



OFFICE OF THE  
**City Auditor**

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# **Edmonton Transit Administration Review**

June 24, 2013

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The Office of the City Auditor conducted  
this project in accordance with the  
*International Standards for the  
Professional Practice of Internal Auditing*

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# Edmonton Transit Administration Review

## 1. Introduction

The Office of the City Auditor's (OCA) 2013 Annual Work Plan included a review of Edmonton Transit's Administration. Edmonton Transit System (ETS) is the largest branch in the Corporation. It has an operating budget in excess of \$280 million and more than 2000 positions. This review looked at the growth in positions in recent years, the ratio of front line employees to supervisors, and the levels of supervision within ETS.

## 2. Background

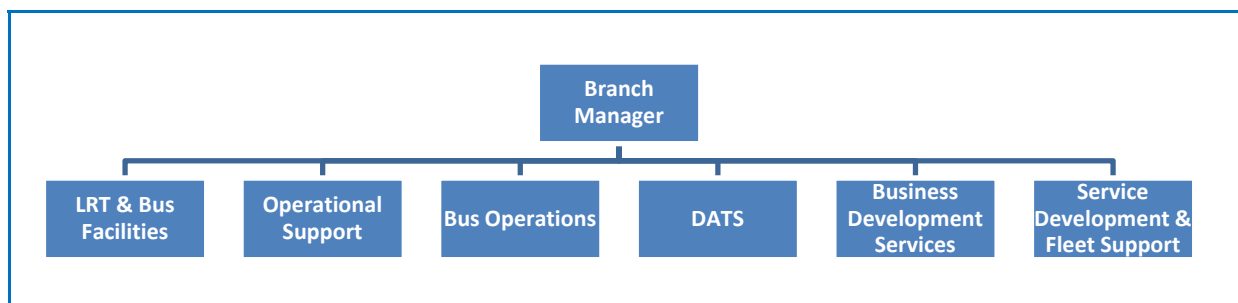
### 2.1. Edmonton Transit System

ETS is a branch of the Transportation Services Department. Its mission is to provide "customer-focused, safe, reliable and affordable public transit services that link people and places." The 2011-2013 ETS Business Plan identifies the following goals to support the mission:

- Offer convenient ways to take transit.
- Consistent and exceptional customer service.
- Safe, secure, and accessible public transit.
- Attract, develop, and retain an exceptional workforce.
- Reduce impact on the environment.
- Grow transit ridership.
- Optimize transit infrastructure and land use.
- Maintain transit infrastructure.

To achieve these goals, ETS has established seven operational and planning sections, including the Branch Manager's Office as shown in Figure 1.

**Figure 1 – ETS Organization Structure**



### 3. Objective and Scope

The objective for this review was to assess whether the current ETS organizational structure (levels of supervision) and span of control (employee/supervisor) ratios are reasonable for efficient and effective delivery of services.

We reviewed changes in the ETS organization structure and levels of supervision between 2007<sup>1</sup> and 2012. This review did not include reviewing positions associated with transit fleet maintenance services that are delivered by the Fleet Services Branch in the Corporate Services Department.

### 4. Methodology

We analysed available information from various perspectives:

1. Trend within ETS: We reviewed changes in the ETS organization structure and number of positions between 2007 and 2012. This included a review of the Branch and of each section to determine the reason for changes in the number of supervisors and spans of control.
2. City Wide Comparison: We compared the average span of control for both managers and supervisors in ETS to that of other larger branches and departments across the Corporation. This allowed us to determine how well ETS's structure aligned with corporate practices.
3. Public Transit Comparison: We compared the structure of ETS to Calgary Transit to determine whether there are areas of supervision that should be assessed further.
4. Global Trend: We reviewed recent reports on the trends and current state of span of control across various industries. The trend and current state can provide insight on potential opportunities for improvement.

#### 4.1. Definitions

When calculating span of control, it is important to define the characteristics of a supervisor, the differences between position classifications, and how spans of control are calculated.

Supervisor: Key characteristics of supervisor positions include:

1. Being responsible and accountable for making decision on hiring of applicants, annual performance appraisals of staff, and, when required, termination of employment of direct reports.

