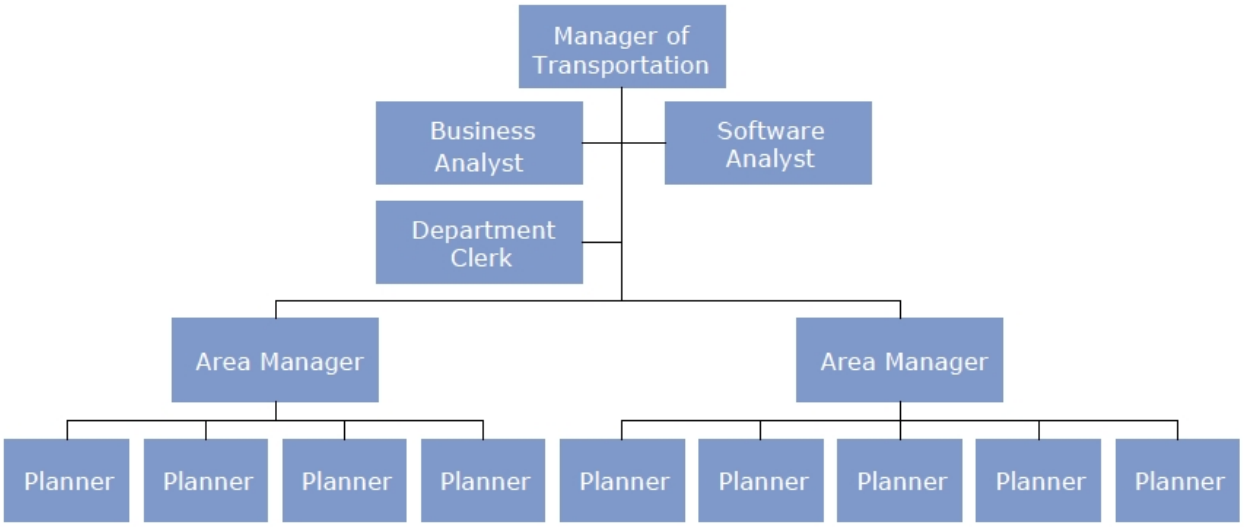
The organizational structure of the Consortium reflects clear reporting mechanisms. Roles and responsibilities are clearly defined in the job descriptions of employees, and are updated as needed.

The Consortium Manager oversees the overall operation of the Consortium. Two area managers report directly to the Manager of the Consortium and manage all the transportation planners. The Department Clerk and Business Analyst work directly with the Manager to provide administrative, research, and analytical assistance.

The Route Auditor who currently conducts route audit works part time for the consortium but like most employees who work for the consortium is paid through the YCDSB payroll. As a general practice of YCDSB, no contract is issued to this part time employee. This position is not reflected in the Organizational Chart as the consortium’s working papers only reflect full time employees. A job description is not in place for this position.

The organizational chart shown in Figure 5 shows the structure of the organization.

Figure 5: STSYR Organizational Chart[11]



3.3.2 Recommendations

Establishment of a Separate Legal Entity

Generally speaking, all partners of a partnership are jointly liable for all debts and liabilities of that partnership. Similarly, any one partner can bind all other partners to matters involving the partnership. As a result, partnerships have several inherent risks which make them less than optimal entity structures for coordinating student transportation:

- The risk that the actions of one Partner Board may be leaving the other Partner Boards open to liability;
- The risk that Partner Boards can be involved in litigation for issues involving students that are not part of their school board; and
- The risk that liability, brought about through the partnership, may exceed the existing insurable limits. The consortium should investigate with the assistance of their insurance carrier their coverage related to, but not limited to, punitive damages, human rights complaints, and wrongful dismissal lawsuits. It is also recommended that the Consortium investigates, with its insurance carrier, the applicability of errors and omissions insurance.

[11] Note that there is one part time route auditor that is not indicated on the organizational chart because the chart reflects full time employees only. The route auditor is employed on a part time basis by YCDSB.

Based on these risks the Partner Boards should explore the establishment of the Consortium as a Separate Legal Entity through incorporation to formalize and improve its current contracting practices. The creation of a Separate Legal Entity effectively limits risk to the Partner Boards for activities related to the provision of student transportation. Thus, when an incorporated entity takes responsibility for student transportation services, this incorporated entity status is an effective safeguard against any third party establishing liability on the part of a member School Boards. Over the long term, changing political environments and potential disputes amongst the Partner Boards could cause the current structure to destabilize. The formalization of the Consortium as an incorporated entity would provide benefits from an organizational perspective in terms of corporate continuity, staff planning, liability, contracting and management.

3.4 Consortium Management

Consortium Management focuses on the operational aspects of the organization. This includes ensuring accountability of staff, focusing on continual improvement through operational planning, and risk management by having appropriate contracts and agreements in place to clearly define business relationships.

3.4.1 Observations

Consortium Formation

A consortium may exist in practice; however it is only by defining the terms of the arrangement that a consortium becomes truly effective. This is due to the fact that a large part of a consortium's ability to function well is based on its members, both in terms of Partner Boards themselves and the staff operating the consortium. Personnel will absolutely affect the operation of a consortium and as those personalities change over time it is essential that a consortium be well defined in terms of structure and operation so that future personnel are guided by a common practice. Having a well defined consortium agreement will ensure that the operations will remain consistent and intact in the future. It also reduces the chances of a misunderstanding and/or conflict between Partner Boards.

The York consortium was formed in 1994 by YRDSB and YCDSB through the formation of two standing sub committees under each school board who work together and include the consortium's governance committee or Joint Board. Minutes of the Joint Board document and approve their responsibilities to the Partner Boards and in turn define the responsibilities of the management of the Consortium which includes definition of their mandate, operations, and accountabilities. Further minutes of the joint

board define the cost sharing principles in place and approve the policies which govern the operators of the consortium.

Cost Sharing

Each year the specific terms of the cost sharing mechanism are documented in a Memorandum of Agreement and signed by both YRDSB and YCDSB. Costs are shared between the Boards proportionately on a per student basis. The boards have also agreed to equally share the costs for administration.

Service Purchasing Agreement

The Consortium has the discretion to purchase support services from either of the School Boards. Since the Consortium is physically located within the YCDSB offices, it purchases support services such as IT, HR, Payroll and accounting services from the YCDSB. Procurement services are purchased from both YCDSB and YRDSB. There are no agreements in place that support the hourly rates and service levels that the Consortium receives from the School Boards. The YCDSB invoices YRDSB directly for fifty percent of all the service expenses incurred related to the Consortium. No approval process is in place for the Consortium Manager to verify the invoices issued by YCDSB to YRDSB against the services the Consortium received before the invoices are issued.

Insurance

Both Boards are protected from potential liabilities by the general insurance purchased at the Board level. The Boards review insurance needs and insurance amounts and whenever new transportation service contracts are negotiated; however no working papers result from this review. In December 2007, as a result of the E&E review, the consortium solicited verbal confirmation from their insurance provider as to the sufficiency and cost effectiveness of the insurance coverage. The Consortium does not carry separate insurance specifically for student transportation services nor is this possible given the current entity status. The overall strategy of the Consortium is to ensure that contracts with bus operators effectively share accountability related to the transportation of students to the Operators where appropriate. The assessment of the overall effectiveness of this strategy must take into account comments with respect to access to accurate and timely student information as discussed in section 4.4.3 below. Each Board employs an internal Risk Management expert to review insurance coverage levels and ensure their Board is suitably protected from potential liabilities.

Long Term and Short Term Planning

STSYR has sought external assistance to improve its student transportation services and increase efficiencies. In 2003, STSYR contracted the consulting arm of IBM to

review its operations resulting in numerous recommendations being proposed. The Management of the Consortium developed its long term strategic direction and short term implementation plans around the recommendations.

The Consortium has a strategic planning process in place that takes into account the IBM review results and E&E objectives as aligned with each Board's own strategic plans. The current strategic plan reflects the 5 year period ending in 2008. In late 2007, STSYR finalized their new Five Year Operational Plan 2008-2012 as an updated revision of the previous 5 year plan. The draft 5 Year Operational Plan for 2008-2012 was presented to the Joint Board in November 2007. The Joint Board received the document with some requests for revisions to be presented at the next Joint Board meeting for approval in February 2008. The progress of IBM recommendation implementation has been tracked by the Consortium staff.

Consortium Key Performance (Service) Indicators ("KPIs")

KPIs are statistics that can be reviewed or analyzed to evaluate the operation of the Consortium and are practical indicators to help identify areas for improvement. Indicators include the following:

1. Internal Indicator: Eligible Unassigned Student Lists, Route Crow Fly List, Student Map Match Rates, MapNet Login status, Total Students Transported, Monthly Budget Forecast, Average Vehicle Statistics, Total Vehicles in Operation, and Student Ride Times; and

2. External Indicator: the results of the Route Audit Report, Total Routed Kilometres, Site Visit Report, Late Bus Summary Report, and Average Vehicle Statistics.

Both internal and external indicators have been tracked and compared. The KPIs are reviewed by STSYR Management on a monthly basis and shared with staff to facilitate performance level improvements.

Internal Audit

In the interest of efficiency and cost reduction, STSYR uses the internal auditing services from the YCDSB and YRDSB. For each of the finding topics in the internal auditing report, both "recommendation" and "Management Response" are documented. To complement the internal audit and to provide value added initiatives to stakeholders, STSYR has spent time developing and tracking its progress through Strategic Planning documents.

Employee Management

The employees, outlined in figure 5, are currently contractually employed by the School Boards. Out of 15 employees, two planners are employed by the YRDSB and the rest of the staff are employed by the YCDSB. All employees are subject to their Board's respective payroll, pension, and performance evaluation frameworks.

Consortium management sees minor inefficiencies in having employees from two different boards; however, the administrative burden from having two performance evaluation frameworks and separate paperwork, for such things as vacation requests, is not material according to management. It has been decided by Consortium Management that when the two remaining YRDSB employees who work as planners for the Consortium retire, their replacements will be employed by the YCDSB to further ease the administrative burden so that all staff who work at the consortium will be employees of YCDSB.

Employee Performance Evaluation Frameworks

Annual staff performance reviews are conducted by Consortium Management. STSYR uses the Performance Management Frameworks created by the YCDSB and YRDSB for their own employees. Similar to any other large organization, these frameworks exist to be used in a number of different circumstances. The design of the frameworks ensures that they meet the needs of all departments of that organization. As a result STSYR relates the Performance Management Frameworks of the YRDSB and YCDSB directly to consortium goals and objectives to ensure the process is value added.

Employee Training

Mandatory Consortium internal staff training (new-hire orientation) and job related technical training is provided to staff on a regular basis. Training invoices are kept on file and separate working papers allow STSYR to track who has received training and when the training occurred. Training manuals for the planning software are provided to planners as guidance. See section 5.2.3 for comments related to staff proficiency with systems and processes and the resulting recommendations for improvements.

Pay for Use Program

No Courtesy rider services are provided by the Consortium for students who do not qualify for the bus ride under the current policy. However, those students can purchase "Pay for Use" passes through Regional Community Education and Transportation Services ("RCETS"), a non-profit Ontario corporation which is owned by YCDSB and YRDSB. In essence this is a paid courtesy rider program.

Each year, after the transportation routes are generated, excess capacity is identified on existing routes. Parents can register and buy seats through the RCETS website[12]. Service can be purchased for a monthly fee of fifty dollars ($50). Revenues collected by RCETS are split equally between the two Boards and recognized as other revenue in the board's financials (not as an offset to transportation expenses). In 2006-2007, RCETS provided services for approximately 1,700 students, and generates revenues of $850K annually. The Consortium does not charge RCETS for routing systems support, planner time, or administration. There is no contract in place between RCETS and the Consortium for services provided by the Consortium.

