Business Case

Feasibility Study for an Integrated Emergency Communication (Dispatch) Service System

Prepared for City of Greater Sudbury
by IBI Group

June 4, 2014

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June 4, 2014

Mr. Tim P. Beadman
Chief of Fire and Paramedic Services
Emergency Services Department
City of Greater Sudbury
239 Montee Principale, Unit 2
Azilda, ON P0M 1B0

Dear Mr. Beadman:

FEASIBILITY STUDY FOR AN INTEGRATED EMERGENCY COMMUNICATIONS (DISPATCH) SERVICE SYSTEM

IBI Group is pleased to submit this Business Case report on the above project.

The project objective is to investigate the feasibility to integrate Emergency Medical Services dispatch *[a service managed by the Ontario Ministry of Health and Long Term Care]* with the City's dispatch system for 9-1-1, Police and Fire, to achieve a fully integrated Emergency Communications Services system for Greater Sudbury, and to develop a Business Case for City Council's consideration and submission to the Ontario Ministry of Health and Long Term Care.

This Business Case report contains the findings and recommendations arising from our investigation.

Thank you for giving us the opportunity to work on this most interesting assignment.

Sincerely,

IBI GROUP

Lee S. Sims
Director

Marvin Rubinstein
Associate

Enc.

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Preamble

At a meeting on March 26, 2012 the City's Community Services Committee received and endorsed a Manager's Report submitted jointly by Tim Beadman, the City's Chief of Fire and Paramedic Services and Doug Nadorozny, the City's Chief Administrative Officer, recommending:

"That the City of Greater Sudbury undertake a feasibility study to achieve a fully integrated Emergency Communications Services System for Greater Sudbury;

And that the Chief of Emergency Services working with Police Services and the Office of the Chief Administrative Officer develop a Business Case for the consideration of the City's Community Services Committee/Council and submission to the Ontario Ministry of Health and Long Term Care".

The minutes of that Community Services Committee meeting were adopted by City Council on April 17, 2012.

On May 15, 2012 the City's Purchasing Agent acting on behalf of the Chief of Fire and Paramedic Services, issued a Request-for-Proposals/FES12-5, to retain the services of a professional consultant having expertise in emergency communications and knowledge of industry best practices to undertake the above study.

IBI Group's participation in the study is the direct result of that competitive procurement process. Our proposal was submitted on June 6, 2012 and we received formal award and approval to proceed on September 4, 2012.

The study was carried out under the direction of a Working Group consisting of the Chief of Fire and Paramedic Services and the Director of Corporate Services of the Greater Sudbury Police Services, supported by their respective staffs.

The Working Group invited the Ontario Ministry of Health and Long Term Care (MOHLTC) to participate in the study. The Ministry was unable to participate due to other commitments.

This Business Case report contains the feasibility study findings and recommendations. Readers are advised that the recommendations represent the opinions of IBI Group in its role as consultant, and while the Client may choose to accept some or all of the recommendations, they also may decide to pursue alternative strategies.

Executive Summary

Study Objective

The City of Greater Sudbury retained IBI Group to investigate the feasibility to integrate Emergency Medical Services dispatch *[a service managed by the Ontario Ministry of Health and Long Term Care]* with the City's current dispatch system for 9-1-1, Police and Fire, to achieve a fully integrated Emergency Communications Services system for Greater Sudbury, and to develop a Business Case for City Council's consideration and submission to the Ontario Ministry of Health and Long Term Care. This Business Case report contains the findings and recommendations arising from our investigation.

Background

Emergency communications plays a significant role within the continuum of police, fire and EMS public safety services. As the 'first' of the first responders, emergency communications personnel serve as the critical link between callers and the emergency help they require.

Providing continuous coverage by way of telephone, radio and computer aided dispatch (CAD) systems, emergency communications personnel evaluate incoming 9-1-1 calls to determine the location and urgency of each incident, and they dispatch emergency responder resources as required (police, fire and EMS). They also provide front-line responders with communications support, monitoring front-line responder activity, responding as requested with additional information, dispatching additional resource support and when required, executing a coordinated multi-agency response.

In times of crisis it is not only the caller (i.e., the public) that relies on emergency communications for help. Emergency service responders (police, fire and EMS) also rely on emergency communications for expedient call taking and dispatch services that will enable their front-line resources to respond quickly, safely and effectively. In short, the timeliness, speed and quality of the work performed by emergency communications personnel directly impacts the efficiency and effectiveness of the emergency services that the public receives from police, fire and EMS responders.

In this respect, Greater Sudbury's proposal to implement a fully integrated emergency communications services system stems from a desire to streamline and improve the quality of the communications services and by extension, improve the efficiency and effectiveness of the emergency services that the public receives from the City's police, fire and EMS responders.

Business Case Findings

Greater Sudbury has successfully implemented a 'partially consolidated' emergency communications centre that is staffed with communicators who are cross-trained to deliver 9-1-1 call taking on an integrated basis with police and fire dispatch. The centre, which is managed by Greater Sudbury Police Services (GSPS) has been operating in this manner for over 15 years.

It would appear that one of the original objectives for consolidating the two dispatch services (police and fire) was to contain costs. Drawing from our research of emergency dispatch best practices, we conclude that the cost to deliver police and fire dispatch services in Greater Sudbury is comparable to that of multiple other jurisdictions, and therefore in our opinion, this objective has been attained. In addition the consolidation of police and fire dispatch has

improved interoperability of communications and inter-agency coordination of police and fire field operations.

The above notwithstanding, our research (as set out in the body of this report) demonstrates that a 'fully integrated' emergency communications services system designed to deliver 9-1-1 on an integrated basis with police, fire and EMS dispatch would be preferable to the City's existing partially consolidated dispatch model. The potential benefits to all three emergency services include:

- Potential to streamline the dispatch functions and improve service response times
- Potential to improve interoperability of communications
- Potential to improve inter-agency coordination of deployment and field operations
- Potential to enhance information sharing and responder safety
- Potential to save costs by sharing the same secure communications facility, CAD and radio communications systems, and communications staff resources.

The research affirms that Greater Sudbury's proposal to integrate EMS dispatch with the City's current dispatch system for 9-1-1, Police and Fire is consistent with approaches that other North American jurisdictions have taken to improve emergency dispatch services efficiency and cost-effectiveness. Calgary, Denver, Portland and Fairfax are examples of jurisdictions that have implemented "fully integrated" emergency communications services systems.

Greater Sudbury's proposal to assume operational responsibility for EMS dispatch is also consistent with ambulance dispatch arrangements in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, and for such services the Ministry pays 100 percent of the costs.

Numerous Ontario municipalities, including Greater Sudbury, share a common concern over ambulance dispatch. Specifically, the issue is that of a 3rd party ambulance communications centre (a non-municipal entity) having authority to deploy the municipality's EMS resources and the consequential affects of such decisions on the municipality's capabilities to sustain rapid EMS response time performance, and to operate the EMS services effectively, within approved operating budget. For Toronto, Ottawa, Niagara and Timmins, such concerns have been largely alleviated. Since Greater Sudbury's proposal to assume operational responsibility for EMS dispatch is consistent with ambulance dispatch arrangements in the above named municipalities, the proposed transfer of EMS dispatch responsibility should also alleviate such concerns as they apply to Greater Sudbury.

The cost to deliver the full range of emergency communications services in Greater Sudbury is approximately $6.5 million a year. This includes $3.5 million that the City pays for 9-1-1 and police-fire dispatch, and $3 million that the MOHLTC pays for ambulance dispatch. This works out to about $36 per capita which, according to our research, is higher than the per capita costs to operate fully integrated dispatch systems in Calgary, Denver, Portland and Fairfax County Virginia. In most of these jurisdictions the costs is $27 to $28 per capita CAN.

From our analysis (presented in Section 9 of this report), we have concluded that the cost to deliver emergency communications services in Greater Sudbury can be reduced by fully integrating EMS dispatch with the existing dispatch system for 9-1-1, police and fire. In our opinion, relative to current costs the potential cost savings can be in excess of 20 percent, which in Greater Sudbury would translate to a potential savings of $1 million or more a year.

The above notwithstanding, according to the knowledgeable and experienced agencies with whom we consulted, the potential for cost savings should not be the principal objective for

Second, the change requires an Executive Lead (a champion) who is prepared to take an active role working with the participants, stakeholders and elected officials over a period of several years to see the transition through to its ultimate state.

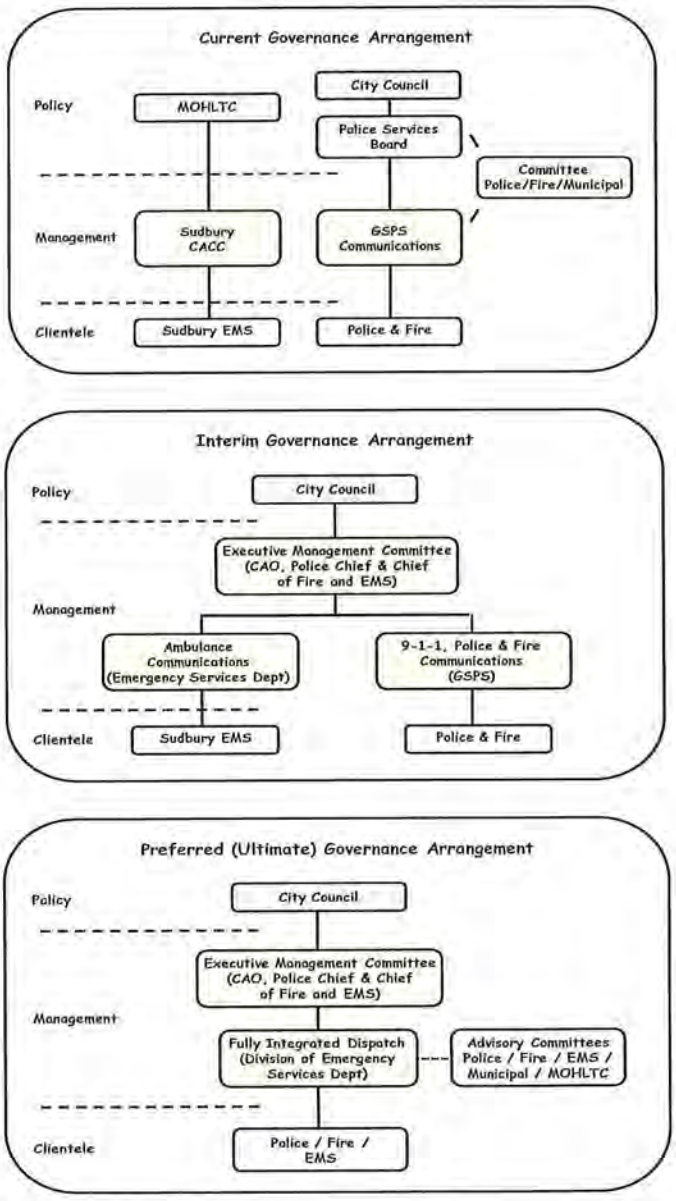
The above notwithstanding, in our opinion Greater Sudbury's transition to a fully integrated emergency dispatch system should not be overly difficult given the City's prior experience operating an EMS service, its prior experience operating a consolidated police and fire dispatch, and its reputation for constructive, consultative and cooperative employee relations.