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<sup>1</sup> Organization charts are considered transitory documents. 2007 was the oldest organization chart that was available at the time of our review.

2. Allocating work assignments, instructing staff in the work to be performed, evaluating results, and providing coaching and mentoring to improve staff performance.
3. Supervisor positions are also assigned a number of technical and complex duties. Only a portion of the position's time may be spent on supervisory duties.
4. A supervisor may be a manager, a professional, or a union position.

Management: Positions classified as management include both managers and professionals that are not part of a union.

Manager: A manager ensures the overall effectiveness of a functional area (department, branch, or section) by providing supervision, leadership, and direction. A manager is responsible for the human, financial, and operational resources of a functional area. Supervision and leadership of employees represents a significant portion of their overall responsibilities.

Professional: A professional provides advanced knowledge in an area of expertise and provides technical direction and leadership for a process, system, and/or functional area to protect the organization and minimize risk. Responsibilities may or may not include supervising/leading staff. However, emphasis is about providing individual contribution and/or project management.

Span of Control: The span of control is the total number of positions reporting directly to a higher level supervisor.

Levels of Supervision: For purposes of this review the top level of supervision is the Branch Manager. The City Manager and General Manager were not included.

## 4.2. Assessing Organizational Structure

Levels of supervision determine how roles and responsibilities are delegated, coordinated and controlled, and how information flows between levels. The number of levels reflects the number of people a front line staff person must report through to reach the top manager.

It is important to recognize that supervision and management are two distinct and different activities. Supervision is the direction of people at work and management is the planning and control of the work process. A person can be a supervisor without being a manager.

Span of control is used to determine how relationships and reporting structures are established in an organization. Span of control directly affects the organization's communication, employee motivation, employee growth, reporting relationships, labor costs, and administrative overhead costs.

Early organizational management literature and guidelines focused on determining the optimal span of control that would apply to all organizations. However, recent studies have concluded that no hard and fast rule exists - the optimal number of direct reports varies greatly depending on industry, company size, and type of work. Figure 2 lists factors an organization needs to consider when determining appropriate spans of control. A description on how the factors influence the span of control is provided in Appendix 1.

**Figure 2 – Factors to help determine appropriate spans of control<sup>2</sup>**

| ← Narrow Spans       |  | Wide Spans →         |
|----------------------|--|----------------------|
| Complex              | <b>Nature of the Work</b>                              | Not Complex          |
| Different            | <b>Similarity of Activities Performed</b>              | Similar              |
| Not Clear            | <b>Clarity of Organizational Objectives</b>            | Clear                |
| Fuzzy                | <b>Degree of Task Certainty</b>                        | Definite Rules       |
| High                 | <b>Degree of Risk in the Work for the Organization</b> | Low                  |
| High                 | <b>Degree of Public Scrutiny</b>                       | Low                  |
| Weak                 | <b>Supervisor’s Qualifications and Experience</b>      | Strong               |
| Heavy                | <b>Burden of Non-supervisory Duties</b>                | Light                |
| High                 | <b>Degree of Coordination Required</b>                 | Low                  |
| Ineffective or Dated | <b>Communication Technology</b>                        | Effective or Current |
| None                 | <b>Availability of Staff Assistance</b>                | Abundant             |
| Weak                 | <b>Qualifications and Experience of Subordinates</b>   | Strong               |
| Dispersed            | <b>Geographic Location of Subordinates</b>             | Together             |
| ← More Supervisors   |  | Fewer Supervisors →  |

## 5. Observations and Analysis

Sections 5.1 and 5.2 summarize the results of our review of 2007 and 2012 organizational data provided by ETS. Section 5.3 is a summary of our review of 2013 Corporate information provided by the Human Resources Branch, Corporate Services Department. Section 5.4 compares ETS with external organizations.

<sup>2</sup> Adapted from City of Portland Audit Services Division’s Span of Control Study, 1994



## 5.1. 2007 – 2012 ETS Organization Change

This section summarizes changes in the ETS organization structure that took place between 2007 and 2012. The summary provides our analysis of the 2007 and 2012 organization charts, discussions with the director of each section of ETS, and review of supplemental information provided by ETS managers.