The financial data surrounding this program is incomplete given that there are no charges from the Consortium to RCETS for providing support services in terms of routing and planning. It is understood that the Pay For Use Legacy Plan will phase out the Pay For Use program by 2010 and we encourage the Consortium to fully execute the plan to ensure that resources are concentrated on the effective and efficient provision of transportation for students who qualify for transportation. The Pay for Use Program is discussed in term of policies and practices in section 4.2.1; it is also discussed in terms of routing in section 5.5.1.

3.4.2 Best Practices

It is recognized that the Consortium has demonstrated best practices in the following areas:

- The Consortium has a formalized process of documenting and agreeing on the cost sharing basis to be used for the given school year. Memorandums of understanding with a defined term which address the transportation costs and administrative / overhead costs are signed by representatives of each school board. The agreement defines administrative costs in terms of subcategories that are dependent on student population (to be divided on a per student basis) and those costs that are not driven by student count (to be divided on a 50/50 basis). The agreement also defines a 50/50 revenue sharing mechanism for consortium revenues generated through service agreements with other boards.

- The Consortium does confirm on an annual basis the adequacy of its insurance coverage with its insurance company. While no working papers result from this confirmation as the confirmation was provided verbally this practice does ensure that insurance coverage in terms of adequacy is periodically reviewed and kept current as a concern of management.

[12] http://rcets.cmiregistration.com/

- Both an external consultant and internal auditor are used by the Consortium to review the performance of the Consortium. In the past, the external consultant provided management type consulting services, while the internal auditor provided financial audit review type services. Through management discussion and board involvement, STSYR turned specific recommendations by the external consultants into management action items and leveraged this information for use in their 5 year strategic plan.

- The Consortium's long term and short term planning process allows itself to remain focused on goal-oriented initiatives aimed at improving service levels, operational procedures and accountability frameworks. The planning process takes into account the recommendations provided by their external advisor.

3.4.3 Recommendations

Contracts for Support Services

There is no contract between YCDSB and the Consortium for services which the YCDSB provides to the Consortium. Therefore, services are obtained by the Consortium and paid without terms, conditions, and service levels normally associated with such an arrangement. STSYR identified this need and noted this issue for comment by the E&E review team. It is recommended that all of the services which the Consortium procures are established via agreement or contract where the mutual interests of the Consortium and service provider, in this case the YCDSB, are documented and agreed upon.

This is especially important in terms of, for example, the priority which the YCDSB would give to the Consortium in terms of fixing a significant system failure, or also the binding of the YCDSB IT staff to confidentially agreements related to YRDSB student information which they can access through their roles in system and database support.

Approval of Invoicing from YCDSB to YRDSB

The YCDSB currently directly invoices the YRDSB for fifty percent of services which the Consortium procures from YCDSB. This process occurs without the involvement of the Consortium in terms of reviewing and approving the charges being allocated to the YRDSB. It is recommended that the Consortium manager review and approve any such invoices for Consortium costs before they are invoiced to the YRDSB as the Consortium manager is best qualified to approve the validity and quantum of the invoices. Another method of accomplishing this is to ensure that invoices sent to the YRDSB are accompanied by a signed purchase order from the Consortium to the YCDSB related to the services procured. This would enable the YRDSB to quickly identify the invoices to

correspond to 50% of the Consortium approved purchase order thus supporting the validity of the invoices from the YCDSB.

3.5 Financial Management

A sound financial management process ensures the integrity and accuracy of financial information. This includes the internal controls that exist within the accounting function and ensures that a robust budgeting process is in place which provides for accountability in decision making. This section reviews financial performance of the Consortium over the past three years to gain an understanding of any major variances year over year. The purpose of this review is to understand what decisions the Consortium has made which have either increased or decreased transportation expenditures.

Financial management policies capture roles and responsibilities, authorization levels, and reporting requirements. The planning calendar refers to key dates for compliance, monitoring policies, or specifics to ensure proper segregation of duties. The policies support that a proper financial internal control system is in place for the Consortium.

3.5.1 Observations

Accounting Practices and Management

Accounting processes can be effective and efficient if the process is well defined and provides sufficient controls over assets. The Consortium leverages the accounting services from the YCDSB finance department which has established a separate account to record all Consortium transactions. The Consortium reviews and approves all third party billings prior to payment by the School Boards. The reconciliation of the expenses is conducted by the Business Analyst examining and consolidating all incoming invoices with the GL on a monthly basis. The chart of accounts is split out by type of transportation and administrative expense, e.g., taxi, special needs, operating expenses etc.

Segregation of duties is addressed in the job descriptions and in practice is achieved by only certain people having the authority to record, verify, and approve invoices. The YCDSB accounting staff records all Consortium expenses in the GL and GL viewing rights are given to the Consortium Manager and the Business Analyst. A monthly budget variance analysis is prepared by the Business Analyst and is reported to the Senior Managers of Administrative Services for review and approval. The report compares actual expenditures against budget allotments. It is used as a management tool to identify instances of over-expenditure and to monitor budget progress.

YRDSB and YCDSB are not subjected directly to external financial audits, however the Board level external financial audits covers the transportation line items which represent the activities of the Consortium.

Billing Process and Management

In order to facilitate the process by which operators submit payment requests to the Consortium for the services they render, a spreadsheet is provided to all the bus operators by the Consortium with a built in functionality to calculate payments based on the current contractual terms.

The spreadsheet is locked to allow input from the Operators in terms of transportation volumes only and is programmed to split the resulting transportation costs between the two Boards according to the cost sharing agreement. The spreadsheet calculates the amounts claimed by the Operators for that month's services. When the spreadsheet is sent back to the Consortium, it is checked and signed by both the Department Clerk and the Business Analyst before it goes to the Consortium Manager.

After the Transportation expenses are approved and signed by the Consortium Manager, the Consortium issues invoices directly to the School Boards according to the output of the spreadsheet. The School Boards pay the Operators directly. For services purchased by the Consortium from 3rd party suppliers, these costs are split equally between the two Boards using the same billing procedures as transportation costs that result in an invoice to each Partner Board.

Budget Planning and Monitoring

The budgeting process facilitates a detailed review of current expenditures versus budget allocations for Consortium Management and Board Administration.

Preliminary budget – Preliminary budget planning process begins each year in early spring. It is based on prior year data and historical patterns with projected increases for all transportation related and administrative expenses. Big purchases (i.e., IT Equipment) are subject to the Joint Board approval.

Budget Approval – After the budget is approved by the Joint Board, it is "locked"; no further changes can be made to the budget.

Actual expenses are tracked against budget on a monthly basis by the Business Analyst. Variance analysis is performed and internally reviewed by the Consortium Manager on a monthly basis. The variance analysis is also provided to the Senior Managers of Administrative Services by the Consortium Manager monthly.

3.5.2 Best Practices

It is recognized that the Consortium has demonstrated best practices in the following area:

- Financial management policies are in place to guide financial control, review and approval and communications with School Boards and transportation Operators.

3.5.3 Recommendations

Budgeting Process

Although a budgeting process is in place for STSYR, it does not provide a precise timeline for drafting and approval. It is recommended that a timeline be documented and board approved providing a rough timeframe for management to abide by. Flexibility can be built into the timeline to accommodate any unforeseen circumstances. The 2007-2008 budget documentation should be updated to reflect the recently adjusted GST rate.

3.6 Results of E&E Review

Consortium Management at STSYR has been assessed as **Moderate-High**. York has appropriate organizational and oversight structures and practices in place to ensure accountability and transparency. These structures and processes ensure that the Consortium is operating in the best interest of the boards and the financial management processes in place demonstrate that appropriate controls exist to protect assets and ensure the accuracy of financial reporting to stakeholders.

The Consortium is not independent from its Partner Boards either in legal terms or by physical separation. Becoming a Separate Legal Entity through incorporation would allow the Consortium to address some of the liability related issues that the E&E Review Team has identified. It would also give the Consortium additional autonomy to further the interests of students who qualify for transportation services. It is important that the Consortium be granted sufficient autonomy to negotiate its own support services ensuring that costs are appropriately charged to the Consortium in order to truly understand all costs associated with providing student transportation services.

4 Policies and Practices

4.1 Introduction

Policies and practices encompass the development and consistent application and enforcement of transportation standards of service. The analysis for this area focused on the following three key areas:

- General Transportation Policies & Practices;
- Special Needs and Specialized Programs; and
- Safety and Training Programs.

This analysis was based on interviews with Consortium staff and the review of supporting documents. Best practices, as established by the E&E process, provided a point of comparison for each of these keys areas resulting in the following observations, comments, and recommendations. These results were used to develop an E&E assessment for each of the key components; and to determine the overall effectiveness of the Consortium's Policies and Practices as shown below:

Policies and Practices – E&E Rating: Moderate

4.2 Transportation Policies & Practices

The establishment of clear and enforceable policies is a critical component of an effective and efficient transportation operation. Policies are designed to establish service parameters and define services that will be provided. Practices, as defined in written procedure documents and guidelines as well as the operational protocols followed by staff, implement these policies by defining *how* services will be provided. The degree to which policies are harmonized among the Partner Boards and the degree to which actual practice adheres to established policy are equally important in helping to ensure that service is delivered safely and equitably to the partner and service purchasing boards. This section will evaluate the established policies and practices and their impact on the effective and efficient operation of the Consortium.

4.2.1 Observations

Policy Development and Harmonization

The Consortium is charged with the responsibility for establishing the operational procedures and practices of the Consortium which ultimately determine the level of services provided. In order to guide the provision of service and promote fairness and

equity, the Consortium has established a joint Procedures Manual which was developed based on each Board's individual transportation policies. Most critical planning and service related policies are defined in the manual including eligibility, walk distances, stop placement considerations, and ride length expectations. Additionally, student conduct guidelines, service cancellation procedures due to weather events, and the process for appealing decisions of the Consortium are all detailed. The Procedures Manual is a useful document for staff and Consortium stakeholders because it is defined as the primary source of operational guidance. While the development of the manual is an excellent practice, the specific details addressed within the manual require additional consideration.

Eligibility for transportation is a critical planning parameter because it defines the demand for service that must be addressed. In addition to eligibility for service, walk to stop distance requirements have a significant influence on the ability of the Consortium to design effective and efficient bus runs and routes. In evaluating these policies it is important to consider the degree of harmonization between Partner Board policies because of the influence this critical planning parameter has on how transportation staff develop bus routes.

Walk distances to stop and service eligibility are detailed in the Procedures Manual as defined by Board policies. Walk to stop distance requirements are harmonized for all students across the consortium. The Consortium provides a reasonable degree of flexibility by allowing for alternate bus stop locations provided that the alternate addresses are within the boundary of the school of attendance and the alternate location is used consistently throughout the week. Service eligibility parameters are harmonized for JK through Grade 8 at 1.2 kilometres and 1.6 kilometres respectively. However, eligibility for secondary students varies by board as follows:

- *York Catholic District School Board* – Secondary students without access to municipal transit service shall have their non-transportation zone reduced to 3.2 kilometres as opposed to 4.8 kilometres for students with access to public transportation.

- *York Region District School Board* – Secondary students residing in an area with public transportation are ineligible. Secondary students without access to municipal transit and reside more than 3.2 kilometres are eligible for transportation.

Student ride times are an important indicator of service level that is generally addressed through establishment of Consortium policies. The Procedures Manual states that "total ride times reflect individual board policies" and the *Route Planning Principles* established by the Consortium states the Consortium will work to ensure that students

in grades JK-6 do not travel longer than 60 minutes to or from school and students in grades 7-12 do not travel longer than 75 minutes to or from school.

Although interviews with Consortium Management indicate that route planning is consistent with *Route Planning Strategy* goals, written policies and practices for this area are inconsistent which *may* lead to variation in service levels. The following illustrates the conflicts in ride time statements:

- *York Catholic District School Board* – No specific ride times are stated in Board policy and reference is made back to the Procedure Manual as the source of planning criteria guidance.