By taking on the ambulance dispatch function, Greater Sudbury will be assuming accountability for the provision of seamless ambulance dispatch services that meet MOHLTC standards. In this respect, a major challenge will be not only to sustain these important provincial policy interests but also to demonstrate this on an ongoing basis throughout the entirety of the transition process and beyond.

To such ends, the transition will need to be carried out in a manner and pace that accommodates transparency and the MOHLTC's ability to review and comment on work in progress.

In this, it is our view that the proposed change to a fully integrated dispatch system arrangement will have to be implemented in stages. A suggested staging plan is shown in Exhibit E.2.

Exhibit E.2
Staging Plan



This plan includes an interim stage (potentially of 1 to 2 years duration) during which there would be only one 'major' organizational change, that being the Emergency Services Department's assumption of responsibility for ambulance communications. There would be no other significant organizational changes that could potentially detract from the City's singular purpose at the outset of the transition process, that being to clearly demonstrate its capability to effectively manage ambulance dispatch.

The preferred governance arrangement will provide increased flexibility to align all aspects of the emergency communications operation to one single-purpose mandate dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality, and capable of expediently executing a coordinated multi-agency response to an emergency. This would include facility design, organizational structure, supervision, administration, technology decisions, staff resourcing, training, cross-training, risk management, quality management, etc. Capital and operating budgets for the business unit would be similarly aligned to this single-purpose mandate.

Operating as a stand-alone business unit will make it possible to establish an operating culture, policy and a comprehensive set of SOP's that promote/support interoperability of communications among emergency services to complement their field interactions during routine day-to-day operations and in the management of large scale incidents requiring a multi-agency response. Operating as a stand-alone business unit (with the single-purpose mandate described above) increases the possibility to establish a work environment, business supports and technological systems that are conducive to the expedient delivery of emergency communications and dispatch functions. This would include consolidation to a single communications centre of appropriate size, design and layout; and preferably, shared use of one state-of-the-art CAD system, as well as one set of systems for telephone and radio communications.

This governance option increases the likelihood of establishing an accountability framework that promotes risk management and continuous quality improvement as basic business practices, potentially to the extent that the City's dispatch system will be regarded by peers as an industry leader and its operations cited as industry Best Practices.

This option greatly simplifies the governance arrangement at the policy level relative to the present model, in which accountability for the dispatch system is split between the Greater Sudbury Police Services Board, a management committee (consisting of the CAO, Police Chief and Fire Chief) and City Council. The preferred governance arrangement assigns full accountability for the dispatch system to City Council.

The preferred governance arrangement assures quality decisions pertaining to operations and budget by way of an Executive Management Committee, desirably consisting of the following executives: Chief Administrative Officer (serving as Chair), Chief of Police, and the Chief of Fire and Paramedic Services. This governance arrangement also assures client satisfaction by way of joint and individual advisory committees comprised of police, fire and EMS. Similarly, an advisory committee will serve as forum for engagement with MOHLTC.

Last, but not least, the preferred governance arrangement will give clear recognition to the role of emergency communicators as the 'first' of the first responders within the continuum of police, fire and EMS public safety services.

Going Forward

Drawing from best practices research we have identified two factors that are critical to the successful implementation of a fully integrated emergency dispatch system.

First, a change of this nature, with its inherent challenges to individual services, labour groups, etc, will not evolve informally. It must be mandated. The decision must come from top (e.g., from municipal Council, provincial or state authority) with a clear going-forward understanding that it may take several years to fully complete the transition.

delivers EMS dispatch for the City of Ottawa as well as the neighbouring County of Stormont, Dundas and Glengarry; the United Counties of Prescott and Russell; and for the City of Cornwall.

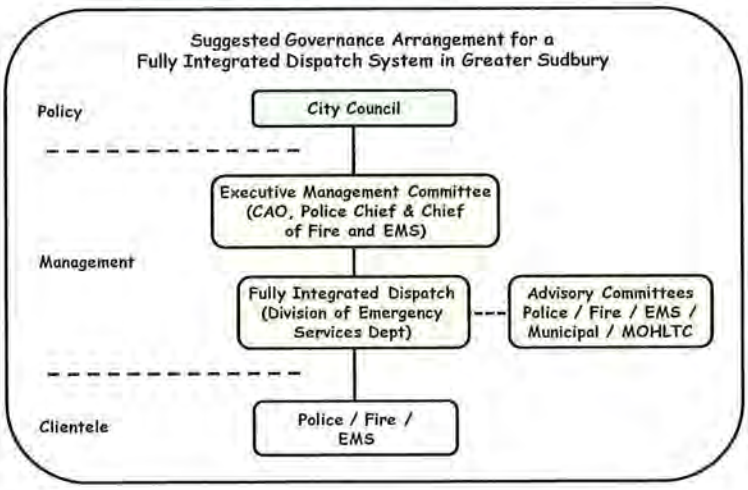
Preferred Governance Arrangement

By way of this research we have investigated the best practice attributes that apply to fully integrated dispatch delivery systems. In our opinion, many of these will also apply to Greater Sudbury's proposal. Best practices attributes are discussed in Section 8 and a potential staffing resource complement is presented in Section 9.

In respect of governance options, our finding is as follows. If Greater Sudbury's intent is to advance from the current partially consolidated dispatch system to one that delivers EMS dispatch on a fully integrated basis with 9-1-1 and the dispatch services for police and fire then, based on the best practices experience of other North American jurisdictions, the preferred governance arrangement is one in which the fully integrated system is structured to operate as a stand-alone business unit within the City's administration.

Our suggested (preferred) governance arrangement is shown in Exhibit E.1. In this arrangement the fully integrated emergency dispatch system would function as a separate division of the Greater Sudbury Emergency Services Department.

Exhibit E.1
Suggested (Preferred) Governance Arrangement



Our rationale is that the Emergency Services Department already has responsibility for delivery of Fire, EMS and Emergency Management services, and that it would be reasonable to add emergency communications to this portfolio.

The preferred governance arrangement would be similar to those of other fully integrated dispatch systems in Portland and Fairfax where emergency communications operates as a separate municipal department; in Calgary where emergency communications functions as a division of the Department of Community and Protective Services; and in Denver where it functions as a division of the Public Safety Department.

deciding to fully integrate emergency dispatch services. The primary going-forward objective should be a desire to enhance the effective management of a public safety response to (and recovery from) an emergency.

Further of consideration, is that it may take a number of years to establish a fully integrated dispatch system and it also may take a number of years to attain the full cost savings. Also, the amount of money to be saved will depend on a number of factors including management's capability to effectively operate the centre, and the choice of service level. As was indicated by several public safety communications agencies including Calgary, Portland and Fairfax, their choice of service level for the entire fully-integrated operation, is based on the most stringent of the standards used previously by the individual dispatch operations. These decisions were taken with a clear going-forward understanding that resourcing would need to be increased beyond initial expectations and consequently, the potential to save costs through integration would be lessened.

In this context, the reader is reminded that Greater Sudbury's proposal to assume operational responsibility for EMS dispatch is consistent with ambulance dispatch arrangements instituted in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, and for such services the Ministry pays 100 percent of the costs. The proposal assumes that a similar arrangement will apply to Greater Sudbury, whereby MOHLTC will continue to pay 100 percent of both the capital and operating costs of Greater Sudbury ambulance communications.

Integrity of Provincial Ambulance Communications

All ambulance services operating in the province of Ontario must adhere to the legislative requirements set out under the Ontario Ambulance Act, and to related policy and standards established by the Ontario MOHLTC, including as a fundamental principle, that ambulance services shall be seamless across political, jurisdictional or other artificial boundaries. Greater Sudbury, in its ongoing delivery of EMS services, is already committed to such provisions and in this respect, the City's proposal to assume operational responsibility for EMS dispatch reaffirms a commitment that has already been given.

Within the Ontario system for ambulance communications, all of the centres are interoperable in the sense that they operate with a common radio system and their CAD's are horizontally integrated with one-another, therefore capable of inter-CAD communications and information sharing. Should the communications services of any one centre be disrupted, then an alternate communications centre within the provincial system can seamlessly assume the requisite communications functions for the duration of the disruption. This capability extends to all Ontario ambulance communications centres, including Sudbury CACC. By way of its proposal to assume operational responsibility for EMS dispatch, Greater Sudbury is signifying its commitment that the ambulance communications service will remain a seamless component in the provincial system and in this respect, choice and use of technology will be carefully vetted for compliance capability.

Sudbury CACC directs the movement of ambulances and ambulance supports for a geographic area that includes the City of Greater Sudbury, and Manitoulin and Sudbury Districts, including Manitoulin Island and the French River area south of Sudbury. By way of its proposal to assume operational responsibility for EMS dispatch, Greater Sudbury is signifying a willingness to continue to manage ambulance communications services throughout this entire geographic area, with the understanding that the Ministry will pay 100 percent of the costs. In this, Greater Sudbury's approach is consistent with ambulance dispatch arrangements elsewhere, including eastern Ontario where the City of Ottawa manages an ambulance communications centre that

During this interim stage, delivery of the ambulance communications function would continue temporarily from the present location at the McFarlane Lake Government Complex, GSPS would continue to manage 9-1-1 and police-fire dispatch from its communications centre at police headquarters, and both communications operations would report to City Council by way of a newly established Executive Management Committee.

A phased work plan by which one might implement the proposed staging and other changes is presented in Section 10 of this report.

Recommendations

In consideration of the study findings, we offer the following recommendations.