Between 2007 and 2012 the ETS Organization grew by 387 positions from 2,058 in 2007 to 2,445 in 2012. Table 1 shows that over the same period the average span of control dropped from 30.7 to 29.1 staff positions per supervisor.

**Table 1 – Supervisor Levels & Span of Control 2007-2012**

| Supervisor Level*                 | 2007      |                         | 2012      |                         |
|-----------------------------------|-----------|-------------------------|-----------|-------------------------|
|                                   | Number    | Average Span of Control | Number    | Average Span of Control |
| Level 1 Branch Manager            | 1         | 11.0                    | 1         | 10.0                    |
| Level 2 Director                  | 10        | 6.3                     | 7         | 6.0                     |
| Level 3 General Supervisor        | 35        | 51.5                    | 25        | 11.7                    |
| Level 4 Front Line Supervisor     | 21        | 8.5                     | 51        | 41.2                    |
| <b>Total Supervisor Positions</b> | <b>67</b> | <b>30.7</b>             | <b>84</b> | <b>29.1</b>             |

Table 1 shows that 17 of the 387 new positions have supervisor responsibilities. In addition, there are 221 new bus/LRT operator positions and 149 other front line positions (maintenance staff, peace officers, trainers, dispatchers, etc.). Only 3 of the 17 new supervisor positions are classified as managers. Information on the changes in spans of control in each section of ETS is provided in section 5.2 of this report.

Our analysis of supervisor positions shows that 63 of the 84 positions identified on the 2012 organization chart are managers. The remaining 21 positions are either professional or union positions. Since 2007, ETS management has been taking steps to increase the efficiency of the decision making process within the Branch. Table 1 shows a decrease in the number of senior level supervisors and an increase in the number of front line supervisors. Shifting supervisory responsibility from higher levels, usually managers, to the front line reduces the red tape for front line staff, increases front line responsibility and accountability, and results in decisions being made quicker.

Two of the more significant changes that have impacted the ETS span of control are:

- One director position was created to provide general and consistent direction across the four bus operation divisions (i.e., Westwood, Mitchell, Ferrier and Centennial Garages). The previous divisional director positions (level 2) were reclassified as General Supervisors (level 3).
- The number of smaller work teams required to implement and manage highly technical and specialized programs has increased. The most senior position on the

work team is normally assigned supervisory duties. Examples of these programs include UPass, ETS@Work, Smart Fare and electronic LRT signage.

### 5.1.1. Performance Indicators

The changes in the ETS organizational structure and accompanying processes have generally had a positive impact on performance. Statistics maintained by ETS show that between 2007 and 2011:

- Customer satisfaction with bus and LRT service increased from 88% to 92%.
- Customer satisfaction with DATS service remained constant at 95%.
- Efficiency of bus operations, measured in terms of vehicle hours per employee and vehicle kilometers per employee increased by 8.5% and 18.6% respectively.
- DATS trips increased by approximately 58,000 or 6.7%.
- Bus/LRT ridership increased by approximately 18.4 million or 29.7%

In January 2013 the OCA reported that ETS's productivity, measured as Bus/LRT ridership per FTE, increased by 2.1% between 2007 and 2011.

### Conclusion

The change in performance measures suggests that the increase in positions, both supervisor and front line staff, along with shifting responsibility for decision-making to the front line has had a positive impact on operations. Based on our analysis of branch level information, we believe that the four levels of supervision are reasonable.

## 5.2. Current Organizational Structure

The observations in this section reflects our analysis of the 2007 and 2012 organization charts, review of job responsibilities of supervisors, discussions with the Directors, and review of supplemental information provided to support assertions by the Directors. Table 2 summarizes the changes in positions by section. A description of the services provided by each section and information on the changes in positions follows the table.