- *York Region District School Board* – Board policy charges the Manager of STSYR with the responsibility of ensuring that students from JK to grade 6 do not spend more than 45 minutes on the bus. Students in grades 7 to 12 shall not spend more than 60 minutes on the bus.

While the majority of policies are harmonized, there are several important areas of different or conflicting policy or procedure statements including walk distances, courtesy riders, and student ride times. These differences have the potential to create confusion for the route planners and increase the possibility of different service standards across the consortium. The Procedures Manual attempts to remedy and/or clarify any questions or concerns by referring to the individual Board policy statements. However, some of the differences are not fully clarified in any of the documents.

Courtesy Transportation and Hazard Transportation

The establishment of courtesy and hazardous transportation service is generally intended to increase the safety and service levels of the transportation program. Provision of these services should be based on defined criteria that are regularly reviewed to ensure that service to these otherwise ineligible students is not adversely impacting the overall routing network. Additionally, management of these programs must ensure that the Consortium has clear knowledge of which students are riding on its buses in the event of an incident.

The Boards have established a Pay for Use program to provide services for students on a courtesy basis. These students are ineligible for service based on established distance to school criteria but have the option to pay a fee for service. Eligibility for this service is not defined in YCDSB policies while YRDSB establishes eligibility based on available capacity at an existing stop and considerations of economic hardship. However, Pay for Use service has been offered to students of both Boards. The Procedures Manual defines the service to include service availability, bus stops locations, fees, and registration procedures.

It is understood that this service is currently being phased out with no guarantee of service beyond the 2007-2008 school year with completion of the phase out plan by the year 2010. The Legacy Plan for phasing out the pay for use program provides a general outline of the approach STSYR will implement to transition students off the Pay for Use program. The plan provides an adequate framework for the elimination of this program and should be implemented in as timely a manner as possible. The approximately two year timeline appears to be related to the need to coordinate services with York Regional Transit and to identify other viable alternatives for the approximately 1,700 users of the system. The Pay for Use program is discussed in terms of consortium management in section 3.4.1; it is assessed in terms of routing in section 5.5.1.

The provision of service to students living in a hazardous area is certainly a reasonable approach given the need to ensure the safety of students to and from school. Hazardous transportation is considered for reasons of safety including traffic volume, speed zones, and safe walking routes. However, hazardous boundary criteria are not clearly defined in either policies or the Procedures Manual. The lack of definition of these specific criteria can lead to questions of fairness and equity. In addition, there is no process established to regularly review defined hazard areas to ensure that they still meet eligibility criteria and that the students within those areas still should receive service.

Bell Time Management

The Consortium has a clear mandate to influence the establishment of school bell times in the interest of service efficiency. An annual process has been established where the Consortium investigates opportunities to modify bell times with the intent of improving service and/or controlling costs.

Communication

The Consortium uses a number of different tools and techniques to distribute information to its stakeholders. Information regarding stop location and expected pick up time is sent to students through the schools prior to the end of the school year in order to minimize the confusion related to September school start. In addition, aggressive use of the Consortium's website and the web-based functionality of the routing software are used to provide information to parents, schools, and the bus operators. Of particular note is the establishment of a late bus report that allows operators to update parents on the status of the bus through the Consortium website.

4.2.2 Best Practices

It is recognized that STSYR has demonstrated best practices in the following areas:

- The Consortium has established a clear and concise procedures manual that serves as a valuable reference point for staff and other consortium stakeholders. While specific aspects of the manual have been identified as requiring further consideration, the establishment of a detailed reference document is an effective practice to ensure consistent implementation and enforcement of Consortium policies.

- The Consortium has adopted a number of different communications tools to transmit information to all its stakeholders. The establishment of the Consortium website as a mechanism to distribute both static (e.g., policy and documentation related) and dynamic information (e.g., the daily late bus report) is an effective use of the available technology.

- The Partner Boards have recognized the influence of school bell times on transportation efficiency and effectiveness and have established an important and influential role for the Consortium in the planning process. Expressly authorizing STSYR to present alternative bell times to improve resource utilization allows administrators and Trustees to more fully understand the service and cost tradeoffs in any transportation program.

4.2.3 Recommendations

Policy and Practice Documentation Review

As discussed in the previous sections, operational practices appear to support service equity in the daily delivery of transportation across the service area; however, the lack of full policy harmonization introduces the potential of inconsistent service and variations in decision making.

In the absence of full policy harmonization, the Consortium should consider a comprehensive review of the Procedures Manual to ensure that it fully addresses and explains the operational policies and practices of the Partner Boards.

Pay for Use

The planned elimination of the Pay for Use program should proceed as quickly as possible and be fully implemented by the timeframe identified in the PFU Legacy Plan. The lack of documented eligibility criteria and the incomplete identification of these students in the routing database (see Section 5.5.1) create difficulties in effectively managing and integrating this service into the overall routing network. Elimination of this program should allow the Consortium to focus planner time on designing and analyzing effective routing schemes for eligible students.

4.3 Special Needs and Specialized Programs

A fully effective transportation system is able to provide service to all students including those with special needs and those attending special programs. Behavioural issues, mobility of the student and special equipment operation, medical conditions and medicine administration, and the time and distance tolerance of each student must be considered in the planning of special education transportation. Transportation to centre based or specialized programs is faced with similar challenges as transportation is often required from remote areas. With the service and cost pressures these programs place on the system, seeking opportunities for inclusion on regular education routes helps to reduce costs by utilizing the entire fleet to the highest degree possible. This section examines the policies and practices that determine the planning for special needs and specialized transportation and how well practice conforms to established policies.

4.3.1 Observations

Each of the Board's policy statements and the Procedures Manual address the needs of students requiring special needs transportation through a designated representative in each respective board. School administrative personnel are responsible for ensuring that the Consortium is provided with all relevant health and contact information for each individual student. The Consortium is responsible for designing transportation that meets the individual needs of the student *and* promotes overall routing efficiency. Policy statements support routing strategies that may include placement on regular education routes when appropriate for the individual student. Supporting procedures have also been developed for the use of booster seats, securing of wheel chairs, eligibility for temporary service, and the administration of EpiPen training. In general, the respective Boards' policies and the Procedures Manual recognize the unique requirements of special needs transportation; however, many procedures are not explicitly documented including procedures specific to the individual conditions of students with autism, behavioural challenges, and fragile medical conditions.

4.3.2 Best Practices

It is recognized that STSYR has demonstrated best practices in the following area:

Inclusion of the Transportation Department in the decision-making process for mode of transport ensures that all modes and methods of providing services can be evaluated, including inclusion on regular education runs where appropriate. In addition, inclusion allows for discussion about how to optimize service delivery to students with special requirements without significantly disrupting other aspects of the routing network.

4.3.3 Recommendations

Special Education Policy and Procedure Refinement

The Procedures Manual and its separate section on special needs transportation is a useful way of identifying many of the unique parameters to determine the level of service and ensure safe transportation for special education students. Given the multitude of specific behavioural and medical needs of students, consideration should be given to the inclusion of all operational procedures that govern, to the extent possible, the wide variety of special circumstances that may need to be accommodated to ensure the safe transportation of students and aid in the comprehensive training of drivers and attendants.

4.4 Safety Policy

The safe transportation of students is the overriding goal in any school transportation system. A consortium serving several boards over a large rural and urban area with multiple operators necessitates the development of clear and concise safety policies, practices, and regular training programs to promote a culture of safety with students, parents, drivers, and local communities.

4.4.1 Observations

The safe transportation of students is clearly an identified objective of the Consortium. The Procedures Manual includes procedures or references to safety as illustrated below:

- Pedestrian safety and the responsibility of local government;
- Bus stop safety including stop planning;
- Equipment and article transportation;
- Video cameras;
- Special needs safety concerns and planning;
- General route planning based on safety, ride times, supervision, and cost;
- Weather related events; and
- General school bus safety.

Despite the clear focus on establishing procedures related to safe transport, several specific concerns were identified regarding operational practices. First among these concerns is that drivers are not provides with route manifests that include student names and addresses. This is a concern for daily operations as the driver has no current student list to ensure that riders are eligible or that students are disembarking at their designated school or stop. The lack of student identification may impact accurate student discipline management and could be critically important in the event of a medical issue or other incident with students on board. This situation is exacerbated by the issues related to management of student data that is further detailed in Section 5.3.1.

Student Training

The Consortium participates and supports a number of safety programs for its students including a First Rider program that introduces new students to the school bus and provides useful educational material to parents and students; mandatory safety and evacuation training to students in grades JK through 8; and a safe rider sticker program for young students. The sticker program was initiated by STSYR, board administrators, principals, and secretaries to provide ready identification of JK, SK, and grade 1 students. A sticker with pertinent information was designed to be attached to a student's backpack to aid school staff and bus drivers in the identification of the student to ensure that they ride the correct bus and disembark at the correct stop.

Driver Training

Responsibility and requirements for driver training have been assigned to the operators through their service contracts. A review of a contract language indicates that drivers *must be trained in the transportation of passengers and, in particular, children*. Additional clauses mandate that operators provide an ongoing driver and safety training program and that all drivers are trained in rider management within 60 days of hire.

4.4.2 Best Practices

It is recognized that STSYR has demonstrated best practices in the following area:

- The Consortium has demonstrated its commitment to safety and training providing direct training to students. The cooperative development of backpack stickers is evidence of this commitment.

4.4.3 Recommendation

Revaluate Student Information Practices, Oversight Responsibilities and Consortium Training Support

While the Consortium clearly encourages the safe transportation of students by its support and participation of ongoing safety training and awareness programs, improvements in the following areas are recommended to ensure the safety of students in emergency situations and to provide consistency in training for all operators. Areas of improvement include:

- Determine and develop work around solutions to obstacles in providing current rider lists to operators and drivers to ensure correct student identification, thus reducing the potential for lost students, ineligible riders, medical support, and accurate information dissemination in the event of a major accident or incident.

- The responsibility for oversight of safety programs and training is not clearly established. Consolidating all programs under the responsibility of one management team member would provide both the operators and the community with a single point of contact. The ultimate oversight responsibility would remain with the Consortium Manager.

- While the Consortium has demonstrated direct involvement in safety training for students, the majority of training for drivers is delegated to the operators. Consortium sponsored training in the areas of student management, and specific special education training in the areas of autism, behavioural management, and fragile medical students would help to ensure that driver training is consistent and meets Consortium standards.

Timely Provision of Rider Management Training

The current contract stipulates that all drivers are mandated to receive rider management training. This training enables the driver to better deal with specific situations that may arise while transporting students. Currently it is stipulated that new drivers receive this training within 60 days of hire. During this approximate two month time frame a new driver could be driving students without having the benefit of this training. It is recommended that this timeframe be re-examined as it is inappropriate to have a drivers who have not received such formal training involved in the transportation of students.

4.5 Results of E&E Review

Policies and Procedures development and implementation has been rated as **Moderate**. STSYR has established a long history of successful collaborative service to its Partner Boards. This collaboration has led to the harmonization of many critical planning policies and the establishment of a useful source document for operational procedures. The Partner Boards have also recognized the important role of regularly

evaluating school bell times in order to promote efficient and effective service delivery. In addition, the Consortium has worked to establish a vigorous safety program focused on both students and operators.

Despite the effective documentation of policies, a number of important differences remain in key planning criteria. Harmonization of the remaining eligibility policies will ensure that questions are not raised regarding the equity of services being provided and will minimize the real and potential impact on route planning that differing service criteria cause. In addition, addressing the issue of how to distribute student data to bus drivers with due consideration to privacy concerns is an important element in ensuring safe operations.

5 Routing and Technology

5.1 Introduction

Routing and Technology encompasses the management, administration, and use of technology for the purpose of student transportation management. The following analysis stems from a review of the four key components of:

- Software and Technology Setup and Use;
- Digital Map and Student Database Management;
- System Reporting; and
- Regular and Special Needs Transportation Planning and Routing.