1. City staff should prepare a brief report based on the findings of this Business Case analysis, recommending the following:

    a) Full integration of EMS dispatch with the City's dispatch for 9-1-1, police and fire as the preferred emergency communications services system model.

    b) The City's assumption of ambulance dispatch responsibility as an initial step toward full integration of 9-1-1 and police, fire and EMS dispatch. This to be contingent on the MOHLTC agreeing to continue to pay 100 percent of the costs of ambulance communications.

    c) In concert with (b) above the City to commit that ambulance communications services will remain a seamless component of the provincial system. This to be accompanied by an expression of willingness to manage ambulance communications throughout the entire geographic area currently served by Sudbury CACC.

    d) The governance arrangement shown in Exhibit E.1 as the preferred (ultimate) governance arrangement for Greater Sudbury's fully integrated emergency communications services system.

    e) Transitioning forward in a manner that generally aligns to the staging plan shown in Exhibit E.2 and the phased work plan described in Section 10 of this report.

2. The staff report should be submitted to City Council along with the following requests:

    a) That City Council approve the recommendations set out in (1) above.

    b) That an Executive Management Committee consisting of the following executives be authorized to give effect to the emergency communications systems integration: Chief Administrative Officer (serving as Chair), Chief of Police, and the Chief of Fire and Paramedic Services.

    c) That the Committee be directed to engage MOHLTC in discussions that are intended to secure provincial agreement to a transfer of ambulance dispatch responsibility to Greater Sudbury. This to be contingent on the MOHLTC agreeing to continue to pay 100 percent of the costs of ambulance communications.

    d) That the Committee be directed to consult on these matters with affected stakeholders and with other EMS services situated in the geographic area currently served by Sudbury CACC.

1 Study Objective

On May 15, 2012 the City of Greater Sudbury issued a Request-for-Proposals/FES12-5 to retain the services of a professional consultant to investigate the feasibility to achieve a fully integrated emergency communications services system.

The study objective and scope were defined by a work statement contained in the Request-for-Proposals document. As set out therein, the study objective is to:

"Investigate the feasibility to integrate Emergency Medical Services dispatch *[a service managed by the Ontario Ministry of Health and Long Term Care]* with the City's current dispatch system for 9-1-1, Police and Fire, to achieve a fully integrated Emergency Communications Services system for Greater Sudbury", and to develop a Business Case for City Council's consideration and submission to the Ontario Ministry of Health and Long Term Care.

The scope elements defined by the study work statement are listed below.

- Review / assess models for integrated emergency dispatch that have been implemented by other North American jurisdictions, including: potential benefits and advantages (relative to the City's current system), lessons learned and unique opportunities afforded by the respective models, key success factors, implementation challenges, means used to manage risk, and cost.

- Examine governance options for administration and oversight by a single management structure, and operational integration under a common operating platform, including single computer aided dispatch (CAD), radio, telephone and recording systems.

- Develop a 'phased' implementation plan inclusive of capital and operating costs, to fully integrate the City's emergency communications services systems. Phase 1 of the implementation plan may be the City's assumption of operational governance for EMS dispatch services.

- Develop a Business Case for City Council's consideration and submission to the Ontario Ministry of Health and Long Term Care.

IBI Group's participation in this study is the direct result of a competitive procurement process. Our proposal was submitted on June 6, 2012 and we received formal award and approval to proceed with the investigation on September 4, 2012.

The study was carried out under the direction of a Working Group consisting of the Chief of Fire and Paramedic Services and the Director of Corporate Services of the Greater Sudbury Police Services, supported by their respective staffs.

This Business Case report contains the findings and recommendations arising from our investigation.

2 Background

The City of Greater Sudbury is mandated by provincial legislation to provide residents, local businesses and visitors with police, fire and EMS emergency and protective services.[1]

Emergency communications plays a significant role within this continuum of public safety services. As the 'first' of the first responders, emergency communications personnel serve as the critical link between callers and the emergency help they require. Providing continuous coverage by way of telephone, radio and computer aided dispatch (CAD) systems, emergency communications personnel evaluate incoming 9-1-1 calls and they dispatch emergency responder resources as required (police, fire and EMS).

The critical services provided by emergency communications personnel are listed below. Depending on how the emergency communications system is designed, the services may be provided on an integrated basis from one call centre or they may be coordinated through two or more centres managed by individual emergency service resources:

- *9-1-1*: Emergency communicator will swiftly answer the 9-1-1 call and determine the service required (police, fire or EMS). Depending on how the emergency communications system is designed, the emergency communicator will either proceed to screen and dispatch the call, or they will route the call to the appropriate emergency service resource.

- *Caller screening*: Emergency communicator will rapidly perform caller screening to determine the location and urgency of the incident (emergency or non-emergency), and to affirm an appropriate emergency service resource response. Emergency communicator will also stay on the line to provide the caller with responder pre-arrival assistance.

- *Dispatch*: Emergency communicator will dispatch one or more resources to the site of the incident. By way of radio they also will provide front-line responders with communications support, monitoring front-line responder activity, responding as requested with additional information, dispatching additional resource support and when required, executing a coordinated multi-agency response.

As evidenced by the above, in times of crisis it is not only the caller (i.e., the public) that relies on emergency communications for help. Emergency service responders (police, fire and EMS) also rely on emergency communications for expedient call taking and dispatch services that will enable their front-line resources to respond quickly, safely and effectively. In short, the timeliness, speed and quality of the work performed by emergency communications personnel directly impacts the efficiency and effectiveness of the emergency services that the public receives from police, fire and EMS responders.

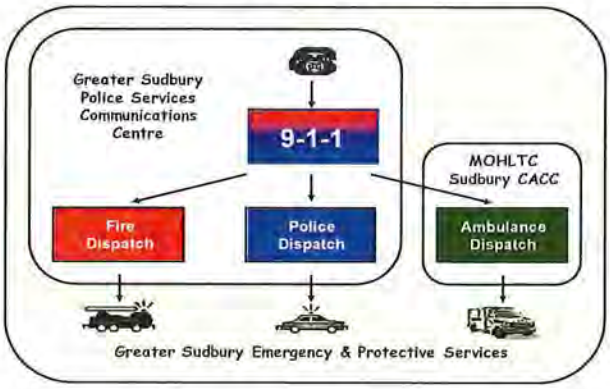
In this respect, Greater Sudbury's proposal to implement a fully integrated emergency communications services system stems from a desire to streamline and improve the quality of the communications services and by extension, improve the efficiency and effectiveness of the emergency services that the public receives from police, fire and EMS responders.

As shown by Exhibit 2.1 (next page), the City's police, fire and EMS responders are currently supported by two separately operated (stand-alone) emergency communications centres. One is the emergency communications centre operated by the Communications Division of the Greater

[1] Ontario Municipal Act, Ontario Ambulance Act, Ontario Fire Protection and Prevention Act, etc.

Sudbury Police Services (GSPS), which is located at police headquarters at 190 Brady Street. The other is the Sudbury Central Ambulance Communications Centre (CACC), located at the McFarlane Lake Government Complex at 3767 Highway 69 South. The CACC is operated by the Emergency Health Services (EHS) Branch of MOHLTC.

Exhibit 2.1: Existing "Partially Consolidated" Dispatch



The GSPS emergency communications centre receives and screens all incoming 9-1-1 calls. GSPS communicators and supervisors are cross-trained to deliver 9-1-1 on an integrated basis with police and fire dispatch. Incoming 9-1-1 calls that require EMS are transferred to the Sudbury CACC. Upon receipt of such a call, the Sudbury CACC will process the information, assign call priority and following established protocols, they will deploy a City ambulance to the site of the incident.

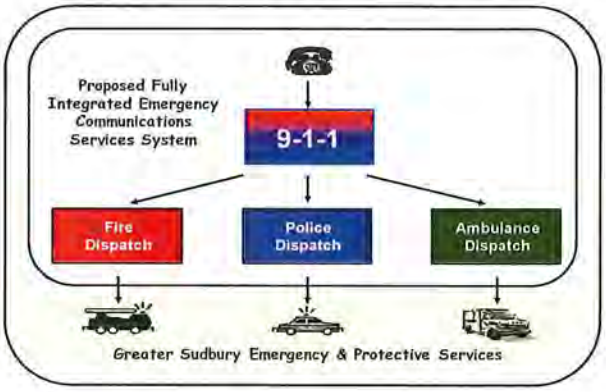
In consideration that in Greater Sudbury there are only the two communications centres and that one of the two delivers multiple dispatch services on an integrated basis, the City's existing dispatch system may appropriately be characterized as a 'partially consolidated' emergency communications model. By way of this study, Greater Sudbury wishes to examine the feasibility of integrating ambulance dispatch with the dispatch services for 9-1-1, police and fire, to achieve a 'fully integrated' emergency communications system, generally as depicted in Exhibit 2.2.

More specifically, the City's intent is to implement a model in which, all emergency communications functions (9-1-1 and police, fire and EMS dispatch) would be delivered on an integrated basis from one municipally governed communications centre.

Notwithstanding the change in ambulance dispatch governance as under the City's proposal, the City's commitment to the Ontario Ambulance Act and to EMS-related policies and standards established by MOHLTC, as demonstrated through the City's ongoing delivery of land ambulance services, will continue undiminished.

Greater Sudbury's proposal to assume responsibility for EMS dispatch is consistent with MOHLTC ambulance dispatch arrangements instituted in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, and for such services the Ministry pays 100 percent of the costs.

Exhibit 2.2: Proposed "Fully Integrated" Dispatch



The proposal assumes that a similar arrangement will apply to Greater Sudbury, whereby MOHLTC will pay 100 percent of the costs of Greater Sudbury ambulance communications.

3 Anticipated Benefits

3.1 Potential to Improve Emergency Communications Services Quality

As discussed in the previous section of this report, emergency communications plays a significant role within the continuum of police, fire and EMS public safety services. As the 'first' of the first responders, emergency communications personnel serve as the critical link between callers and the emergency help they require. Also, police, fire and EMS public safety services rely on emergency communications for expedient call taking and dispatch services that will enable their front-line resources to respond quickly, safely and effectively.

Greater Sudbury's proposal to implement a fully integrated emergency communications services system stems from a desire to streamline and improve the quality of the communications services and by extension, improve the efficiency and effectiveness of the emergency services that the public receives from police, fire and EMS responders.

To this end, we offer the following information and observations derived from our research.

The GSPS communications centre and CACC operate under separate governance authorities, from separate facilities, using different staff resources, different computer aided dispatch (CAD) systems, different radio communications systems, different policies, operating protocols and standards, etc. In this respect, the two communications centres operate in the fashion of stand-alone silos that participate in relatively little inter-agency communications or information sharing.