**Table 2 – Change in Established Positions 2007 – 2012**

| Section                 | 2007<br>Established<br>Positions | 2012<br>Established<br>Positions | Change     |
|-------------------------|----------------------------------|----------------------------------|------------|
| Branch Manager's Office | 48                               | 8                                | (40)       |
| LRT & Bus Facilities    | 128                              | 225                              | 97         |
| Operational Support     | 89                               | 144                              | 55         |
| Bus Operations          | 1,531                            | 1,766                            | 235        |
| DATS                    | 199                              | 215                              | 16         |
| Business Development    | 34                               | 56                               | 22         |
| Service Development     | 29                               | 31                               | 2          |
| <b>Total</b>            | <b>2,058</b>                     | <b>2,445</b>                     | <b>387</b> |

### 5.2.1. Branch Manager's Office

Services provided by the Branch Manager's Office include oversight for occupational health and safety, support the Edmonton Transit System Advisory Board, and management of functions that cross all sections.

The decrease in positions is a result of the ETS information call centre being merged into the 311 Call Centre and restructuring of the Bus Operations section that resulted in the elimination of a director-level position.

In 2012, ten positions, including 7 Directors, reported to the Branch Manager.

### 5.2.2. LRT & Bus Facilities

Services provided by the LRT & Bus Facilities Section include design and maintenance of the LRT infrastructure, operation of the LRT system, design, construction and maintenance of bus facilities, and maintenance of the transit communication system.

The LRT and Bus Facilities Section added 97 positions between 2007 and 2012. One of the 97 positions has supervisory responsibilities. The remaining 96 positions are front line staff needed for system expansion and replacement of existing infrastructure that has reached the end of its useful life.

In 2012, there were 37 LRT Operators reporting to 1 Supervisor. For all other positions, the average span of control in this Section was 13.4 staff per supervisor.

### 5.2.3. Operational Support

The Operational Support Section is responsible for safety and security of the bus and LRT systems. This includes providing safety and security training for ETS staff,

emergency planning, and collision investigation. The section is also responsible for the City Hall and Downtown Peace Officer program.

There were 55 positions added to the Operational Support Section between 2007 and 2012. Four of the 55 positions had supervisory responsibilities. The increase included 10 Peace Officer positions added for LRT patrols and 16 positions transferring from Corporate Security for the City Hall/Churchill Square Peace Officer program. The remaining increase provides coverage for the growth of the LRT and bus systems, unprecedented increase in ridership and reflects the priority that ETS managers place on the safety and security of their customers. There was also no increase in the number of Transit Inspectors who monitor and report on-road safety and reliability to Bus Operation Supervisors.

In 2012, the average span of control in this Section was 8.9 staff per supervisor.

#### **5.2.4. Bus Operations**

Services provided by the Bus Operations Section include shift design, operator resource planning and dispatch. The Section also oversees hiring and training of all Bus, LRT and DATS Operators.

The Bus Operations Section added 235 positions between 2007 and 2012. Two of the 235 positions have supervisory responsibilities. There were 206 additional Bus Operator positions; the remaining 27 positions provide coverage in the areas of resource management, shift design, training, and dispatch. The increase in positions also provides coverage for the Centennial Garage that opened in 2010. There was no increase in the number of Bus Operations Supervisors.

In 2012, there was an average of 168.2 Bus Operators per supervisor. all other positions, the average span of control in this Section was 6.1 staff per supervisor.

#### **5.2.5. DATS**

The DATS Section is responsible for all aspects of para-transit service. This includes service planning, customer care, community relations, client registration, scheduling, dispatching, and resource management.

The DATS section added 16 positions between 2007 and 2012. Three of these positions had supervisor responsibilities. The other new positions were in the customer care and service deployment areas.

There was no increase in the number of DATS Operators. ETS management attributed the ability to deliver more trips without an increase in operators to improvements in the dispatch system and business processes including the effective use of contract services.

In 2012, there were 127 DATS Operators reporting to 1 Supervisor. For the other positions in the Section, the average span of control was 10.8 staff per supervisor.

#### **5.2.6. Business Development Services**

The Business Development Services Section is responsible for strategic, business, and financial planning for ETS. It also provides customer analytics, research, market planning services, as well as design, production and distribution of fare products and public information.

The Business Development Services section added 22 positions between 2007 and 2012. Eight of the 22 positions had supervisory responsibilities. The positions were added to deliver a number of high profile programs. These include established programs such as UPass, ETS@Work, Senior and AISH passes, and development of new programs such as Smart Bus, Smart Fare, and electronic LRT signage that informs customers on LRT arrival times.