Each component has been analysed based on observations from fact (including interviews) together with an assessment of best practices leading to a set of recommendations. These results are then used to develop an E&E assessment for each component, which is then summarized to determine an E&E assessment of Routing and Technical efficiency as shown below:

Routing and Technology – E&E Rating: Moderate

5.2 Software and Technology Setup and Use

Modern student transportation routing systems allow transportation managers to make more effective use of the resources at their disposal. These systems allow for improvements in the management and administration of large volumes of student and route data. However, the systems must be fully implemented with well designed coding structures and effective mechanisms to extract and report data to all stakeholder groups. This section was designed to evaluate the baseline acquisition, setup, installation, and management of transportation related software.

5.2.1 Observations

Routing & Related Software

The Consortium utilizes the *MapNet* routing software from Trapeze Software Group. This school year represents the third full year of use. The Consortium transitioned from a system that was primarily an in-house designed and managed SQL Server database and thus was not a graphical, map-based system but rather a text-based database used to store student, stop, and route data. The transition to *MapNet* was deemed necessary

in recognition of the severe limitations placed on planning effectiveness and overall efficiency by the prior system.

The primary tool utilized for information dissemination both internally and to all external users and stakeholders is *MapNetWeb*. This is a web-based software product from Trapeze that accesses the local *MapNet* database to provide near real-time information to users. The data being viewed by users of this tool is the backup data from the prior day. The tool is accessed via the Consortium website.

Permissions are incorporated to restrict data access to each user group. Bus operators, for example, can view all route detail, but only for their own routes. Parents can access route information based on their student's transportation address, but this is restricted to stop listings for the relevant bus routes. Schools can access detailed student rider information for all students assigned to the school.

The Consortium website provides additional information to users and stakeholders. The primary interactive use of the site, in addition to providing a portal to *MapNetWeb*, is to post real-time information on bus operations. Individual operators are required to maintain the integrity of this information by posting delays and individual bus cancellations in real time. The Consortium itself posts information on system-wide cancellations. This data is also captured in a back-end database and utilized for measuring operator performance. The website also contains static information regarding system policies and operating practices.

The Consortium maintains direct telephone lines to staff as well as a common inbound land line for emergency access. In addition to email and facsimile, this continues to be the primary access mechanism for outsiders to reach Consortium staff. The Consortium is pushing to advance the use of *MapNetWeb* among its stakeholder and user groups. During school start, management limits telephone access to the Planners. Temporary lines are installed which provide direct access to Planners for school and bus operator representatives only. The individual schools become the primary point of contact for parents and are asked to forward issues and concerns to the appropriate Planner in an organized manner.

Maintenance and Service Agreements

Access to the *MapNet* software is provided throughout the Consortium offices, which are co-located with the York Catholic District School Board (YCDSB). The information technology department of YCDSB hosts the software, supports the hardware, and is responsible for data backup and disaster recovery. The Consortium operates on the YCDSB local network, including hosting the Consortium website.

The YCDSB provides a clearly documented and comprehensive data backup and disaster recovery protocol that serves as the basis for a service level agreement between STSYR and YCDSB in this area. The document provides a delineation of the services to be provided as well as daily procedures to be followed. The agreement calls for a daily incremental backup to be taken of all STSYR data. Data is removed to an off-site location for storage. Data recovery is guaranteed within 24 hours of a failure, and to be restored with a version no older than 2-days from the date of failure. However, no provisions are provided for a disaster that prevents the STSYR from accessing its server and office space.

System Setup and Use

The Consortium operates *MapNet* utilizing a single live database that is backed-up regularly, as described above. While a simulation or “test” area is available within the system, it is not widely used by staff. All route maintenance and planning work is conducted within the live database for day-to-day maintenance activities, evaluation of alternative routing strategies, and conducting comprehensive updates for the following school year.

Using the live database to evaluate alternative routing scenarios is a highly unusual practice given that the live database is also the one accessed by schools and bus operators to address daily operational concerns. Under this approach any analysis that is in progress is reflected in the *MapNetWeb* application and would not reflect the actual route scheme in operation. In order to minimize the potential for confusion, the Planners retain a hard copy of the original to restore a route if the changes are not confirmed. This approach limits the scope and scale of scenario modeling that the Consortium can perform.

Staff Training

All consortium staff received basic user training on the system at the time of implementation. Additional training sessions have been provided by Trapeze staff since that time, most recently in May 2006. Since then, training has been provided via a "train the trainer" approach, with the Software Analyst providing in-house software support and serving as the Consortium's conduit to the software vendor's support staff. In addition, the two Area Managers provide as-needed support and training to the Planners under their charge. The Manager and Area Managers have also attended user group meetings provided by the vendor. STSYR plans to provide additional advanced training to planning staff during the current school year. Management recognizes that there is a range of technical capabilities among the current staff, with some Planners advancing beyond a basic user level, and others that require more rudimentary assistance. The limitations imposed by the use of a single live database are hampered

further by the system coding and student data management practices of the Consortium (discussed below). While additional training is currently being contemplated by management, these structural elements will limit the further advancement of staff expertise.

System Coding Structures

The effectiveness of the system coding structure will, in large measure, define the effectiveness of the overall software system. Effective coding is vital to the efficient identification and management of specific data records within the system. Effective coding is equally vital to the ongoing analysis of system performance. Easily identifying, for example, a particular group of routes or students demands a comprehensive, hierarchical, and well conceived coding structure. This structure should have a basis in utility; that is, it should be reflective of what information is required by management and route planners on a regular basis. It should not be overly complex, but rather should balance the relative need for detailed data with the difficulty and error potential inherent in an overly complex structure.

MapNet utilizes the "activity" as a key organizational element in the database. One or more activities are associated to each school location, and a student record is linked to an activity. Each activity, in essence, defines a unique transportation requirement to the school location. Thus, each activity has a combination of grade levels, census group codes, and program codes associated to it, along with transportation parameters (days of the week, program start and end times, etc.). The manner in which activities are designed and organized will thus largely define the utility of the system for planning and analytical purposes. This is particularly true of large and complex transportation systems with many unique transportation requirements.

STSYR chooses to establish three common activities for each school location: two for regular education that conform to the different walk policies by grade level; and one for special needs. This greatly simplifies the setup and use of the system because an overly large number of activities can cause the database to become difficult to manage. However, this approach creates operational and analytical constraints when combined with the current student coding structure, as described further below.

In addition to a unique student identification number, each student record receives four identification codes. The first is a three-digit alpha-numeric school code that identifies the student's school building of attendance. The second is a "census group" that is either set to a default, or identifies one of two unique instructional programs. The third and fourth are the "program 1" and "program 2" codes that are resident in the *MapNet* system. Program 1 identifies the student as either "regular" (RG) or "special needs" (SE). Program 2 defaults to "regular" or is otherwise utilized to identify any of 14 unique

exceptionalities. Coupled with the student's physical location and school assignment, *MapNet* utilizes these codes to calculate the student's transportation eligibility and to assign the student to bus stops and routes. Table 4 below summarizes the calculated eligibility of all students within the database, and their associated census group and program codes. *(Note: Census Group code "X" is the default, "FI" is French Immersion, "AP" is Arts Program)*

Table 4 – Rider Eligibility Summary[13]

Riders	Program 1	Program 2	Census Group	Total Students
Eligible - Regular	RG	RG	X	30,980
Eligible – Regular	RG	RG	FI	5,017
Eligible - Regular	RG	RG	AP	8
Sub-Total				**36,005**
Walkers - Regular	RG	RG	X	86,556
Walkers - Regular	RG	RG	FI	1,679
Walkers - Regular	RG	RG	AP	95
Sub-Total				**88,330**
Not Eligible - Regular	RG	RG	X	17,970
Not Eligible - Regular	RG	RG	FI	552
Not Eligible - Regular	RG	RG	AP	427
Sub-Total				**18,949**
Eligble - Special Education	SE	(01-14)	X	5,121
Eligble - Special Education	SE	(01-14)	FI	40
Eligble - Special Education	SE	(01-14)	AP	6
Sub-Total				**5,167**
Walkers - Special Education	SE	(01-14)	X	1,179
Walkers - Special Education	SE	(01-14)	FI	12

[13] The counts in this table are based on data extracted from the MapNet system during the onsite portion of the E&E review. They may not match the values used elsewhere in the report which are based on data submitted by the Consortium at a prior date.

Riders	Program 1	Program 2	Census Group	Total Students
Walkers - Special Education	SE	(01-14)	AP	7
Sub-Total				**1,198**
Not Eligble - Special Education	SE	(01-14)	X	7,684
Not Eligble - Special Education	SE	(01-14)	FI	37
Not Eligble - Special Education	SE	(01-14)	AP	5
Sub-Total				**7,726**
Total Students				**157,375**

As can be gleaned from Table 4 above, this approach to student coding, coupled with the use of the three standard activities associated with each school location, is capable of meeting, with some exceptions, the operational, reporting, and analytical requirements of a large and complex transportation system such as the STSYR. However this assessment is only true assuming all relevant groupings of students are identified by the current list of program codes. One notable exception to this became apparent during the onsite portion of the E&E review, and there may be more that were not readily identifiable. Students utilizing the pay for use program (discussed further in the route analysis section) are not identified as such by this coding structure. Thus, these students are coded as not being transported when in fact they are assigned to stops and routes.

Another key exception is in the area of special needs transportation. There is no identification of special needs requirements outside of the 14 exceptionality codes at the student record level and the single special needs activity associated with each school location. This in particular provides several examples of how this coding approach limits the utility of the system for both operational and analytical purposes. Some special needs students require equipment or have unique requirements that are not captured by the 14 exceptionality codes. Currently, there is no way to see this important information within the *MapNet* system.

There are other students that require transportation to secondary programs that are contained in off- site locations (e.g., alternative schools, vo-tech programs) away from their home school of attendance. The hard link that is required within *MapNet* between

school, activity, and student requires that an activity code be developed and associated to both physical locations in order to track this transportation requirement. Because activity codes are limited by management to those described above, planning staff must create a number of work-around solutions to track these students within the database.

To get around some of these limitations, each Planner responsible for special needs transportation maintains detailed special needs data in a spreadsheet or hard copy from outside of *MapNet* (see discussion in route planning section below). The source for this data is the special transportation request forms submitted by each of the boards. This causes much of the planning for special needs transportation, and the associated data management and analysis, to be conducted outside of *MapNet.* While this is not an effective practice, it should be recognized that moving toward the importing of electronic special needs student data is a stated priority for STSYR management.

The coding of bus routes and trips in the system should complement the operational and analytical utility of the student coding system described above. The identification numbers of bus routes and trips should bear significance in helping the Planner or analyst understand the nature and type of route being operated. Currently, individual bus routes are coded with a prefix identifying the bus number, and a suffix that identifies the sequence of the route in the bus' daily morning or afternoon trip. The trip, or combination of routes performed by the bus in either the morning or afternoon transportation period, is coded with the bus number and an identifier for which series of routes (morning or afternoon) is being performed. There is no identifier to indicate the school being serviced or the type of bus route being operated. Combination routes (those servicing more than one school) are not identifiable in the route numbering structure. Rather, they are only identified via the activity codes associated to the route. There is no use of shuttle or transfer routes within the system, so specialized coding of this type is not currently relevant.

5.2.2 Best Practices

It is recognized that the Student Transportation Services of York Region (STSYR) has demonstrated best practices in the following areas:

- The Consortium uses a fully implemented and highly functional transportation software application that allows for the development, review, and analysis of existing and alternative routing strategies.

- The Consortium’s well documented and comprehensive data backup and disaster recovery protocols ensure continuity of operations and maximum staff effectiveness.