This according to stakeholders, has occasionally impeded relevant information sharing during an emergency and contributed to inefficient use of emergency responder resources (i.e., deployment of Fire to medical aid calls even when fire service resources are not required). Further, according to stakeholders, it has occasionally delayed the deployment of appropriate emergency responders within a coordinated multi-agency response.

As demonstrated by our research (in Section 6 of this report), changing to a fully integrated emergency communications services system designed to deliver 9-1-1 on an integrated basis with police, fire and EMS dispatch, makes it possible to establish an operating culture, policy and a comprehensive set of SOP's that will promote/support interoperability of communications among emergency services to complement their field interactions during routine day-to-day operations and in the management of large scale incidents requiring a multi-agency response.

A fully integrated model provides increased flexibility to align all aspects of the emergency communications operation to one single-purpose mandate dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality, and capable of expediently executing a coordinated multi-agency response to an emergency. This would include facility design, organizational structure, supervision, administration, technology decisions, staff resourcing, training, risk management, quality management, etc. Capital and operating budgets for the business unit would be similarly aligned to this single-purpose mandate.

Operating in accord with this single-purpose mandate increases the possibility to establish a work environment, business supports and technological systems that are conducive to the expedient delivery of emergency communications and dispatch functions. This would include consolidation to a single communications centre of appropriate size, design and layout; and

preferably, shared use of one state-of-the-art CAD system, as well as one set of systems for telephone and radio communications.

From a service quality improvement perspective, the benefits afforded by a fully integrated dispatch system are listed below. These benefits potentially apply to all of the participating emergency services. The benefits are discussed at greater length in our survey of North American dispatch models presented in Section 6 of this report.

- Potential to streamline the dispatch functions and improve service response times
- Potential to improve interoperability of communications
- Potential to improve inter-agency coordination of deployment and field operations
- Potential to enhance information sharing and responder safety
- Potential to save costs by sharing the same secure communications facility, CAD and radio communications systems, and communications staff resources.

3.2 Potential to Enhance Municipal Accountability for EMS

Numerous Ontario municipalities, including Greater Sudbury, share a common concern over ambulance dispatch. Specifically, the issue is that of a 3rd party ambulance communications centre (a non-municipal entity) having authority to deploy the municipality's EMS resources and the consequential affects of such decisions on the municipality's capabilities to sustain rapid EMS response time performance, and to operate the EMS services effectively, within approved operating budget.

For Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, such concerns have been largely alleviated.

Greater Sudbury's proposal to assume operational responsibility for EMS dispatch is consistent with ambulance dispatch arrangements in the above named municipalities and in this respect, it should alleviate such concerns as they apply to Greater Sudbury.

A related issue is the timeliness and quality of the ambulance call data records that a municipality receives from the province. The province by way of the CACC's CAD system controls the ambulance call data generated by municipally-operated EMS services. Municipalities require timely access to accurate call data records for resource and productivity monitoring, and for response planning.

In this, multiple Ontario municipalities (including Greater Sudbury) have reported a history of delays in data transfers and a corresponding history of discrepancies in the province's response time reporting. In contrast to the Ontario situation, in other jurisdictions where the EMS service manages their own call data records, fewer issues are reported and they are expediently addressed when they arise. In our view, Greater Sudbury's proposal to assume operational responsibility for EMS dispatch should also alleviate this issue.

3.3 Appropriateness of Timing

Some have suggested that consideration of a proposal to implement a fully integrated emergency communications services system could be deferred to a later date. In response to this suggestion, we offer the following as principal reasons why the City and the Ontario MOHLTC should consider such a proposal at this time.

The proposed fully integrated emergency communications services model will augment a parallel initiative that has been endorsed by City Council and which is currently underway, in which Fire and EMS (the two principal divisions of the City's Emergency Services department) are being transformed into an integrated emergency services delivery model. The intent of this parallel initiative is to capitalize on goals in common to both Fire and EMS, and to a sharing of resources, and it is consistent with approaches taken by other North American jurisdictions to improve efficiency and cost-effectiveness of the services.

Moving forward with the two initiatives in parallel (i.e., a fully integrated dispatch system and an integrated Fire-EMS service) will enable Greater Sudbury to cost-effectively develop and expand its emergency services over time to meet the City's evolving needs.

The timing of the proposal aligns closely with, and would potentially benefit, parallel investments by GSPS to enhance the police emergency communications centre operations. Those investments, which are being undertaken in consultation with the City's Emergency Services department, include: restructuring of the joint (police and fire) governance and oversight arrangements, transition to an upgraded Harris radio communications system with better coverage capabilities for both Police and Fire, realignment of workspace and consoles within the communications centre to enhance efficacy of operations, construction of an emergency backup communications facility at the City's Lionel E Lalonde Emergency and Protective Services Centre, and proposed implementation of a pro-active program for managing risks, and the quality and performance of the communications centre operation.

In matters pertaining to ambulance dispatch governance and structure, the Ontario MOHLTC's long-standing position has been as follows: that there will be no consideration for a change until the Niagara Ambulance Communication Service (NACS) pilot project evaluation is complete and a provincial policy based on the evaluation is implemented. The intent of the NACS pilot project is to provide the Ministry with insight regarding the impact of an integrated (with EMS) locally-run ambulance communications centre on the quality of pre-hospital emergency services; also, the impact of innovative processes and technologies on service efficiency.

NACS commenced operation as a five-year pilot project on June 1, 2005. Prior to its conclusion on May 31, 2010 the MOHLTC commissioned a comprehensive third-party evaluation. That evaluation, which is concluded and in the public domain, affirms that the quality of the Niagara EMS service has benefitted from integration especially in resource management, and integrated policies and procedures, and from such tools as: *MARVLIS*, an innovative deployment system that adjusts dynamically in response to changes in service demand; *Headstart*, an innovative pre-alert functionality that improves response time; *CADPortal*, an electronic notification system that enhances collaborative working between services; and *AMPDS*, a call triage system with built-in quality assurance capability that has been adopted as a standard by numerous EMS services world-wide.

On the strength of the third-party evaluation, NACS has been contracted by the Ontario MOHLTC to continue to manage the EMS dispatch function in Niagara Region and the Ministry continues to pay 100 percent of the costs.

In consideration of these factors and the insights gained from the NACS pilot project, it is reasonable to assume that the MOHLTC is considering options regarding future ambulance communications services in Ontario, and that those options may include new and potentially flexible governance and structures, such as those contained in Greater Sudbury proposal to implement a fully integrated emergency communications services system. To this end, the submission of a proposal at this time is considered timely and appropriate.

3.4 Potentially a Beneficial Application to EMS Delivery In Ontario

In addition to Greater Sudbury, there are a number of other Ontario jurisdictions that would like to assume governance and operational responsibility for ambulance communications. They include the Regions of Peel, Durham, York and Halton, County of Simcoe, Middlesex County and several neighbouring counties in southwest Ontario.

Peel, Durham, York, Halton and Simcoe collaborated on a 2009 study that recommended the establishment of a 'single GTA dispatch centre' as the preferred model for land ambulance communications in the 905 regions of the GTA. Middlesex and neighbouring counties are proposing a shared governance model for land ambulance communications across their combined geographic area to replace the London CACC.

Given the interest presently being expressed by these and other Ontario jurisdictions, and the recent conclusion of the NACS pilot project evaluation, the MOHLTC may currently be interested in identifying an ambulance communications model that could serve as a preferred Ontario model pilot. For the reasons set out below, it is our opinion that Greater Sudbury is in a unique position to serve as such a pilot.

Relative to geographic areas with multiple jurisdictions and multiple EMS services (as per the two examples noted above), it would be easier to establish a preferred model pilot in Greater Sudbury where there is a one-to-one relationship between ambulance communications, the municipality and an EMS service that accounts for 70% of the CACC workload. Historically at least, this has proven to be the case e.g., in Toronto, Ottawa and Niagara Region; these (and Timmins) being the only municipally operated ambulance dispatch centres in Ontario.

Unlike the two-tier regional municipalities and counties listed above, Greater Sudbury is a single-tier municipality having accountability for the full spectrum of emergency services, including Police, Fire, EMS and emergency management. Therefore, if there is an interest in demonstrating the potential benefits associated with a fully integrated emergency communications services system, then Greater Sudbury would well serve this purpose.

In our opinion, Greater Sudbury's transition to a fully integrated emergency dispatch system should not be an overly difficult process given the City's prior experience operating an EMS service, its prior experience operating a consolidated police and fire dispatch, and its reputation for constructive, consultative and cooperative employee relations.

In population, Greater Sudbury is neither a small nor an overly large municipality. With a population of about 160,000 residents, an area of about 3,500 sq km and a geography that includes urban and suburban development areas, as well as rural and remote communities, it is our opinion that Greater Sudbury is of a size, scale and complexity that would well serve as a preferred model pilot.

Based on the above considerations, it is our opinion that Greater Sudbury's proposed initiative affords an opportunity to garner considerable insights that potentially would have beneficial application to EMS services and EMS dispatch delivery across Ontario.

3.5 Full Integration Aligns to Systems Implemented by Other Jurisdictions

Our research affirms that Greater Sudbury's proposal to integrate EMS dispatch with the City's current dispatch system for 9-1-1, Police and Fire is consistent with approaches that other North American jurisdictions have taken principally to enhance the effective management of a public

safety response to (and recovery from) an emergency; also, to improve emergency dispatch services efficiency and cost-effectiveness.

Calgary, Denver, Portland and Fairfax are examples of jurisdictions that have implemented fully integrated emergency communications services systems. In these and other like minded jurisdictions, public safety services (police, fire and EMS) have collectively acknowledged that it is only through collaboration will they be able to attain and sustain emergency communications service enhancements of mutual benefit to their respective organizations.

IBI Group is advised that in some states, 9-1-1 tax dollars are withheld from the emergency dispatch authority until they can demonstrate steps toward integration of the communications services.

3.6 Proposal is Consistent with Other Ontario Ambulance Dispatch Arrangements

The EHS Branch of the Ontario MOHLTC is responsible for all aspects of ambulance communications in Ontario. EHS discharges this responsibility by way of a province-wide network of ambulance communications centres that deploy, coordinate and direct the movement of ambulances and ambulance supports within defined geographic areas.

Exhibit 3.1: Non-Ministry EMS Dispatch

About one-half of the centres, including those based in Greater Sudbury and Thunder Bay are operated directly by EHS. Several, including those based in Sault Ste Marie and North Bay, are managed by hospitals; one is privately contracted; and four (in Toronto, Ottawa, Niagara and Timmins) are municipally operated.