In total there are 13 positions with supervisory duties in this area. Four of the positions are management, two are professionals, and seven are union positions assigned supervisory duties. In 2012, the average span of control in this Section was 4.2 staff per supervisor.

Advances in technology, increased customer expectations, and the need to increase the ridership base are factors that contributed to the 64.7% increase in positions and the Section's current organizational structure. The Director of the Business Development Services Section will need to monitor changes in the environment and their impact on services to ensure the span of control continues to be reasonable for efficient and effective delivery of services.

#### **5.2.7. Service Development & Fleet Support**

Services provided by Service Development & Fleet Support Section include service planning and scheduling, review of development and land use agreements, regional services, maintaining BusLink, and coordination of fleet maintenance.

The Service Development & Fleet Support Section added 2 positions between 2007 and 2012. The positions were needed due to increased workload from system growth and introduction of highly technical functions such as BusLink.

In total there are seven positions with supervisor responsibilities in this area. Three of the positions are management, three are professionals and one is a union position assigned supervisory duties. In 2012 the average span of control in this Section was 4.3 staff per supervisor.

## Conclusion

Based on the information we reviewed, the increase in positions in each Section of ETS is a reflection of system growth and changes in the environment as customers expect instant on-line access to fare product, schedule, and performance information. The summary of position responsibilities we reviewed shows that all positions classified as supervisory directly deliver service to meet customer expectations, not just supervision of others.

Given the nature of work, changing customer expectations, degree of public scrutiny, burden of non-supervisory duties, and degree of coordination, we believe the number of supervisors and the span of control are reasonable. In sections with low spans of control, ETS managers should monitor changes in the service requirements and customer expectations to ensure the level of supervision and span of control continues to be reasonable for efficient and effective delivery of services.

### 5.3. Comparison to City Operations

The analysis of information in this section is based on reports generated from PeopleSoft, the City's human resource management system in March 2013. For the purpose of this review the data was analyzed in two ways: supervisor span of control and non-union (CEMA) manager span of control.

City operations and services are very diverse and these differences influence supervisor to staff ratios therefore it is critical to set a context for this review. Two notable studies conducted by Internal Auditors for Seattle and Portland provide some valuable insights. Both concluded that there is no ideal ratio of staff to managers and that a number of factors influence span of control. For example some positions are 100% supervisory (larger span of control) while others combine supervision with responsibility for completing individually assigned technical activities (smaller span of control). This factor illustrates that the greater the number of non-supervisory tasks that a supervisor is assigned the fewer staff they can effectively manage. A list of the factors that influence the span of control is provided in figure 2 on page 4 of this report. The important part is that there is no one universal ratio to cover all diverse business units.

While a fair comparison cannot be made due to the diverse businesses and the impact that different factors have on supervisor ratios, the following tables were constructed to assess whether the current Transit supervisor to staff ratios are reasonable based on a comparison to other City operations.

Table 3 is a comparison of the average non-union and union supervisory span of control in ETS to three other large Branches in the City of Edmonton, their respective Departments, and the Corporate total. The average span of control presented in the table is from the summary report we received. The three Branches listed in the table

were selected because a high percentage of their workforce works outside a traditional office environment and, therefore, are the more comparable to ETS than other areas.

**Table 3 – Supervisor Span of Control Comparison – 2013**

| Branch/Department                             | Average Span of Control (Staff/Supervisor) |
|---|--|
| Edmonton Transit                              | 33.9*                                      |
| Transportation Operations                     | 11.8                                       |
| <b>Transportation Services Department</b>     | <b>13.0</b>                                |
| Neighbourhoods Parks and Community Recreation | 20.6                                       |
| <b>Community Services Department</b>          | <b>13.0</b>                                |
| Fleet Services                                | 12.6                                       |
| <b>Corporate Services Department</b>          | <b>11.6</b>                                |
| <b>City of Edmonton</b>                       | <b>11.2</b>                                |

\* The difference between the span of control for Edmonton Transit shown on this table (33.9) and on table 1 (29.1) on page 5 is due to the different time periods and the level of detail maintained by the Human Resource Branch and Edmonton Transit.