5.2.3 Recommendations

System Setup

It is recognized that the setup and use of the *MapNet* system continues to be an evolutionary process within the Consortium. That said, one aspect of system setup should receive immediate attention. The use of a secondary “test” or simulation database for evaluating route changes should be institutionalized as soon as possible. The current approach of using live data to design changes has the potential to cause confusion and to result in data errors. It is recommended that STSYR implement an approach whereby a backup copy of the live database be made available to planning staff for the purpose of designing and testing route changes. Staff should be trained and provided with access to a personal simulation database that they can maintain and overwrite as required for their day-to-day route management processes.

Staff Training

It is recommended that a regular program of staff training be implemented. There is a significant disparity in the technical proficiency and experience of individual Planners on the Consortium staff. Given the current organization structure whereby each Planner is responsible for all aspects of transportation planning within their designated school groupings, this disparity has the potential to result in unequal levels of service and efficiency across the system. This would be greatly mitigated by a structured approach and investment in ongoing training. This should include a monthly in-service training program that targets the relative level of expertise of individual Planners. This training should not be limited to the routing software, but should include subjects touching on all aspects of student transportation route planning and operations. Most of these sessions can tap the expertise that currently exists throughout the organization, but some sessions should bring in outside sources such as representatives from the operators association, business officials from the partner boards, and other industry experts.

System Coding – Routes and Trips

Management and Planners’ ability to manage and analyze the Consortium route structure would be considerably enhanced through the implementation of a revised route and trip numbering system. Trip numbering should continue to reflect the assigned bus number, but changing route numbers to reflect the school serviced and/or the type of route would greatly improve the utility of the data for analysis and reporting. For example, current routes are assigned a numeric identification based on the bus providing the service, whether it is a morning or afternoon route, and the sequence of the route in the morning or afternoon series. Thus the trip name “925 PM TRIP” and the route identification “925-5” in the current structure indicates the first route in the afternoon sequence (1-4 are reserved for morning routes) and that it is performed by

bus #925. A revised structure might continue to include the same trip name, to keep a link with the bus number and afternoon sequence, but a revised route identification such as “W488-05”. This route identification incorporates a reference to the school serviced (Woodland PS), and maintains the sequence to indicate that it is the first in the afternoon series for the bus servicing the route (05) In addition, a suffix could be added if it is a combination route (e.g., W488-05C) with a convention that the school identification indicates either the first or last school in the sequence serviced by the route. This approach allows for easy identification of the route’s purpose and type, both for day-to-day operations and for analysis and reporting.

System Coding – Activities and Students.

The current approach to coding prohibits full planning and analysis of special needs transportation requirements within the system. It is recommended that management continue to focus on the importation of detailed special needs student data into the *MapNet* database for the purpose of complete identification of special equipment and transportation requirements. It is further recommended that Consortium management consider expanding the current approach to activity coding to encompass all unique transportation requirements. Finally, management should re-evaluate the list of codes to ensure all relevant groupings are identified. This is particularly true for those riders utilizing the pay for use program as these are currently misidentified in the system as not being transported. This issue is discussed further in the analysis of system effectiveness section below.

5.3 Digital Map and Student Database Management

This aspect of the E&E Review was designed to evaluate the processes and procedures in place to update and maintain the student data and map data that forms the foundation of any student transportation routing system.

5.3.1 Observations

Digital Map

MapNet utilizes a single digital map that covers the entire service area. The only exception is for a small number of bus routes that traverse areas to the south (Toronto). The map was obtained and continues to be maintained in cooperation with the Region of York. The consortium is faced with challenges brought on by development and population growth occurring within its service area. In addition to the routing challenge brought on by the addition of a significant volume of new schools and students, this growth poses significant challenges in terms of maintaining the accuracy of the digital map.

The Consortium maintains a working relationship with the YCDSB planning department, and a formal Memorandum of Understanding exists between the Region of York and both the YCDSB and YRDSB Planning Departments. The YCDSB planning department receives regular digital map updates from the Region, and the STSYR utilizes these updates as a primary mechanism to maintain the *MapNet* digital map. The Consortium is therefore subject to the accuracy of the updates being provided by the Region, although this is manageable through continued good relations with the Region. That the potential for problems exists was demonstrated, however, when new map data brought in to *MapNet* proved to have numerous errors, causing a long-term problem for the routing work of the Planners until being recently corrected. A review of map diagnostic reports from the system revealed very few current problems.

Maintaining global default values for all system settings such as bus loading criteria, student load times, road speeds, etc. is the nominal responsibility of the Software Analyst. As new map data is provided, the Consortium ensures that the integrity of *MapNet* specific attributes (e.g., a no-travel or no-walk street segment) is maintained. As a practical matter, however, these defaults have not been manipulated since the introduction of the *MapNet* software some three years ago. Map speed calibration was reviewed by the Software Analyst, Area Manager, Manager, and Trapeze staff. Initially, STSYR attempted to establish specific road speeds for each of the road segments in the service area, but this proved to be unmanageable. As an alternative, staff developed general characteristics for the rural and urban road networks, which are the values that are currently being maintained. Loading criteria and student load times were also established through consultation with Trapeze staff at system implementation and have not since been revised.

Bus operators are required to provide "certified copies" of their routes once per year. These are route detail reports that are self generated by the operators via *MapNetWeb*, and annotated with corrections and comments based on a route self audit. Operators provide corrections to stop times, student loads, and other route elements, as required. These forms are turned in to the Consortium in late October, catalogued, and then utilized by Planners and Area Managers to analyze and correct routes within *MapNet*. Interviews with Planners revealed that these reports are not regularly utilized to evaluate or tune the map. Rather, if there is a particular issue with the timing of a route, the Planner will make the correction by manually changing the route time, not by correcting any underlying problem with the map’s road speed calibration.

The Software Analyst or Area Managers establish hazardous boundaries and no travel street segments on the map utilizing the "block policy" functionality of *MapNet*. This function allows the user to assign attributes to specific road segments. For example, to designate a hazardous walking area each of the segments bordering the area would be designated as "no walk". Certain staff understand and utilize the "polygon" capabilities

of the system to establish boundaries for specific purposes, but this technique is not regularly used throughout the organization.

Student Data Management

The *MapNet* database contains student records for the entire enrolment of both partner boards. The Consortium conducts a comprehensive download of student data from each partner board to facilitate route planning in advance of school start each year. One or more incremental downloads are conducted to ensure that the most current data is uploaded to *MapNet* before the start of school. For the 2007-2008 school year, this data was received between June 5 and July 23. While this database becomes the baseline for the following school year, route planning for that school year is predicated on design work conducted over the course of the prior school year, as discussed further in the *Route Planning* section below.

The ongoing management of student data over the course of the school year is different for each of the two partner boards. The York Region District School Board (YRDSB) operates on the Trillium student information system and provides a bi-monthly "add/change/delete" extract to the STSYR. As the YRDSB has just installed the Trillium data system, STSYR has not yet established an automated upload process like the one currently in place with the YCDSB. STSYR and the YRDSB are in the midst of planning to automate the data upload process over the course of the current school year. The current extract arrives as multiple electronic files and requires approximately 1-2 days on the part of the Software Analyst to manipulate and arrange the data for upload to the *MapNet* database. This process does not provide an adequate level of ongoing data accuracy. In some cases this causes Planners to disregard the validity of the student data in their day-to-day route maintenance and planning activities.

The process for the YCDSB is dramatically different. A daily extract is provided and arranged to facilitate an automated upload to *MapNet*. Wherever possible, new student records are matched to the map and receive an automated bus stop assignment. Changes to existing records, such as for the student’s transportation address, receive automatic reassignments such that no manual intervention is required on the part of Planners unless an error condition is created. Deleted student records are provided in a listing that is manually verified before the record is removed from *MapNet*. Students that do not match to the map due to input errors are tracked and returned to respective Board staff for correction.

Following the disparity in student data management between the Partner Boards, the most notable aspect of the student data management process is that, by consortium operating practice, the Planners do not manipulate or maintain student records within *MapNet*. The student record is left as is when brought over from either the annual, bi-

monthly (YRDSB) or daily (YCDSB) downloads from the partner boards. Transportation specific information, such as program codes (see discussion above) are maintained in the boards' student information systems. This places a high degree of reliance on the accuracy and completeness of the student data as it arrives from each Partner Board to ensure routing accuracy, and is a step that should only be taken once this accuracy can be ensured from all data sources. During interviews, a number of student records were examined. While not a statistical sample, this anecdotal review revealed a high proportion of inaccuracies. While we concur that this is an appropriate practice given the size and pace of change within the consortium, it is not practical until both partner boards provide accurate and complete daily downloads.

5.3.2 Best Practices

It is recognized that STSYR has demonstrated best practices in the following areas:

- The use of centrally available map data and the working relationship that the Consortium maintains with the providers of the map data help to ensure that a complete and accurate digital map is available to the planning staff despite the fast pace of development in the service area.

- The highly automated approach to student data management in the case of the daily upload from the YCDSB is an excellent practice for this large and growing transportation system. While this approach places heavy reliance on the accuracy and completeness of the data being transferred, it represents an appropriate process for this type of system.

5.3.3 Recommendations

Digital Map Maintenance

While the current approach to overall map maintenance is appropriate, it is recommended that the Consortium review the current global map settings for items such as load time at stops. The review of routing and operating practices revealed that inaccuracies may exist as a result of inappropriate settings for these defaults. Furthermore, the responsibility for maintaining the accuracy and integrity of these settings should be vested with a single qualified staff member within the organization.

This same individual should be vested with the responsibility for, and provided with the training to enable, a more proactive management of map attributes on a detailed level. While we acknowledge the difficulty in managing segment-level attributes in a large map, we contend that this is a necessary activity to progressively improve the overall effectiveness of the map and therefore the transportation system as a whole. If the

timing on a particular route is inaccurate as a result of such settings, for example, then manually manipulating the route time as does not correct the underlying problem and ensures that additional routes utilizing the same road segment will also be incorrect.

Student Data Management

Management should accelerate and emphasize the importance of achieving a consistently high level of continuity and refinement in the management of student data from both partner Boards. The lack of timely and complete student data from the YRDSB for all types of students and the absence of complete data from either Board for special needs students is seriously hampering the accuracy and effectiveness of current route design and maintenance efforts, as described further in the analysis of routing system effectiveness below.

5.4 System Reporting

Adequate reporting allows for the early identification of trends that may be detrimental to operations, improves the analytical capacity of the organization, and internal and external stakeholders to be more adequately informed about operations. The purpose of this aspect of the review was to evaluate what reports are typically generated, who receives these reports, and what capabilities exist to develop ad hoc reports.

5.4.1 Observations

Reporting and Distributing Data

The primary reports utilized throughout the system are those available via *MapNetWeb*, as described above. While we acknowledge the Consortium's efforts to advance its use among groups outside of the Consortium staff, it was apparent from a review of login information that a relatively small proportion of schools are making effective use of this important tool. However, Operators utilize the access provided in a more effective way. The Consortium also places limitations on the information available to each user group. While generally appropriate, limiting bus operator access to student specific information on the routes they operate is overly restrictive and presents serious safety and operational concerns. While we understand the need to protect student privacy, it is accepted within the industry that operators of school vehicles must be aware of the specific students under their charge. Furthermore, it is impossible for these operators to provide accurate data during the "certified route copies" process if they do not have access to eligible student rosters at each bus stop.

Various system reports are utilized internally within the Consortium, primarily by the Software Analyst, Area Managers, and Manager, to diagnose and oversee the system.

These include system diagnostic reports, as well as exception reports to identify various subsets of data that need to be analyzed or acted upon (e.g., students not matched to the map). All of these reports are run on an as- needed basis.