Hospital and municipally managed ambulance communications centres operate under contract to EHS, and in these arrangements MOHLTC pays 100 percent of the costs. That relationship is shown in Exhibit 3.1.

Greater Sudbury's proposal to assume EMS dispatch responsibility is consistent with these non-Ministry ambulance dispatch arrangements, and in particular the arrangements instituted in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, and for such services the Ministry pays 100 percent of the costs. The City's proposal assumes that a similar arrangement will apply to Greater Sudbury, whereby MOHLTC will continue to pay 100 percent of both the capital and operating costs of ambulance communications.

3.7 Preserves Integrity of the Provincial Ambulance Communications System

All ambulance services operating in the province of Ontario must adhere to the legislative requirements set out under the Ontario Ambulance Act, and to related policy and standards established by the Ontario MOHLTC, including as a fundamental principle, that ambulance services shall be seamless across political, jurisdictional or other artificial boundaries. Greater Sudbury, in its ongoing delivery of EMS services, is already committed to such provisions and in

this respect, the City's proposal to assume operational responsibility for EMS dispatch reaffirms a commitment that has already been given.

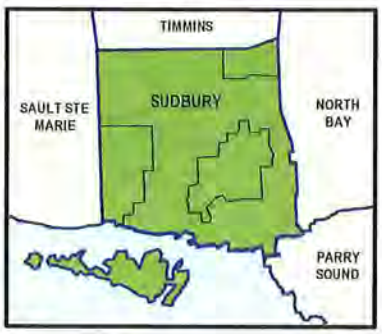
Within the Ontario system for ambulance communications, all of the centres are interoperable in the sense that they operate with a common radio system (i.e., the province's FleetNet VHF trunked radio system) and their CAD's are horizontally integrated with one-another, therefore capable of inter-CAD communications and information sharing.

In this provincial network of communications centres, should the communications services of any one centre be disrupted, then an alternate communications centre within the provincial system can seamlessly assume the requisite communications functions for the duration of the disruption. This capability extends not only to ambulance communications centres operated by MOHLTC but also to ambulance communications centres that operate on the Ministry's behalf by third parties including hospitals and municipalities.

This capability also extends to Sudbury CACC. Should the communications services of the Sudbury CACC be disrupted for an extended period, then as an interim measure an alternate ambulance communications centre (at North Bay, Thunder Bay, etc) can seamlessly assume the requisite communications functions for the duration of the disruption.

By way of its proposal to assume operational responsibility for EMS dispatch, Greater Sudbury is signifying its commitment that the ambulance communications service will remain a seamless component in the provincial system and in this respect, choice and use of technology will be carefully vetted for compliance capability.

Sudbury CACC and Surrounding ACS Areas



Sudbury CACC directs the movement of ambulances and ambulance supports for a geographic area that includes the City of Greater Sudbury, and Manitoulin and Sudbury Districts, including Manitoulin Island and the French River area south of Sudbury. By way of its proposal to assume operational responsibility for EMS dispatch, Greater Sudbury is signifying a willingness to continue to manage ambulance communications throughout this entire geographic area, with the understanding that the Ministry will pay 100 percent of the costs.

In this, Greater Sudbury's approach is consistent with ambulance dispatch arrangements elsewhere, including eastern Ontario where the City of Ottawa manages an ambulance communications centre that delivers EMS dispatch for the City of Ottawa as well as the County of Stormont, Dundas and Glengarry; the United Counties of Prescott and Russell; and for the City of Cornwall.

Greater Sudbury EMS responds to about 25,000 calls a year, including both emergency and non-emergency calls (priority codes 1 to 4). The fact that this volume accounts for about 70 percent of the Sudbury CACC's total workload lends further support to this proposal to fully integrate EMS dispatch with the City's dispatch services for police and fire.

3.8 Value Added Considerations

IBI Group's research on behalf of GSPS and the City's Emergency Services Department reveals that the existing GSPS emergency communications centre is staffed throughout, with experienced and talented personnel who are dedicated to the delivery of quality emergency communications services. This finding applies to all levels of the GSPS communications centre

organizational structure including communicators, supervisors, management and executive oversight. The centre's organizational structure is discussed further in Section 4 of this report.

Supporting the operation of the emergency communications centre is the City's full range of corporate support services, which include HR and IT systems support. These corporate services divisions also are staffed by impressive teams of highly experienced personnel. Other City-based strengths include a strong reputation for constructive, consultative and cooperative employee relations, and a team of personnel highly experienced in ambulance service delivery.

Greater Sudbury is fully dedicated to a successful integration of EMS dispatch with 9-1-1 and police-fire dispatch. To this end, and to ensure the project's success, the City is prepared to commit an experienced team of professionals drawing relevant talents and expertise from the management of the existing GSPS emergency communications centre and from the City's corporate services divisions as required.

While the proposal to integrate EMS dispatch with the City's dispatch system for 9-1-1, police and fire is of City origins, Greater Sudbury proposes to collaborate actively with MOHLTC to ensure the project's success. In this, Greater Sudbury is committed to full transparency of both the transition process and the subsequent delivery of the ambulance communications function.

The proposal reflects Greater Sudbury's reputation as a municipality that is committed to innovations that better utilize people, processes and systems to deliver improved services and to ensure that the services delivery is financially sustainable over time. This reputation was established through numerous previous initiatives, which include assumption of responsibility for land ambulance services (a decade ago), a parallel initiative currently underway to transform Fire and EMS into an integrated emergency services delivery model, and parallel investments in the police emergency communications centre operations.

In this, the City of Greater Sudbury and the Ontario MOHLTC share a common agenda. They both are interested in opportunities by which to provide better, faster, safer and more economical services. This proposal by the City will provide a excellent venue to investigate the use and optimization of systems and technology in a geographically challenging environment.

4 Existing 'Partially Consolidated' Dispatch System

The existing emergency dispatch system in Greater Sudbury consists of two separately operated (stand-alone) emergency communications centres. One centre, which is operated by the Communications Division of GSPS, answers 9-1-1 calls, and dispatches police and fire. The other, the Sudbury CACC operated by the EHS Branch of the Ontario MOHLTC, processes and deploys City ambulances to calls that require EMS.

In consideration that in Greater Sudbury there are only the two communications centres and that one of the two delivers multiple dispatch services on an integrated basis, the City's existing dispatch system may appropriately be characterized as a "partially consolidated" emergency communications model.

4.1 GSPS Emergency Communications Centre

Located at GSPS headquarters at 190 Brady Street, the police emergency communications centre is staffed with communicators and supervisors who are cross-trained to carry out the 9-1-1 function on an integrated basis with police and fire dispatch.

The GSPS communications centre is overseen by a Staff Sergeant under the direct command of the Officer in Charge of Organizational Support who in turn reports to the Director of Corporate Services. The centre is staffed with 28 full-time and 8 part-time communicators, plus 4 full-time Supervisors, all of whom are civilian employees represented by the Sudbury Police Association Civilian Bargaining Unit.

Operating continuously, 24 hours each day with a minimum on-duty complement of seven personnel per shift (2 call takers, 2 police dispatch, 2 fire dispatch and 1 supervisor), the GSPS emergency communications centre handles over 56,000 incoming 9-1-1 emergency calls a year, of which 58% are for police services, 31% for EMS and about 7% for fire.

The communications centre is equipped with a state-of-the-art CAD system manufactured by Intergraph, a Harris 800 MHz trunk radio and a Zetron paging system. Police use a Niche records management system (RMS). Fire, which manages its own records, is in the process of purchasing an RMS system. Police vehicles are equipped with GPS/AVL. A similar add-on is being considered by Fire.

The annual cost to operate the GSPS communications centre is about $3.5 million a year. The Fire department contribution to the cost is about $150,000 a year.

To minimize the potential for a disruption of communications services, the GSPS emergency communications centre is equipped with built-in backup systems including auxiliary power. GSPS also maintains an emergency backup facility at the City's Lionel E Lalonde Emergency and Protective Services Centre. Continuity and evacuation procedures are tested periodically.

This arrangement, in which GSPS dispatches both police and fire, is described by police and fire as a 'partnership' model. In this partnership, the agencies work collaboratively to ensure the quality of the services delivered by the centre. This is facilitated by an executive committee consisting of the Chiefs of Police and Fire, supported by their respective designates who meet periodically to address issues in common.

Presented below are our observations with respect to the GSPS communications operation. They are based in part on available data and documentation specific to the GSPS communications operation, and in part on the findings of an emergency dispatch best practices survey that we recently carried out on behalf of the City of Greater Sudbury. That survey included several visits to the GSPS communications centre, on-site observations of the operations and consultations with the personnel in charge.

Our Observations

A consolidated dispatch for police and fire has been in place for over 15 years. The arrangement was re-visited during a municipal amalgamation of the former City and the outlying municipalities (circa 2000/01) and the service area was expanded at that time to accommodate the needs of a newly amalgamated fire service for the greater city.

The original objectives for consolidating police and fire dispatch are not immediately known; however, it would appear that a principal objective was to contain the cost of emergency dispatch services. Drawing from emergency dispatch best practices surveys that we have recently completed, we conclude that the cost to deliver police and fire dispatch services in Greater Sudbury is comparable to that of multiple other jurisdictions, and therefore in our opinion, this objective (to contain the cost) has been attained.

While cost containment may have been the principal objective for consolidating police and fire dispatch, the quality of the services have benefited greatly. Listed below are some of the significant benefits / advantages that have been attained:

- Secure communications facility, CAD and radio communications systems managed by police on behalf of both agencies
- Improved downstreaming of 9-1-1 calls and associated response times attributed to co-location and proximity of 9-1-1, police and fire communicator work stations
- Shared CAD and radio communications systems have contributed to interoperability of communications between the two agencies, and streamlining of dispatch functions between the two agencies (e.g., push to talk features, common emergency activation, etc)
- Shared systems have contributed to improved inter-agency coordination of field operations, and deployment of police and fire responder resources only when required. They also have enhanced information sharing between the two agencies, which has improved police and fire responder safety
- The Centre is staffed with communicators who are fully cross-trained to carry out the 9-1-1 function on an integrated basis with police and fire dispatch. Cross-training in police and fire dispatch has increased efficiency of operations and flexibility to manage workload, including short notice increases in emergency communications workload due to unplanned events.