While a fair comparison cannot be made due to the differences in the services provided, the table shows that ETS supervisors have a wider span of control than other City of Edmonton business areas.

Another way to look at organization structures is to compare non-union (CEMA) manager levels across the corporation. The City has criteria to determine whether positions are classified as a non-union manager or professional providing greater consistency in classifications across the Corporation. Table 4 is a comparison of ETS manager levels with larger Branches, Departments and Corporate totals.

**Table 4 – Non-Union Manager Positions & Span of Control**

| Branch/Department                             | Manager Positions | Non-Manager Positions |               | Total Positions | Average Staff/Mgr. Position |
|---|-------------------|-----------------------|---------------|-----------------|-----------------------------|
|   |                   | Professional          | Union         |                 |                             |
| <b>Edmonton Transit</b>                       | <b>63</b>         | <b>75</b>             | <b>2,177</b>  | <b>2,315</b>    | <b>36.7</b>                 |
| Transportation Operations                     | 26                | 53                    | 971           | 1,050           | 40.4                        |
| <b>Transportation Services Department</b>     | <b>120</b>        | <b>229</b>            | <b>3,296</b>  | <b>3,645</b>    | <b>30.4</b>                 |
| Neighbourhoods Parks and Community Recreation | 28                | 8                     | 1,099         | 1,135           | 40.5                        |
| <b>Community Services Department</b>          | <b>91</b>         | <b>76</b>             | <b>4,747</b>  | <b>4,914</b>    | <b>54.0</b>                 |
| Fleet Services                                | 33                | 18                    | 708           | 759             | 23.0                        |
| <b>Corporate Services Department</b>          | <b>97</b>         | <b>184</b>            | <b>1,612</b>  | <b>1,893</b>    | <b>19.5</b>                 |
| <b>City of Edmonton</b>                       | <b>466</b>        | <b>729</b>            | <b>11,736</b> | <b>12,931</b>   | <b>27.6</b>                 |

This table shows that there is an average of 36.7 staff positions for each manager position in ETS, higher than the Corporate average of 27.6 staff per manager position. Transportation Operations and Neighbourhoods Parks and Community Recreation have slightly higher averages. However, these averages also include temporary positions that are seasonal in nature. Temporary positions account for 29% and 78% of their total positions respectively.

**Conclusion**

In our opinion, based on review of corporate information that was available for review, the span of control for supervisors and manager in ETS appears reasonable.

**5.4. Comparison to External Organizations/Industries**

**5.4.1. Edmonton/Calgary Comparison**

The organization structure and services illustrated in Table 5 show the similarities between ETS and Calgary Transit. However, from a supervisory perspective each system has adopted different operating philosophies which result in different levels of supervision and span of control.

**Table 5 – Edmonton/Calgary Comparison**

|                               | <b>ETS</b>   | <b>Calgary Transit</b>   |
|-------------------------------|--|--|
| <b>Organization Structure</b> | <ul style="list-style-type: none"> <li>• Branch Manager’s Office</li> <li>• Operational Support</li> <li>• Bus Operations</li> <li>• LRT &amp; Bus Facilities</li> <li>• DATS</li> <li>• Business Development Services</li> <li>• Service Development &amp; Fleet Support</li> </ul> | <ul style="list-style-type: none"> <li>• Director’s Office &amp; Administrative Services</li> <li>• Safety &amp; Security</li> <li>• Transit Service</li> <li>• Facilities Division</li> <li>• Access Calgary</li> <li>• Transit Planning</li> <li>• Service Design</li> <li>• Fleet Division</li> </ul> |



|  | ETS   | Calgary Transit   |
|--|---|---|
| <b>Services</b>                              | <ul style="list-style-type: none"> <li>• Bus</li> <li>• Community Service</li> <li>• LRT</li> <li>• DATS</li> </ul> | <ul style="list-style-type: none"> <li>• Bus</li> <li>• Community Shuttle</li> <li>• LRT</li> <li>• Para-transit Service</li> </ul> |
| <b>Select 2012 Workforce<sup>3</sup></b>     |   |   |
| Operators (Bus & LRT)                        | 1,719   | 2,002   |
| Bus/LRT Supervisors                          | 11  | 51  |
| Total Staff                                  | 2,445   | 3,034   |
| Management/Professionals                     | 138   | 205   |
| <b>2011 Operating Statistics<sup>4</sup></b> |   |   |
| Active Vehicles                              |   |   |
| Buses  | 970   | 995   |
| Light Rail Vehicles                          | 73  | 187   |
| Passengers (000)                             | 80,292  | 96,215  |