Data is also extracted from the system on a regular basis for analytical purposes. This is mostly performed at the Analyst and Manager levels in the organization. Planners generally work with data from within the *MapNet* system itself. A primary benefit of a system such as *MapNet* is the ready availability of vast quantities of data and information for analytical purposes. Limitations are placed on the utility of the data by coding structures and the comprehensiveness of the database, as discussed elsewhere in this report. These limitations aside, the Consortium does demonstrate the capability to extract and manipulate the data for these purposes.

Performance Measurement

The Consortium reports that they utilize data extracts and system reports to calculate several “Key Service Indicators”. A list provided as part of the E&E review shows several metric that are considered appropriate as measures of overall performance. These include: average student ride time; counts of students riding more than 60 minutes; average length (time and kilometres) of routes; and late arrival calculations. However, there was no evidence provided by a review of documentary material or during staff interviews that these metrics are calculated and reported in such a way that they would be useful for trend analysis or for informing stakeholders and users of system-wide performance. Also, given the potential inaccuracies in the database, as discussed in the analysis of route system planning and effectiveness below, these metrics are currently of questionable value.

5.4.2 Recommendations

Reporting and Performance Measurement

Enhance and expand on data extraction for analysis, internal and external reporting for system management and information, and performance measurements for reporting and analyzing system- wide performance. However, before these can be done, the consortium has to address the other more pressing concerns in the area of student data management, system coding, staff training, and route planning, which should all take precedence. It is therefore recommended that initiatives in this area be considered secondary to the recommendations contained elsewhere in the Routing and Technology section of this report.

5.5 Regular and Special Needs Transportation Planning and Routing

Transportation route planning is the key activity undertaken by the Consortium. Special education in particular presents unique challenges that often require operational strategies well outside the normal practices of any organization. This portion of the review was designed to evaluate the strategies, tactics, and processes used to provide transportation to regular and special education students and the approaches used to minimize the cost and operational disruption associated with both types of transportation.

5.5.1 Observations

Route Planning

The consortium operates on a comprehensive annual planning calendar. The annual planning cycle begins at school start-up in September and runs through completion of planning for the next school year in August. The planning calendar calls for several specific tasks to be performed in each month of the year, but it does not call for the Consortium to systematically redesign all routes during the months leading up to school start. Rather a strategy is followed that focuses on making minor route revisions continuously throughout the school year. Potential major changes to the route structure are analyzed after school start-up is completed, and terminate in the late winter time period. They are shared with schools in the spring, and are implemented during the current school year. The Consortium believes that this approach ensures that routes and stop times are well established and understood by those likely to be utilizing the routes during the following school year. The consortium further believes that this methodology facilitates its overall route planning goals most effectively.

While it represents a unique approach from the more typical planning cycle (with new routes implemented for the start of each school year), it appears to be effective when considered in the context of existing practice, Board culture, and the overall operational approach followed by the Consortium.

Within this overall context, each individual Planner has responsibility for designing and managing the routes in their designated geographic area of responsibility. This extends to all regular and special needs transportation, day to day management as well as periodic route redesign. A redesign effort is undertaken either as a result of some specific event (usually a new school opening), or as a targeted analysis in a particular geographic area of concern. The need is identified by Planners, Managers, or because of some precipitating event or situation, such as a chronic late arriving bus. Minor route change requests can originate from operators, but more typically are the result of a complaint or problem brought to the attention of a Planner from a school administrator

or parent. Another typical event that will initiate a route change is the Planner's review of the certified route copies, as described earlier in this report. Area Managers plan all summer school routes. Planners are not involved in the summer school process as this occurs during May and June when they are continuing to work on their route revisions for the upcoming school year.

A primary routing technique in use by the STSYR is the combining of multiple routes into either a morning or afternoon trip (tiering). Thus the process of assigning buses to individual routes is of paramount importance to the efficiency of the overall system. In general, this is handled operationally on a day by day basis by each Planner, and the Planners working cooperatively. Conflicts, under- utilized buses, and buses to be eliminated are generally authorized or handled by the Area Managers. This is particularly true in situations that require adding to or subtracting from the number of routes provided to particular operators.

A route timeline report is available to all Planners to assist with the assignment task, but is not regularly utilized. This tool provides a visual representation of each route, and the linkage of routes into trips for each bus. It allows the Planner to easily see the start and end times for routes and the layover and deadhead times between routes. Most importantly, this tool permits the Planner to see where overlaps exist (indicating times when two routes assigned to the same bus are in conflict) and when significant gaps exist in a particular bus' day where an additional route might be assigned. The Area Managers and Manager reportedly utilize this tool to ensure the overall effectiveness of the routing system. However, a brief review of a timeline report during the onsite portion of the E&E assessment, indicated a significant number of route overlaps. The reason for this is unclear, and can be indicative of actual conflicts, or route inaccuracies whereby times are not reflected correctly.

Regardless of cause, this review was indicative of a database that does not fully reflect actual on-road operations.

Bell Time Analysis

A primary tool available to the Consortium, particularly given the emphasis placed on route tiering as a technique, is the ability to change school bell times. The analysis of bell time impacts is undertaken by the Consortium on a regular basis, either as an outgrowth of new school openings, in which case they define the bell time, or as an efficiency measure, either at the request of the Board or an internally generated initiative. The level of control the Consortium staff has over the establishment of school bell times is unique, and represents a distinct asset in its ability to provide an efficient and effective route structure.

Efforts to date in the area of route planning have been placed on full implementation of the *MapNet* software and improving its basic utility through better student data management, improving Planner knowledge, and similar efforts. Recently, the Consortium has experimented with the use of simulation areas, optimization, and other tools and advanced capabilities of the system. These efforts are, however, in their infancy at the time of this review.

Pay for Use

One major issue related to the effectiveness of route planning in general is that courtesy riders are not tracked in the system. These "pay for use" riders are tracked in a separate database for billing purposes. Planners must estimate the impact of these riders when determining planned loads on routes and accounting for changes to the system. Planners do have internal access to data from the pay for use billing system which shows real time seat utilization. Planners are also responsible for determining how many seats are available for the pay for use program[14]. Having to manipulate data from two systems is, however, cumbersome and impractical for many day-to-day activities. This, coupled with problems related to student data management from the YRDSB and shortcomings in the coding of special needs students, as discussed earlier in this report, is causing the overall *MapNet* database to be inaccurate. This, in turn, causes problems with the effectiveness of planning processes and largely negates the value of data analysis, as described further below.

Analysis of System Effectiveness[15]

STSYR manages a transportation system that provides services over a large geographic area. The service area is largely urban/suburban but contains significant rural characteristics as well. It is a large system that provides services to an overall student population in excess of 157,000 with transportation provided to approximately 26% of the total, or in excess of 49,000 students. The relatively low proportion of transported students is evidence of the overall dense population characteristics of the service area. The Consortium accomplishes its mission using a broad range of approximately 1,150 vehicles of all types, from taxis to large school buses. Of these, approximately 777 are buses with a capacity of 20 or more per unit.

These 777 units serve a total of 3,143 daily bus routes. Each route, as defined here, represents a unique load of students being transported to one or more schools. The

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[14] Pay for use is discussed in terms of consortium management in section 3.4.1 and 3.4.3 (page 19-20) and in terms of policies and practices in section 4.2.1 (page 16).

[15] This analysis is based on data extracted from the MapNet system at the time of the review. The results have not been reconciled to values reported by the Consortium in the annual Ministry survey and that have been quoted in other parts of this report.

range of school bell times facilitates each bus (those with capacities of 20 or more students) performing more than one route during the morning or afternoon, with an average of two morning and two afternoon routes and a total of four daily bus routes per bus. The average simple capacity utilization across the fleet of 777 buses is 38% (or nearly six of every ten seats are empty). This is measured by taking an average of utilization on all routes, with each route calculated by dividing the rated capacity of the bus, as recorded in *MapNet*, and dividing this by the maximum student load on the route. We expect capacity utilization on the basis of rated capacity of the bus (no factor for student weighting) to be lower than for planned capacity. Typically, secondary school students will receive weights that lower the effective capacity of a bus by allowing fewer than the rated capacity of three students per seat. This has an inverse impact on utilization by lowering the numerator of the equation when discussing planned capacity utilization. The number of routes per bus and the average rated capacity utilization by type is illustrated in Table 5.

Table 5 – Route Statistics

Bus Type (Capacity)	Count in Service	Average Daily Routes	Average Capacity Utilization
20	198	3.8	25%
36	1	3	22%
72	578	4.1	42%
Total	**777**	**4**	**38%**

These results must, however, be considered in light of the limitations imposed by the data. As discussed in prior sections, we know that capacity utilization is understated because Pay for Use program riders are not represented in the data. We are also aware of inaccuracies imposed by the absence of regular student data updates from the YRDSB. In a practical sense, this imposes limitations on the ability of Planners to provide accurate data on individual routes. For example, in the data we find 681 of 4,180 total bus routes (vehicles of all types) with zero students assigned. This represents 16.5% of the total, and we cannot tell whether these are actual routes in service with student data missing, or whether these are indeed routes that are no longer in service. In the case of the buses represented in Table 6, further investigation of the 0-10% utilization category shows that 272 of 3,143 routes (8.7%) indicate zero loads. Were these to be removed, the average capacity utilization would improve to 42%. Adjusting for the Pay for Use program riders would improve this result further.

However, even with these adjustments, capacity utilization is still lower than expected. This overall assessment is bolstered by a review of those routes with the highest overall utilization. Just 34 of 3,143 bus routes (1%) have planned loads that exceed the available bus capacity. While this may seem counterintuitive as a finding, it is important to recognize that all routes are based on eligible, not actual, ridership. It is typical for transportation organizations to plan for capacity utilization in excess of available capacity on many routes, expecting that many eligible riders will not avail themselves of the service on any given day. While this cannot be definitive relative to the data inaccuracies, it provides an indicator of performance. Table 6 below displays the distribution of capacity utilization across all 3,143 routes operated by buses with available capacity of 20 or more.

Table 6 – Utilization Counts

Utilization Range	Count of Routes
0-10%	596
11-20%	376
21-30%	374
31-40%	446
41-50%	338
51-60%	339
61-70%	269
71-80%	211
81-90%	113
91-100+%	81
Grand Total	**3143**

In addition to the relatively large number of routes with zero students assigned that are negatively affecting the capacity utilization results, there is an equal concern with inaccuracies at the bus stop level in the data. Data provided by the Consortium indicates that there are 6,380 bus stops in the system that do not have any students assigned. Again, it is not possible to determine within the scope of this analysis what proportion of these stops have actual student assigned (this is often the case for special needs students due to student data inaccuracies), or how many are no longer valid stops.

Regardless, this represents a major data management issue that must be dealt with by the Consortium.

The average student ride time is 29 minutes across all routes in the system, and just 28 minutes for riders on the buses described in Table 7. This is measured by taking the sum of route length in minutes for all routes, from first stop to last stop, and dividing by the total number of routes. This excludes deadhead time where a bus is running empty. This is an excellent result, and is not unexpected given the dense geography and other service characteristics of the STSYR system.

Taking the data at face value, the combination of the routes per bus, capacity utilization, and ride time results illustrate a system that is making effective use of route tiering as a routing strategy, but is not utilizing the capacity available on any single bus route very well. The service being provided to students appears to be excellent with very reasonable ride times overall and plenty of space available on the buses. All of this must be considered relative to the cautions regarding the accuracy of the data used to arrive at these conclusions including the timeline report which supports that route timing is inaccurate and may be skewing the results which otherwise support the positive comments in this paragraph.

Use of Small Vehicles

The Consortium utilizes a large number of taxis and small vehicles for the transport of special education students. The data indicate that a total of 976 daily bus routes are operated by units with a capacity of 10 or fewer students. The route statistics for these units are illustrated in Table 7 below. However, as a further indication of data problems, fully 409 of these 976 routes (42%) indicate a zero load. With due regard to data accuracy, there appears to be a heavy reliance placed upon the use of taxis and other small units for transportation within the STSYR system.