Our research confirms that the GSPS communications centre is staffed with experienced and talented personnel who are dedicated to the delivery of quality emergency communications services. Also, that the Centre is supported by the City's full range of corporate support services, which include personnel who are well experienced in HR and IT systems support.

While GSPS is mandated to make all decisions concerning the staffing and outfitting of the centre, major decisions are generally made in consultation / partnership with fire (e.g., decisions regarding capital investments, major modifications to systems, etc).

Fully integrating EMS dispatch with the dispatch services for police and fire, as currently proposed, should not be difficult given the following: Sudbury's experience operating a consolidated police-fire dispatch; Sudbury's reputation for constructive, consultative and cooperative employee relations; and Sudbury EMS' team of personnel who are highly experienced in ambulance service delivery.

As will be demonstrated by the research presented in Sections 5 and 6 of this report, all three services (police, fire and EMS) would benefit significantly by this proposal. The benefits would include: enhanced information sharing and streamlining of dispatching functions for all 3 agencies; improved interoperability and coordination of field operations for all three; rapid deployment of the appropriate emergency resources of all 3 agencies; increased opportunity to jointly address issues that are common to all three; and additional cost savings by sharing the same facility, security, CAD-COM systems and staff resources.

4.2 Sudbury Central Ambulance Communications Centre (CACC)

Sudbury CACC, based at the McFarlane Lake Government Complex at 3767 Highway 69 South, is one of 22 ambulance communications centres established by the EHS Branch of the Ontario MOHLTC. Sudbury CACC deploys, coordinates and directs the movement of ambulances and ambulance supports for a geographic area that includes the City of Greater Sudbury, and Manitoulin and Sudbury Districts, including Manitoulin Island and the French River area south of Sudbury.

The CACC's responsibilities include: answer and process incoming requests for ambulance service; prioritize the urgency of calls; dispatch ambulances to calls, including patient transfers between health care facilities; provide callers with pre-arrival first aid instruction; and coordinate communications between ambulance and hospital during patient transport.

Sudbury CACC manages about 47,000 calls a year. This includes about 33,000 emergency and non-emergency calls (priority codes 1 to 4) and 14,000 standby calls (priority 8). Greater Sudbury's EMS service responds to about 25,000 emergency and non-emergency calls a year (priority codes 1 to 4); accounting for about 70 percent of the Sudbury CACC's total workload.

The staffing complement at Sudbury CACC totals 32 persons. This includes: a CACC Manager; an Operations Manager; 4 supervisors; 16 full-time dispatchers; 7 on-call dispatchers; and 3 ancillary supports including a Quality Programs Officer, a Liaison and Policy Officer and an administrative support. CACC staff are represented by the Ontario Public Service Employees Union (OPSEU).

The centre operates continuously, 24 hours each day with a minimum on-duty complement of 3 dispatchers and one supervisor per shift, and about 5 dispatchers during peak periods.

The Sudbury CACC is equipped with a state-of-the-art CAD system manufactured by TriTech, a call triage system developed by the Ontario MOHLTC known as Dispatch Priority Card Index Version 2.0 (DPCI-2), and a provincially implemented FleetNet VHF trunked radio system. CAD add-on's include AVL/GPS to help identify and assign available and appropriate ambulance resources. Records management support is provided by the MOHLTC data records warehouse.

The annual cost to operate the Sudbury CACC is about $3 million a year.

To minimize the potential for disruption of communications services, the Sudbury CACC is equipped with built-in backup systems including auxiliary power. Regardless, should the CACC be required to temporarily evacuate the premises then by way of an existing agreement with GSPS, the CACC may operate temporarily from the police emergency communications centre. CACC continuity protocols and evacuation procedures are tested periodically.

Also, since all Ontario ambulance communications centres operate with a common radio system and CAD's that are interoperable with one-another, an alternate backup solution involves having another ambulance communications centre (i.e., North Bay, Thunder Bay, etc) temporarily assume the requisite communications functions for the duration of the disruption.

5 Alternative Dispatch Model Structures

Alternative models for integrated emergency dispatch are shown in Exhibit 5.1. They range from facility co-location, to partial consolidation (as per Greater Sudbury), to full/complete integration.

The principal attributes of each model are summarized in Exhibit 5.2 (next page) and they are described in more detail on subsequent pages. The information is derived from our previous research which includes on-site visits to emergency communications centres structured on the basis of these alternative models, and consultations with the executives in charge.

Exhibit 5.1: Alternative Dispatch Model Structures

		SYSTEMS		
		Dispatch Services Operate with Separate Systems	Systems are Shared by Multiple Dispatch Services	Systems are Shared by All Dispatch Services (Police, Fire and EMS)
FACILITIES / GOVERNANCE	Dispatch Services Operate Individually from Stand Alone Facilities		Ottawa, ON: Police and Fire dispatch York Region, ON: Regional Police, and Richmond Hill & Vaughan Fire dispatch	
	Multiple Services are Co-located in One Building / Continue to Operate Individually	Toronto, ON: Fire and EMS dispatch Peel Region, ON: Regional Police and the joint Fire dispatch for Mississauga, Brampton & Caledon		
	Multiple Services are Co-located in One Communications Centre / Operations are Consolidated to One Governance Structure		Greater Sudbury, ON: Police and Fire dispatch Halifax, NS: Police and Fire dispatch Vancouver, BC: Police and Fire dispatch Winnipeg, MB: Fire and EMS dispatch	
	All Dispatch Services (Police, Fire and EMS) are Co-located in One Communications Centre / Operations are Consolidated to One Governance Structure			Calgary, AB: Public Safety Communications Denver, CO: Denver 911 Portland, OR: Bureau of Emergency Communications Fairfax County, VA: Public Safety Communications

Facility Co-Location	Partial Consolidation	Full (Complete) Integration

5.1 Facility Co-location

Facility co-location is a configuration that is driven principally by a collective desire among individual agencies to contain the cost of their respective dispatch services by physically co-locating the services in one building and in some cases, by co-locating the services in a common space within the building (i.e., a single communications centre). In this configuration the cost savings are attained by having the co-located agencies collectively share the costs to build and maintain the facility, and the infrastructure in support of emergency communications (e.g., 9-1-1 telephone lines, radio towers, etc).

In this regard, an additional consideration is the Ontario Building Code (OBC) requirement that emergency communications facilities be constructed to 'post disaster' standards (i.e., to standards that are more stringent than those applied to conventional facilities vis-à-vis such items as wind load, snow load, earthquake load, etc). By consolidating the operations of multiple communications services in a single building, participating agencies may achieve the requisite OBC standards at a cost that is less than the total price of building multiple separate communications facilities (each one to OBC standards).

Exhibit 5.2: Principal Attributes of Alternative Dispatch Model Structures

	Facility Co-Location	Full Integration	Partial Consolidation
Examples of Alternative Dispatch Model Structures	- Toronto, Ontario: Fire and EMS dispatch - Peel Region, Ontario: Regional Police and the joint Fire dispatch for Mississauga, Brampton & Caledon	- Calgary, Alberta: Public Safety Communications - Denver, Colorado: Denver 911 - Portland, Oregon: Bureau of Emergency Communications - Fairfax County, Virginia: Public Safety Communications	- Ottawa, Ontario: Police and Fire dispatch - York Region, Ontario: Regional Police, and Richmond Hill and Vaughan Fire dispatch - Greater Sudbury, Ontario: Police and Fire dispatch - Halifax, Nova Scotia: Police and Fire dispatch - Vancouver, British Columbia: Police and Fire dispatch - Winnipeg Manitoba: Fire and EMS dispatch
Facility Arrangement	Agencies co-locate their dispatch services in one building or in a common space within a building (a single communications centre). The co-located services share supporting communications infrastructure (e.g., 9-1-1 lines and radio towers).	All dispatch services (Police, Fire and EMS) are co-located in a single communications centre. The co-located services share supporting communications infrastructure (e.g., 9-1-1 lines and radio towers).	Partial consolidation refers to a sharing of CAD-COM systems by multiple dispatch services. The services may operate individually from stand alone facilities (as is the case in Ottawa and York Region where each dispatch service accesses the CAD system remotely from their own facility). Alternatively, the services may be co-located in one communications centre (as is the case in Halifax, Vancouver, Winnipeg and Sudbury).
Governance	The dispatch services operate under individual (autonomous) governance structures and mandates.	Services are consolidated into a single 'public safety communications' operation (one employer), which operates under a single governance structure and mandate.	Governance may vary from separate dispatch service operations (as in Ottawa and York Region) to operating under a consolidated governance structure (as in Halifax, Vancouver, Winnipeg and Greater Sudbury).
Service Area	Coverage areas for individual services are defined by the jurisdictional authority of their respective agencies and may vary from one another.	There is generally only one service area and it is defined by the collective jurisdictional authorities of the participating agencies; albeit the centre may be contracted for communications services by one or more other jurisdictions.	Coverage may vary from separate agency service areas as in York Region, to one service area as in Halifax and Sudbury, to one enlarged service area as in Vancouver, where the centre is contracted for services by adjacent jurisdictions.
Staffing	Individual communications services employ their own staffs. The staffs are uniquely trained to support their respective agency responder needs. Bargaining agents may vary by service.	Staff generally are employed by the consolidated service (one employer) and are represented by a single bargaining agent. One training program covers the dispatch needs of all participating agencies. Some or all of the communicators are cross-trained to dispatch multiple agencies. Denver is an exception. There, each agency employs their own staff. Bargaining agents vary. Staff are trained to serve the agency's needs. They are not cross trained.	Staff employment, representation and training are tied to governance. In Ottawa and York Region the individual communications services employ and train their own staffs. In Halifax, Vancouver and Greater Sudbury the arrangements mirror those described under Full Integration.
Systems	Individual services operate with their own (separate) CAD and RMS systems. Systems may vary in technological capability and inter-agency interoperability. Individual services may share communications systems (radio, telephone, paging, GPS/AVL, etc), mapping sources for caller ID and incident location, and IT systems supports.	Consolidated services typically operate with one CAD, one communications system (radio, telephone, paging, GPS/AVL, etc) and one mapping source. They generally have in-house IT technical resources and contracts for auxiliary systems support. Participating agencies may operate with separate RMS.	Partial consolidation refers to a sharing of CAD-COM systems by multiple dispatch services, regardless as to whether they are co-located in one communications centre (e.g., Halifax, Vancouver and Greater Sudbury) or they operate from stand alone facilities (e.g., in Ottawa and York Region). In Vancouver, E-Comm is responsible to maintain the CAD-COM systems. Elsewhere, the police departments bear the responsibility.
Operating Procedures, Quality & Risk Management	Individual services have own (separate) operating procedures and programs for quality assurance, risk management, etc that reflect the needs of the respective agency responders.	The consolidated service operates with one comprehensive set of procedures, which includes modules for quality assurance, risk management, etc.	Operating procedures et al are tied to decisions concerning governance. In Ottawa and York Region they are defined by the needs of the individual agencies. In Halifax, Vancouver and Greater Sudbury they are established by the consolidated service in consultation with the participating agencies.
Backup Solutions	Individual services have own (separate) on-site and off site backup solutions. They may occasionally share off site backup.	Consolidated service has own on-site and off site backup solutions.	Backup solutions will be determined by decisions concerning dispatch governance. In Ottawa and York Region they include the agencies' establishment of reciprocal arrangements. . In Halifax, Vancouver and Greater Sudbury the arrangements mirror those described under Full Integration.