The organizational structure and services provided by ETS and Calgary Transit are similar, with Calgary's operation being larger. The following are a few differences that need to be considered when comparing the two organizations:

1. The Fleet Division in Calgary maintains its entire bus and LRT fleet with a workforce of over 500 staff. In Edmonton, ETS only maintains light rail vehicles. The bus fleet is maintained by Fleet Services in the Corporate Services Department.
2. Para-transit services in Calgary are planned and dispatched by transit staff. All service is provided by contracted service providers. ETS maintains a fleet of para-transit buses and employs 127 operators that deliver most of the service. Contractors are used to augment the service.
3. In Calgary, bus and LRT operators report to supervisors whose duties include on-road monitoring. In Edmonton, Operations Supervisors do not monitor on-road performance. On-road monitoring is part of the Transit Inspector's responsibilities and they are not classified as supervisors.

## Conclusion

While ETS and Calgary Transit have many similarities, the differences in operating philosophies make it difficult to compare the span of control. However, based on the information we reviewed, we believe the ETS span of control is reasonable.

<sup>3</sup> Calgary Workforce Source, Calgary Transit Overtime Management Audit – April 10, 2013

<sup>4</sup> Source, CUTA Fact Book – 2011 Operating Data

#### 5.4.2. Global Trend

We reviewed a number of reports and studies on the spans of control that were produced over the past decade. We focused on two recent studies to gain an understanding of current global trends.

- A 2012 benchmarking survey<sup>5</sup> indicated that the average span of control for 17 organizations that participated in the survey averaged 6.4 employees per manager. The survey results ranged from 5.2 to 15.6 employees per manager. The study references PwC's Saratoga international benchmarking data that suggests best practice averages 9.9 employees per manager. Explanations for the variances in results include geographic location, employee experience, nature of work, size of organizations, and range of industries represented in the study. The study states that:

*However, recent studies conclude that no hard and fast rule exists - the optimal number of reports varies greatly depending on industry, company size and type of work. Nevertheless, recent years' trends have been towards wider spans of control thereby reducing costs, speeding up decision making and increasing flexibility and responsiveness to market changes.*

- A 2010 study of counties in California showed that the average span of control in each of the five counties surveyed ranged from 5.6 to 9.6 staff per supervisor. The report notes that:

*The span of control and the layers of management in an organization determine the way the organization delegates tasks to organizational units and sub-units. The optimum span of control for any given agency or department is dependent upon numerous variables; thus, it is difficult to identify what is an ideal span of control ratio.*

The authors noted that:

*These results should be considered within the context of organizational structure decisions, performance outcomes and succession planning objectives.*

Comparing ETS to a single industry or agency would not produce meaningful results. However, comparing the span of control to trends reported for a cross section of industries and government operations can provide some assurance regarding alignment with current trends. We noted that both studies covered a variety of industries or government operations but that neither study included public transit.

Comparing ETS' average span of control, 29.1 staff per supervisor in 2012, can be misinterpreted due to the unique characteristics of bus operations in ETS. We believe a

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<sup>5</sup> Pricewaterhouse Coopers, 2012 Business Effectiveness Benchmarking Survey

more realistic comparison would exclude the bus operators/supervisors positions. Table 6 shows the spans of control for bus operations and the remainder of ETS functions.