Table 7 – Route Statistics – Small Vehicles

Bus Type (Capacity)	Count in Service	Average Daily Routes	Average Capacity Utilization
1	21	2.3	84%
3	13	1.8	8%
4	150	2.0	21%
5	143	3.2	35%
6	16	2.4	37%

Bus Type (Capacity)	Count in Service	Average Daily Routes	Average Capacity Utilization
7	9	1.8	6%
8	1	2.0	0%
10	26	3.7	16%
Total	**380**	**2.6**	**29%**

5.5.2 Best Practices

It is recognized that STSYR has demonstrated best practices in the following area:

- The Partner Boards have provided the Consortium with the authority to maximize asset use through the establishment of bell times. The Consortium demonstrates excellent use of this flexibility to maximize utilization in terms of the number of unique routes operated by each bus on a daily basis.

5.5.3 Recommendations

Data Completeness and Accuracy

Until such time as the student database is complete, and the coding structure is updated in such a way as to provide an accurate representation of actual riders, any assessment of route planning effectiveness will be suspect. The Consortium should undertake immediate implementation of the recommendations regarding student data management and coding structures contained elsewhere in this report. In addition, a thorough review of all routes and stops with zero assigned loads should be undertaken within the context of these changes to ensure that the data utilized for analysis and day to day management of the transportation system is an accurate reflection of the actual operation. As with the recommendation regarding performance measurement, the route structure can be enhanced. However, this cannot be effectively pursued until these more pressing concerns are addressed.

Route Design and Development

After completing the tasks required to address the issues of data accuracy and completeness identified above, the Consortium should undertake a detailed analysis of its routing scheme in an attempt to address the issues of capacity utilization identified. The evaluation should consider whether increasing the number of students assigned to a bus coupled with the likely decrease in the number of times a bus is used throughout

the day offers opportunities to improve cost effectiveness without adversely impacting system efficiency.

This analysis should also evaluate the type of vehicle being used to ensure that it is appropriate for the requirements. There may be an opportunity to reduce the total number of vehicles in use through improvements in data management and changes to routing strategies. The decision to assign students to taxis is done without formal cost and benefit considerations and the inaccuracies in the data indicate that it would be difficult at the current time to do so. While program requirements or behaviour management issues often require the use of single or low occupant vehicles, each case should be reviewed to determine if that student can be reallocated to a more cost effective method of transportation.

5.6 Results of E&E Review

Routing and Technology use has been rated as **Moderate**. The consortium is working diligently and effectively to implement and take advantage of the available technology to enhance and improve its transportation services. Given the Consortium's starting point of just three years ago, the progress made to date is laudable. The organization and policy structure of the Consortium is well suited to take advantage of this investment in technology to ensure an effective and efficient transportation system. The Consortium has not, however, realized many of these benefits as of the date of this E&E review. Within this context there are significant opportunities for STSYR to begin leveraging the investments made thus far by equalizing and improving on the collective knowledge of the planning staff, and to improve overall data management within the system. Clear gains in the overall efficiency of the system are possible. Taking the steps indicated in this report will help to ensure that the program will be sustainable and successful in the future.

6 Contracts

6.1 Introduction

The Contracts section refers to the processes and practices by which the Consortium enters into and manages its transportation service contracts. The analysis stems from a review of the following three key components of Contracting Practices:

- Contract Structure;
- Contract Negotiations; and
- Contract Management.

Each component has been analysed based on observations from information provided by STSYR, including interviews with Consortium management and select Operators. The analysis comprises of an assessment of best practices leading to a set of recommendations. These results are then used to develop an E&E assessment for each component, which is then summarized to determine an E&E assessment of Contracting Practices as shown below:

Contracts – E&E Rating: Moderate-High

6.2 Contract Structure

An effective transportation contract establishes a clear point of reference that defines the roles, requirements, and expectations of each party involved and details the compensation for providing the designated service. Effective contracts also provide penalties for failure to meet established service parameters and may provide incentives for exceeding service requirements. Contract analysis includes a review of the clauses contained in the contract to ensure that the terms are clearly articulated, and a review of the fee structure is conducted to enable comparison of its components to best practice.

6.2.1 Observations

Bus Operator Contract Clauses

The current contract status is that all Operators are currently bound by a contract extension of the 2005/06 contract for the duration of the 2007/08 school year. At this point, all operators have signed the contract and relevant extensions for the past 2 years. The current contract was initially drafted by the Consortium and then approved by the Joint Board. The contracts are structured to delineate service expectations and ensure the expected service levels are met by the Transportation Operators.

The contracts include provisions on the obligations of the Driver for student management and lawful operation of school vehicles, driver training, safety requirement, vehicle specification requirements and compliance with Federal and Provincial Regulations. In addition, the fee structure (described below in more detail), contract term, renewal, and termination clauses provide adequate details on compensation for services.

Bus Operator Compensation

Formula for payments to bus operators is based on Total Daily Route Time, the appropriate Basic Vehicle Rate (which varies according to vehicle type & model year), the appropriate Kilometre Rate applied to the Total Daily Route Kilometres, and any additional applicable allowances. The basis for the calculation of operator payment is documented in a Contractor Compensation document and it is distributed to the driver as part of the contract agreement. An interim payment method has been adopted to pay Operators approximately half of the forecasted future month's expenses (the payment is currently based on the previous year's actual financial data) to ease the Operator's cash flow problems. Payments are made by the Boards through direct payments.

The fuel compensation base is configured with the 2005 fuel price when the contract was first signed. The fuel price adjustments are made at the end of the month to reflect current fuel prices. Given the perpetual difference between the 2005 fuel base compared to current, there is normally a monthly fuel adjustment representing approximately ½ of the contracted fuel payment each month.

Further terms in the contracts specify that: (i) the remuneration to Operators when services are interrupted due to a labour dispute or severe weather cancellation is specified in the contract and (ii) the requirement on the Operator maximum vehicle age and compliance with vehicle condition terms as set forth by the Ministry of Transportation. Overall, it is clear within the contract the fixed basic rates of remuneration plus variable rates for the transportation services rendered; these terms are clear and easily understood.

Taxi Contract Clauses

The current taxi contracts were signed by YRDSB and YCDSB with the Taxi companies in August 2007 for the 07/08 school year. The contracts with the taxi companies include term and the termination of the contract, insurance requirements, driver duties in terms of Government regulation, vehicle and operational requirement specific to providing student transportation, and route assignment.

6.2.2 Best Practices

It is recognized that STSYR has demonstrated best practice in the following area:

- Standard contracts exist for both School Bus Operators and Taxi Operators. These standard contracts include key provisions such as driver and vehicle requirements, insurance and safety requirements. It is important that standard contracts are used to ensure consistency in expectations and delivery of services amongst Operators as well as ensuring key legal provisions such as license and insurance requirements are included.

6.3 Contract Negotiations

Contract negotiations are intended to provide an avenue by which the Consortium, as a purchaser of services, can ultimately obtain the best value for money. The goal of the Consortium is to obtain high quality service at efficient market prices.

6.3.1 Observations

Special Needs Transportation

Some York Region students with special needs are transported to programs on vehicles operated by taxi companies. The list of Taxi service providers utilized by STSYR was obtained though a pre-qualification procedure that was last conducted in June, 2006. The request for qualifications (RFQ) document only targeted local taxi operators to enable the creation of a short-list of operators for subsequent quotation of specific routes. The procurement document provides a mandatory requirement check list that all operators should comply with before submitting proposals for the services. Price is the only evaluation factor once all mandatory requirements have been met.

Bus Operator Contract Negotiation Process

All school bus contractors are represented by an association, and through this association have come to a common contractual agreement with the Consortium. The association is currently comprises of six Bus Operators and STSYR negotiates transportation contracts directly with the association. The Senior Managers of Administrative Services are directly involved in the Contract Negotiation and the Manager of the Consortium provides support during the negotiation process. Prior years' actual costing data were analyzed by the Consortium to obtain a cost base for future contract negotiations. The contract rate is determined through negotiation between the Senior Managers of Administrative Services, the Consortium Manager, and representatives of the bus operators association. The Joint Board will then approve all the drafted contracts before they are distributed to the Operators for signature.

6.3.2 Best Practices

It is recognized that the Consortium has demonstrated a best practice in the following area:

- The Taxi Company procurement process facilitated opportunities for regional service providers to formally present their service models to STSYR for review and approval. The pre-qualification process not only ensures the compliance of the taxi Operators to all federal and provincial regulations, but also includes specific requirements to protect students' safety, such as insurance requirements, seating capacity, students' seating arrangement, modification of routes, arrival and departure time windows, in-car communication facilities, etc. Through the competitive procurement process, STSYR was able to receive “market rate” from pre-approved service providers in an accountable and transparent manner.

6.3.3 Recommendations

Competitive Procurement Process

Contracts for school bus transportation services are currently not competitively awarded. By not engaging in a competitive process, the Consortium will not know whether it is paying best rates for services provided. If a competitive process is used to procure contracted services, the Consortium can clearly state all service requirements in the procurement document. In addition, Consortium can be sure that it will obtain the best value for its money as Operators will compete to provide the required service levels at prices that ensure they earn an appropriate return on investment. This may not mean that rates will decline; however, the concern for the Consortium should be to obtain value for money expended for service provided. A competitive procurement process may not be appropriate for all areas or routes under service depending on the available supply of service providers.

A competitive process should be used with certain safeguards in place to protect the standards of service. The Consortium should continue to enforce limits placed on the amount of business any one Operator can hold to avoid a monopoly situation. Additionally, in evaluating the successful proponents, cost should not be the overriding factor as that will encourage low cost proponents to enter the market while not necessarily ensuring that the same or improved levels of service are being provided. Local market conditions should be considered at all points in the development and evaluation of any service proposal. For example, local Operators can be encouraged to participate in this process by placing a value on having local experience as part of the

evaluation criteria; however, this specific criterion for local experience should also not be an overriding factor in the proposal evaluation process.

In areas where this process may not be appropriate, such as remote areas where there may not be many operators interested in providing the service to a particularly remote area, the current negotiation process may serve the needs of both the Operator and the Consortium. The Consortium, however, can use the competitively procured contracts as a proxy for service levels and costs negotiated with the more rural Operators. It is understood from discussion with the Consortium that they are waiting for the release of a sector resource guide on best procurement practices developed through a stakeholder committee before revising their own process.

6.4 Contract Management

Contracting practices do not end after a contract is signed. Ongoing monitoring of compliance and performance of contracted service is an important and valuable practice to enhance service levels and ensure that contractors are providing the level of services that were agreed upon. Monitoring should be performed proactively and on a regular and ongoing basis in order to be effective.

6.4.1 Observations

Monitoring

Compliance with contract terms is formalized in a checklist based approach. The process of contract monitoring primarily addresses safety and regulatory requirements. All incidents on buses are investigated and documented by the Consortium staff. Follow-up documentation is filed in a centralized Operator File. The implementation of the checklist is an excellent practice to actively manage and monitor all contracts and performance of drivers.

STSYR uses a part time route auditor with school bus industry experience. Routes to be audited are selected by STSYR. A sample of approximately 10% of routes for each contractor is selected each year. Audits begin in November and arrangements are made by the route auditor to ride on school vehicles to audit morning and afternoon service.

Operator Service Audit

The part time route auditor is employed by the YCDSB to conduct audits. For each route audit, a Consortium Route Audit Checklist and a Route Description Form are completed by the Auditor to document the results. The Consortium analyzes all relevant

information in order to make strategic decisions on routing efficiency and to verify information presented in invoice data.

Administrative and vehicle condition audits are performed by the Consortium staff to ensure compliance with safety, legal, and service requirements. The audit also verifies the ages of the vehicles to make sure they are under the limits set out in the contracts. Route time is tracked against the certified route. Applicable information is shared in a timely manner with Operators to ensure cost reconciliation. Other documented results (such as bus driver comments) of the audit are shared strategically with the Operators once they have been investigated.