Notwithstanding their physical co-location, in this model the agencies will remain separate in their dispatch responsibilities, continuing to operate under their own (autonomous) governance structures and mandates, using their own (individual) CAD / RMS systems, and their own staffs who are uniquely trained to respond and support their respective emergency responder needs. The service areas corresponding to the respective agencies (which are defined by jurisdictional authority) may vary from one another. The individual CAD / RMS systems may vary in technological capability and inter-agency interoperability. The individual services will have their own programs for quality assurance, risk management, etc; and they also will have their own on-site and off site backup solutions.

While not a requirement under this configuration the co-located agencies may occasionally share communications systems (radio, telephone, paging, GPS/AVL, etc), mapping sources for caller ID and incident location, and IT systems supports.

The following are two examples of North American jurisdictions that have implemented a facility co-location emergency dispatch service arrangement. In both instances, the services continue to operate under separate governance structures using their own (individual) CAD and RMS systems, and staffing:

- Toronto, Ontario: Dispatch services for Toronto Fire and Toronto EMS are co-located in one building. Fire dispatch is located on the third floor and EMS dispatch is on the first (ground) floor.

- Peel Region, Ontario: The dispatch services for Peel Regional Police and the Peel Regional Joint Fire Communications Centre (an integrated fire dispatch serving the Mississauga, Brampton and Caledon fire departments) are co-located in one building. The two dispatch centres co-exist in physically separated and secured spaces on the same floor of the building.

Summarized below are the principle advantages of a facility co-location arrangement, derived from our previous research which includes consultations with Toronto, Peel and other jurisdictions that have implemented an arrangement of this type:

- Potential cost savings in facility capital, operations and maintenance
- Potential cost savings by sharing supporting emergency communications infrastructure
- Potential cost savings to attain OBC standards *[an advantage specific to Ontario]*
- Opportunity to improve inter-agency coordination of operations
- Opportunity to identify and jointly address dispatch issues that agencies have in common
- Opportunity to consolidate data sources (e.g., mapping)
- Opportunity to share systems support resources
- Potential cost savings that may be derived by taking advantage of the above opportunities.

Potential advantages notwithstanding, facility co-location does not directly contribute to improved dispatch services. For example, in both Peel and Toronto, while the emergency dispatch services are physically co-located in the same building, there is relatively little interaction between the two operations. Rather, the dispatch services continue to operate as though they were situated in separately located facilities, taking little advantage of the potential opportunities afforded by their co-location arrangement.

According to stakeholders with whom we consulted, the likelihood that facility co-location will improve service quality increases: if the co-location is mandated by an executive level governing authority, if agency leadership promote inter-agency collaboration, or if co-location is augmented by a sharing of some of the systems or systems supports.

5.2 Full (Complete) Integration

Full (complete) integration is a configuration that is driven principally by a strong desire by all emergency and protective services agencies (Police, Fire and EMS) to improve the quality and interoperability of public safety communications services, by consolidating their collective dispatch efforts and services into a single public safety communications operation that is designed to operate in a manner that will respond efficiently and cost-effectively to the emergency dispatch needs of all of the agencies.

The consolidated public safety communications service operates out of a single communications centre, under a single management structure, and mandate that have been defined by the participating agencies. Governance oversight of the public safety communications centre operation is generally provided by way of an executive level Committee or Board consisting of the respective agencies. In some instances the oversight body will also include third party professional expertise (i.e., legal, finance, HR, etc).

In this type of operation there generally is only one service area and it is defined by the collective jurisdictional authorities of the participating agencies; albeit, because the communications centres are known for the quality of their services and systems, they may be contracted on a fee for service basis by jurisdictions other than the member agencies.

The communications centre staff generally are employed by the consolidated service (i.e., there is only the one employer) and they are represented by a single bargaining agent. The service operates with one training program that covers the dispatch needs of all participating agencies, and some or all of the communicators are cross-trained to dispatch multiple agencies. This significantly increases management's flexibility to schedule staffing and it serves as a cost-effective means by which to respond to unplanned variations in communications workload. In this, there are some exceptions e.g., in Denver, where each agency recruits and trains their communications staff in response to the agency's needs, and the staff are not cross trained to dispatch on behalf of others. Similarly, the bargaining agents may vary by agency.

The consolidated service typically operates with one CAD system that is designed to accommodate the requirements of the individual agencies as they pertain to such items as information, security, confidentiality, etc. The service also operates with one communications system (radio, telephone, paging, GPS/AVL, etc) and one mapping source; albeit to satisfy each agencies information needs, they may operate with separate RMS. The service generally has in-house IT technical resources and contracts for auxiliary systems supports. It operates with one comprehensive set of procedures, which includes modules for quality assurance, risk management, etc. It also has its own on-site and off site backup solutions.

Calgary Alberta, Denver Colorado, Portland Oregon and Fairfax County Virginia are examples of North American jurisdictions that have implemented a fully (completely) integrated emergency dispatch service arrangement for their emergency and protective services agencies (Police, Fire and EMS). Listed below are the principle advantages of this dispatch model structure, derived from our previous research, on-site visits and consultations:

- Significant potential to improve the quality and interoperability of public safety communications services
- Potential to improve inter-agency coordination of field operations, including automatic aid, mutual aid, etc
- Potential to improve the efficiency of field operations by deploying agency responders only when and where needed

- Potential to improve information flow across agencies, thus augmenting response time and emergency responder safety
- Potential to improve information sharing via CAD-to-CAD messaging between terminals and electronic information flow between CAD and RMS. Associated benefits include less duplication of data entry and increased reliability of the records information
- Operating within a single organizational structure, with one staffing complement and communicators who are cross-trained to perform dispatch services for multiple agencies, significantly increases management's flexibility to schedule staffing. Also serves as cost-effective means by which to respond to unplanned variations in communications workload
- Increased opportunity to jointly address operations issues that are common to all agencies
- Increased opportunity through collaboration and cost sharing, to secure periodic investment in technology replacement / upgrades
- Potential, by taking advantage of the above opportunities, to attain a dispatch service quality higher than that which the agencies are capable of attaining individually
- Potential cost savings (capital and operations) by consolidating dispatch services in a single emergency communications centre with access to the relevant supporting infrastructure
- Potential cost savings to attain OBC standards *[an advantage specific to Ontario]*
- Potential cost savings by sharing CAD-COM systems, systems technical supports and common data sources (e.g., mapping)
- Potential cost savings that may be derived by taking advantage of the above opportunities.

In consideration of the above, it is important to note that according to agencies that have implemented a full / completely integrated emergency dispatch service arrangement, "the potential to improve the quality and interoperability of public safety communications services" is not only the primary advantage, it is the primary going-forward objective. Whereas, according to these agencies, cost containment is not a going-forward objective but rather a derived benefit over time. These messages were repeated frequently by the agencies with whom we consulted.

Challenges to implement this type of dispatch service arrangement typically include: garnering sufficient political will to move forward with the requisite changes in governance, the relatively high start up costs, and resistance to change by organized labour.

5.3 Partial Consolidation

Partial consolidation refers to a sharing of common CAD and radio communications systems for emergency dispatch by like minded emergency and protective service agencies. However, unlike the full (complete) integration model described above, partial consolidation does not require all of the agencies (Police, Fire and EMS) to participate.

For example, in the partially consolidated dispatch arrangement in Greater Sudbury, the dispatch services for police and fire are integrated into a single communications centre operated by GSPS whereas, the municipally operated EMS service is dispatched separately by an ambulance communications centre operated by the Ontario MOHLTC. A similar situation exists in numerous other jurisdictions across North America, including the Halifax Regional Municipality in Nova Scotia and Vancouver British Columbia. Both of these locations also operate with partially consolidated emergency dispatch systems in which police and fire dispatch operate on an integrated basis, and EMS dispatch is managed by a separate governance authority.

Winnipeg Manitoba provides an alternate example of a partially consolidated emergency dispatch system. In that location, one communications centre operated by the City's Fire Paramedic Service delivers dispatch services on an integrated basis for fire and EMS, while the City's Police department self-dispatches from a separate facility.

The City of Ottawa serves to illustrate another variation of partial consolidation as it applies to emergency dispatch. In that situation, the Ottawa Police department is responsible for maintaining the common CAD and radio communications systems used by the police and fire dispatch services. That aside, the City's police and fire departments operate their dispatch services individually, from separately located stand alone facilities, accessing the common CAD-COM systems remotely through hard wired and mobile devices. The City's EMS department self-dispatches from a separate ambulance communications centre operating under contract to the Ontario MOHLTC.

The arrangement in York Region is similar to that of Ottawa in that it involves police and fire departments managing their own dispatch services from separately located stand alone facilities, accessing common CAD-COM systems remotely through hard wired and mobile devices. The participants in this instance are York Regional Police and the Vaughan and Richmond Hill Fire departments. The police department is responsible for maintaining the common CAD-COM systems. The Region's EMS department is dispatched from a separate ambulance communications centre operated by the EHS Branch of the Ontario MOHLTC.

In concert with the multitude of variations in design (some of which are described above) so also will other attributes vary, e.g.: Governance and operations may vary from separate dispatch services to a consolidated operation under a single governance structure. Service area may vary from separate coverage to one consolidated area. Also, staff employment, labour representation and training may vary from separate employers to one.

In short, decisions regarding partially consolidated dispatch arrangements are made by agencies/governing authorities who individually or collectively will carefully consider the following: the dispatch requirements of their respective agencies, as well as the situational governance, organizational, operational, labour and fiscal realities of the environment in which they operate. Such deliberations often result in decisions to consolidate dispatch services where it is deemed to be beneficial, desirable, technically feasible and financially viable - resulting in jurisdictions where some dispatch services are delivered on an integrated basis and others operate independently out of separate locations.