**Table 6 – Span of Control 2007-2012**

|   | 2007                  |                 |                         | 2012                  |                 |                         |
|---|-----------------------|-----------------|-------------------------|-----------------------|-----------------|-------------------------|
|   | Number of Supervisors | Total Positions | Average Span of Control | Number of Supervisors | Total Positions | Average Span of Control |
| Bus, LRT & DATS Operations              | 12                    | 1,625           | 135.4                   | 12                    | 1,846           | 153.8                   |
| ETS Excluding Bus, LRT & DATS Operators | 55                    | 433             | 7.9                     | 62                    | 599             | 9.7                     |
| <b>Total</b>                            | <b>67</b>             | <b>2,058</b>    | <b>30.7</b>             | <b>84</b>             | <b>2,445</b>    | <b>29.1</b>             |

Excluding bus operators and supervisors, ETS's span of control increased from 7.9 to 9.7 from 2007 to 2012 which is consistent with the results of both studies.

### Conclusion

The current ETS span of control falls within the range quoted in current studies and the increase in span of control is consistent with the trend reported by PwC. We believe this supports our conclusion that ETS's span of control is reasonable.

## 6. Conclusions

We analyzed the ETS organization from four perspectives:

1. A Branch perspective that considered changes in the organization that took place from 2007 to 2012. This perspective included a review of the current structure and rationale for supervisors in each section of the Branch.
2. Comparison of the number of supervisors in ETS supervisory roles to other Branch, Department and Corporate totals.
3. Comparison of ETS organization to Calgary Transit. The focus of this comparison was on the supervision in the bus/LRT operations areas.
4. Comparison to global benchmark information.

The results of our analysis for all four perspectives consistently showed that the ETS supervisor and manager levels are reasonable. Therefore, we are not making any recommendations.

We thank management and staff of ETS and the Human Resources Branch for their cooperation and openness during this review.



## Appendix 1 – Description of Factors Influencing Span of Control

| FACTOR  | DESCRIPTION   |
|---|---|
| Nature of Work                                  | If the work is highly complex, technical or difficult the span of control will be narrow and vice-versa.  |
| Similarity of Activities Performed              | Where work is diversified or qualitative the span of control will be narrow.<br>Where work is routine or repetitive the span of control can be wider.   |
| Clarity of Organizational Objectives            | If plans are clear and responsibilities well defined, then the span of control will be wide.  |
| Degree of Task Certainty                        | Jobs that are complex, ambiguous, dynamic or otherwise complicated will likely require more supervision and a narrower span of control.<br>If jobs are well designed and tools provide direct performance feedback, the span of control may be wider.   |
| Degree of Risk in the Work for the Organization | Attempts to flatten or streamline an organization can result in the loss of knowledgeable or skilled supervisors and employees, adversely impacting workload and performance of remaining staff. When adverse effects emerge, organizations may add supervisory positions, not necessarily in the best way, having lost the experience of those who had departed. |
| Degree of Public Scrutiny                       | A high degree of public scrutiny can create a risk-averse culture. Span of control is narrowed to reduce the risk of violating goals. Efficiency may be sacrificed to reduce the risk of potential external intervention.   |
| Supervisor's Qualifications and Experience      | A supervisor that possesses a reasonably high degree of knowledge and is well trained can supervise more people, leading to a wider span of control.  |
| Burden of Non-supervisory duties                | If the supervisor is busy with other work, there is less time for subordinates and the span of control will be narrow.  |
| Degree of Coordination Required                 | High coordination requires more supervision and results in a narrower span of control.  |

| <b>FACTOR</b>                                 | <b>DESCRIPTION</b>   |
|---|--|
| Communication Technology                      | Cell phones email, and other forms of technology that facilitate communication and the exchange of information make it possible for supervisors to increase their span of control.   |
| Availability of Staff Assistance              | Use of staff assistance (collect information, process communication, and issue orders and instructions on behalf of their superior) reduces the work load of supervisors and enables them to supervise a greater number of subordinates. |
| Qualifications and Experience of Subordinates | Subordinates that are knowledgeable and well-trained can be delegated more responsibility and require less supervision, allowing for a wider span of control.<br><br>Employees who are trusted and empowered require less supervision.   |
| Geographic Location of Subordinates           | When subordinates are scattered in multiple locations, the span of control may be narrow.<br><br>When subordinates are located in a single location, the span of control can be wider.   |