There is also a Site Audit conducted by the Senior Managers of Administrative Services and the Consortium Manager with the representatives from the Operators. Questions related to management, policies, disputes and daily operations are asked and observations are documented are kept for monitoring purposes.

6.4.2 Best Practices

It is recognized that the Consortium has demonstrated a best practice in the following area:

- STSYR requires both regular school bus Operators and taxi Operators to provide proof of insurance prior to the start of the school year. This ensures that this important legal requirement is met prior to providing any services.

- The Consortium has a set of procedures in place to monitor the performance of the transportation Operators to make sure they achieve the service quality level indicated in the Contract. Due to the formal check list for the route and administrative audit, the checks performed by the Consortium staff covers all aspects of the services.

- The Site Audit allows STSYR to evaluate the business operation models of service providers and utilize this information in monitoring its operators and in future vehicle assignment processes to make it a merit based assignment process.

6.5 Results of E&E Review

The process by which STSYR negotiates, structures, and manages its contracts for transportation services has been assessed as **Moderate-High**. The contracts are effectively managed through a well defined formal checklist system. This system ensures that the Operators are in compliance with the Contracts during their daily

operation, and it is also a proactive action the Consortium takes to promote student safety.

Currently, contracts for bus transportation services are not awarded using a competitive procurement process. By not engaging in a competitive procurement process, the Consortium will not know whether best value for money is provided. If a competitive process is used to procure services, the Consortium can clearly state all service requirements in its procurement document. In addition, the Consortium can be sure that it will obtain the best value for its money as Operators will compete to provide the required service levels at prices that ensure an appropriate return on investment. A competitive procurement process should be used with certain safeguards in place to protect the standards of service and be sensitive to local market conditions. In areas where this process may not be appropriate due to limited service availability, the Consortium can ensure that transparent and accountable processes are supported, by using the competitively procured contracts as a "proxy" for negotiating service levels and costs.

7 Funding Adjustment

The Ministry has asked the E&E Review Team to apply their Funding Adjustment Formula to each Board that was subject to an E&E Review in Phase 2. Note that where Boards are incurring transportation expenses in multiple Consortium sites, the Board 's adjustment will be prorated for the portion attributed to the Consortium under review. For example, if 90% of Board A 's expenditures are attributed to Consortium A , and 10% of expenditures are attributed to Consortium B, the funding adjustment resulting from Consortium A's review will be applied to 90% of Board A's deficit or surplus position.

The Ministry's funding formula is as follows:

Overall Rating	Effect on deficit boards[16]	Effect on surplus boards[16]
High	Reduce the gap by 100% (i.e. eliminate the gap)	No in-year funding impact; out-year changes are to be determined
Moderate-High	Reduce the gap by 90%	Same as above
Moderate	Reduce the gap by 60%	Same as above
Moderate-Low	Reduce the gap by 30%	Same as above
Low	Reduce the gap in the range of 0% to 30%	Same as above

Based on the Ministry's funding formula, in conjunction with our E&E assessment of the Consortium, it is anticipated that the following funding adjustments will be made for each Board:

York Catholic District School Board

Item	2006/2007
2006-07 Transportation Surplus (Deficit)	$329,767
% of Surplus attributed to the Consortium (rounded)	100%
Revised amount to be assessed under the Consortium	$329,767

[16] This refers to boards that have a deficit/surplus on student transportation

Item	2006/2007
E&E Rating	Moderate
Funding Adjustment based on Ministry's Funding Adjustment Formula	No Adjustment
Total Funding adjustment	$0

York Region District School Board

Item	2006/2007
2006-07 Transportation Surplus (Deficit)	$1,595,391
% of Surplus attributed to the Consortium (rounded)	100%
Revised amount to be assessed under the Consortium	$1,595,391
E&E Rating	Moderate
Funding Adjustment based on Ministry's Funding Adjustment Formula	No Adjustment
Total Funding adjustment	$0

8 Appendix 1: Glossary of Terms

Terms	Definitions
Act	*Education Act*
Assessment Guide	The guide prepared by the E&E review team and the Ministry of Education which will be used as the basis for determining the overall effectiveness and efficiency of each Consortium
Budget and Administration Assistant	As shown in Figure 5
Business Analyst	As defined in Figure 5
Common Practice	Refers to a set of planning parameters that have been reported by Ontario school boards as the most commonly adopted planning policies and practices. These are used as references in the assessment of the relative level of service and efficiency.
Consortium or STSYR	Student Transportation Services of York Region
Deloitte	Deloitte & Touche LLP (Canada)
Department Clerk	As defined in Figure 5
Driver	Refers to bus Drivers, see also Operators
E&E	Effectiveness and Efficiency
E&E Review Team	As defined in Section 1.1.5
E&E Reviews	As defined in Section 1.1.4
Effective	Having an intended or expected effect; the ability to deliver intended service
Efficient	Performing or functioning in the best possible manner with the least waste of time and effort; the ability to achieve cost savings without compromising safety
Evaluation Framework	The document, titled “Evaluation Framework For STSYR Student Transportation Services ” which supports the E&E Review Team’s Assessment; this document is not a public document

Terms	Definitions
Funding Adjustment Formula	As described in Section 1.3.6
HR	Human Resources
IT	Information Technology
JK/SK	Junior Kindergarten/Senior Kindergarten
KPI	Key Performance Indicators
Management Consultants	As defined in Section 1.1.5
Manager	As defined in Figure 5
Memo	Memorandum 2006: SB13, dated July 11 issued by the Ministry
Ministry	The Ministry of Education of Ontario
MPS	Management Partnership Services Inc., the routing consultant, as defined in Section 1.1.5
MTO	The Ministry of Transportation of Ontario
Operators	Refers to companies that operate school buses and the individuals who run those companies. In some instances, an Operator may also be a Driver.
Overall Rating	As Defined in Section 3.2 of the Evaluation Framework
Partner Boards or Boards	The school boards that have participated as full partners in the Consortium
Rating	The E&E Assessment score on a scale of High to Low, see Section 1.3.4
Report	The report prepared by the E&E Review Team for each Consortium that has undergone an E&E Review (i.e. this document)
Senior Manager	Senior Manager for the Administrative Services of the School Boards, as shown in Figure 4
Separate Legal Entity	Incorporation

Terms	Definitions
Transportation Planner	As shown in Figure 5
Transportation Technician	As shown in Figure 5
YCDSB	York Catholic District School Board
YRDSB	York Region District School Board

9 Appendix 2: Financial Review – by School Board

York Catholic District School Board

Item	2004/2005	2005/2006	2006/2007	2007/2008
Allocation[17]	14,244,008	15,072,212	15,440,222	15,945,454
Expenditure[18]	14,029,086	14,703,591	15,110,455	16,034,969
Transportation Surplus (Deficit)	214,922	368,621	329,767	(89,515)

York Region District School Board

Item	2004/2005	2005/2006	2006/2007	2007/2008
Allocation	29,542,625	31,273,386	32,136,269	33,217,371
Expenditure	29,127,337	29,719,758	30,540,878	32,842,971
Transportation Surplus (Deficit)	415,288	1,553,628	1,595,391	374,400

[17] Allocation based on Ministry data – includes all grant allocations for transportation (Section 9 0008C, Section 13 00006C, Section 13 000012C)
[18] Expenditure based on Ministry data – taken from Data Form D: 730C (Adjusted expenditures for compliance) – 212C (Other Revenues) + 798C (Capital expenditures funded from operating)

10 Appendix 3: Document List

1. STSYR Taxi Quote Document
2. STSYR Taxi Service Pre Qualifications
3. Sample Bus Contracts
4. Sample Taxi Contracts
5. Current Contract Extension
6. Route Audit Procedure
7. Contractor Compensation Summary
8. Site Audit Checklist
9. Route Audit Schedule Summary
10. School Bus Fleet Inventory
11. Financial Management Approval Process
12. Chart of Accounts
13. Annual Budget Process
14. Invoice Summary
15. STSYR Transportation Budget
16. Cost Allocation
17. JBC Meeting
18. Report Joint TS Working Group
19. Dispute Resolution
20. JBC Terms of Reference
21. Governance Org Chart
22. Private Minutes JBC

23. Public Minutes JBC
24. Consortium Governance Structure
25. JBC Governing Structure Meeting
26. Organizational Chart
27. Job Descriptions
28. YCDSB Staff Performance
29. YRDSB Staff Performance
30. Trapeze Reference Manual
31. YCDSB Computer Training Schedule
32. Five Year Operational Plan
33. Goals and Objectives
34. IBM Report Progress Status
35. STSYR Operational Review Presentation
36. Disaster Recovery Procedure
37. STSYR Communication Strategy
38. STSYR Procedure Manual

11 Appendix 4: Common Practices

Home to School Distance

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	0.8	1.2	1.6	1.6	1.6	3.2
Policy - YCDSB	1.2	1.2	1.2	1.2	1.2	Note 1
Policy - YRDSB	1.2	1.2	1.2	1.2	1.2	Note 1
Policy - STSYR	1.2	1.2	1.2	1.2	1.2	Note 1
Practice	1.2	1.2	1.2	1.2	1.2	Note 1

Home of Bus Stop Distance

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	0.5	0.8	0.8	0.8	0.8	0.8
Policy - YCDSB	0.4	0.4	0.4	0.4	0.4	0.6
Policy - YRDSB	0.4	0.4	0.4	0.4	0.4	0.6
Policy - STSYR	0.4	0.4	0.4	0.4	0.4	0.6
Practice	0.4	0.4	0.4	0.4	0.4	0.6

Arrival Window

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	18	18	18	18	18	25
Policy - YCDSB	-	-	-	-	-	-
Policy - YRDSB	-	-	-	-	-	-
Policy - STSYR	15	15	15	15	15	30
Practice	15	15	15	15	15	30

Departure Window

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	16	16	16	16	16	18
Policy - YCDSB	-	-	-	-	-	-
Policy - YRDSB	-	-	-	-	-	-
Policy - STSYR	15	15	15	15	15	30
Practice	15	15	15	15	15	30

Earliest Pick up Time

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	6:30	6:30	6:30	6:30	6:30	6:00
Policy - YCDSB	-	-	-	-	-	-
Policy - YRDSB	6:55	6:55	6:55	6:55	6:55	6:55
Policy - STSYR	-	-	-	-	-	-
Practice	6:10	6:10	6:10	6:10	6:10	6:10

Latest Drop off Time

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	5:30	5:30	5:30	5:30	5:30	6:00
Policy - YCDSB	-	-	-	-	-	-
Policy - YRDSB	-	-	-	-	-	-
Policy - STSYR	-	-	-	-	-	-
Practice	5:22	5:22	5:22	5:22	5:22	5:22

Maximum Ride Time

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	75	75	75	75	75	90
Policy - YCDSB	60	60	60	75	75	75

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Policy - YRDSB	45	45	45	60	60	60
Policy - STSYR	60	60	60	60	75	75
Practice	60	60	60	60	75	75

Seated Students per Vehicle

Activity	JK/SK	Gr. 1-3	Gr. 4 - 6	Gr. 7	Gr. 8	Gr. 9-12
Common Practice	69	69	69	52	52	52
Policy - YCDSB	-	-	-	-	-	-
Policy - YRDSB	-	-	-	-	-	-
Policy - STSYR	-	-	-	-	-	-
Practice	63	63	63	63	63	48

Note 1: York Catholic District School Board – Secondary students without access to municipal transit service shall have their non- transportation zone reduced to 3.2 kilometres from 4.8 kilometres for students with access to public transportation.

York Region District School Board – Secondary students residing in an area with public transportation are ineligible. Secondary students without access to municipal transit and reside more than 3.2 kilometres are eligible for transportation

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