Listed below are the principle advantages that may be derived from a partially consolidated dispatch arrangement, derived from our previous research, on-site visits and consultations:

- Potential by the participating agencies to improve interoperability of dispatch services
- Potential by the participating agencies to improve coordination of their field operations, including automatic aid, mutual aid, etc
- Potential by the participating agencies to improve their information sharing and from this, also improve response time and emergency responder safety
- Increased opportunity to jointly identify and address field operations issues that are common to the participating agencies
- Increased opportunity through participating agency collaboration and cost sharing, to secure periodic investment in technology replacement / upgrades
- Potential cost savings by sharing CAD-COM systems, systems technical supports and common data sources (e.g., mapping)
- Potential cost savings (capital and operations) should the participating agencies decide to consolidate the dispatch services in a single emergency communications centre
- Potential cost savings that may be derived by taking advantage of the above opportunities
- Flexibility in design with respect to governance, organization, operations and labour
- Potential for participating agencies/jurisdictions to attain advantages (as listed above) while avoiding potential challenges due to the situational environment in which they operate.

6 Review of Alternative North American Models

The previous section of this report briefly introduced a number of North American models for integrated emergency dispatch ranging from co-location of facilities, to partial consolidation, to full (complete) integration. This section of the report provides additional information on those models drawn from our previous research of alternate emergency communications centre operations, which included on-site visits and consultations with executives in charge.

6.1 Facility Co-Location

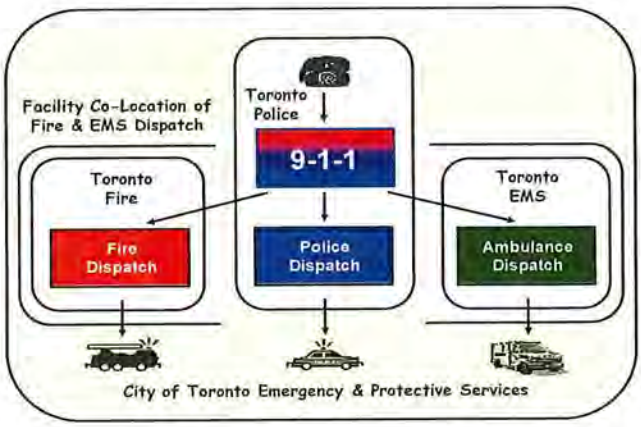
6.1.1 Toronto, ON: Fire and EMS Dispatch

Toronto Fire and Toronto EMS are headquartered in one building. Their dispatch services also are housed in the building. Fire dispatch is located on the third floor and EMS dispatch is on the first (ground) floor. The building, which is owned by the City, also houses a backup communications centre for Toronto Police. Police headquarters, which is situated in another part of the City, houses police dispatch and backup communications centres for Fire and EMS.

FIRE DISPATCH

- Manages about 150,000 requests for fire services a year
- Organizational structure includes: District Chief who serves as Manager, 8 supervisors (uniformed officers), 64 communicators (call takers and dispatchers) all of whom are full-time employees, QA Manager, systems technical support and an Administrative Assistant
- Operates continuously 24 hours each day with a minimum on-duty complement of twelve personnel per shift (4 call takers, 6 dispatchers and 2 supervisors)

Exhibit 6.1: Co-Location of Toronto Fire & EMS Dispatch



- No. of work stations: 16
- Systems: Intergraph CAD system, Motorola radio system and Zoll RMS.
- In the process of developing a QA program using key performance indicators (KPI) to measure performance
- Toronto Police also use an Intergraph CAD, and the two services (police and fire) share a common Motorolla radio system.

EMS DISPATCH

- Manages a total of 400,000 calls for EMS services a year. This figure includes about 270,000 calls ranging in priority from alpha (lowest priority) to echo (highest priority). Fire is tiered to about 34% of the calls
- Organizational structure includes: 4 Managers, 21 supervisors, 108 communicators (call taker/dispatcher) all of whom are full-time employees and 21 additional staff who provide technical and administrative support

- Operates continuously 24 hours each day with a weekday on-duty complement of 25 personnel per shift (6 call takers, 18 dispatchers and 1 supervisor)
- No. of work stations: 31 which includes hospital destination and clearing, special events and tactical
- Systems: TriTech CAD system, AVTEC radio system, Locution RMS and MPDS with built-in QA functionality for call triage
- The service was accredited as a centre of excellence in 2008.

LESSONS LEARNED

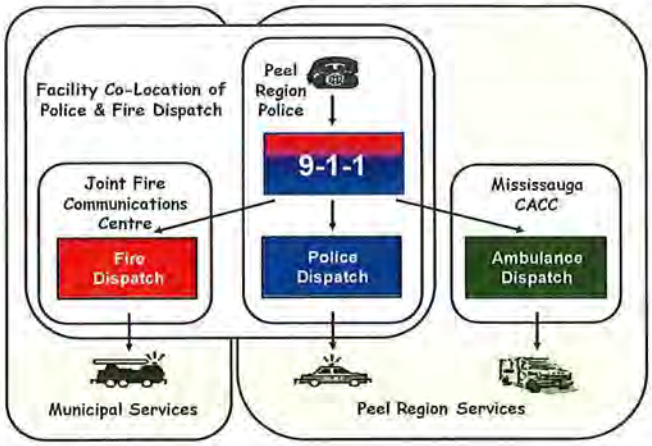
Agency Comments	Our Observations
Advantages - Secure facility shared by both Fire and EMS - Cost savings by each agency in facility capital and operations (e.g., sharing of boardrooms and other common areas) - Potential to improve systems interoperability, inter-agency coordination of operations; also, to collaborate on interests / issues in common Potential Disadvantage - If one agency has to evacuate the building then so also might the other	- The principal co-location objectives appear to be security and the potential for cost containment. It would also appear that the agencies have attained these objectives. - There appears to be relatively little inter-agency interaction (as relates to joint policy development, shared use of resources, etc). Agencies appear to operate as though they were situated in separately located facilities. - The following messages were stated repeatedly by knowledgeable professionals whom we consulted. - Executive leadership (a champion) is needed to attain the full potential afforded by this or any other integrated emergency dispatch model. - If there were a desire to go beyond the current arrangement (i.e., to attain additional potential advantages afforded by co-location) then such aspirations would need to be formally established as objectives in the context of an implementation plan specifically designed for this purpose. Also, to ensure the plan's success, the implementation process will require executive leadership.

6.1.2 Peel Region, ON: Police and Fire Dispatch

The dispatch services for Peel Regional Police and the Peel Regional Joint Fire Communications Centre (an integrated fire dispatch serving the Mississauga, Brampton and Caledon fire departments) are co-located in one building. The two dispatch centres co-exist in physically separated and secured spaces on the same floor of the building.

POLICE DISPATCH

Exhibit 6.2: Co-Location of Peel Region Police & Fire Dispatch



- The police communications centre performs 9-1-1 call taking and dispatch for Peel Regional Police services.
- Manages over 400,000 requests for services a year
- Organizational structure includes: 7 supervisors and 123 communicators, almost all of whom are full-time employees
- Operates continuously 24 hours each day with a typical weekday daytime complement of 15 to 20 communicators per shift
- No. of work stations: 32
- Systems: Intergraph CAD system, Motorola P25 radio system and Niche RMS. Police and Fire share the radio and telephone systems
- The Police boardroom is equipped to serve as backup communications centre for the Mississauga CACC.

FIRE DISPATCH

The fire communications centre, officially known as the Joint Fire Communications Centre (JFCC), provides fire dispatch services on an integrated basis for the Mississauga, Brampton and Caledon fire departments.

Faced with spatial constraints and a need to replace its radio and telephone system the Mississauga Fire dispatch co-located with the dispatch for Peel Regional Police in 1997. As part of the co-location arrangement, police and fire would share the radio and telephone systems. The JFCC was formed in 1999 when the City of Brampton decided that its Fire dispatch, which also dispatches for Caledon, would also co-locate.

From 1999 to 2004 the Mississauga and Brampton dispatch services co-existed in the same centre but continued to operate as separate entities. In 2004 the two fire dispatches began joint call-taking. In 2007 the Mississauga and Brampton fire associations agreed to waive 'no-contracting out clauses' for the dispatch function, thus permitting an integrated fire dispatch model to evolve. Under this model, Mississauga and Brampton fire communicators are cross trained to cover one-another's work stations, and dispatch services are provided on an integrated basis.

- Manages almost 45,000 requests for fire services a year

- Organizational structure includes: a Manager, 8 supervisors, a coordinator and technician from the Mississauga fire service, a coordinator and technician from the Brampton fire service, and 29 communicators all of whom are full-time employees
- Operates continuously 24 hours each day with a minimum on-duty complement of 5 communicators per shift (3 for Mississauga and 2 for Brampton). The maximum on-duty complement is 7 communicators per shift (4 for Mississauga and 3 for Brampton). Communicators rotate through various positions throughout each shift.
- No. of work stations: 8
- Systems: Enroute CAD and RMS systems. Fire shares telephone and Motorola P25 radio systems with Police.

Oversight of the JFCC operations is provided by a Joint Management Team consisting of the 3 Fire Chiefs, 3 Deputy Fire Chiefs and the JFCC Manager (a Divisional Chief) serving as Chair.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - Secure facility shared by both Police and Fire - Cost savings by each agency in facility capital and operations (e.g., sharing of boardrooms and other common areas) - Improved interoperability via shared telephone and radio communications systems - Potential to improve inter-agency coordination of operations; also, to collaborate on interests / issues in common Potential Disadvantage - If one agency has to evacuate the building then so also might the other	General - As in the case of Toronto, the principal co-location objectives appear to be security and the potential for cost containment. As in Toronto, and it would appear that these objectives have been attained. - There appears to be relatively little inter-agency interaction (as relates to joint policy development, shared use of resources, etc). Agencies appear to operate as though they were situated in separately located facilities. Joint Fire Communications Centre (JFCC) - The JFCC operation is not without challenge; however in our view, it is well managed within the following situational context. - Dispatch SOP's that are designed to accommodate needs specific to three fire departments. - Situational environment involving two separate employers (Mississauga and Brampton fire departments) and the requisite use of their respective staffs e.g., firefighters from each organization as primary and relief communicators, and technicians from each organization for IT systems support - Collective agreements, terms and entitlements specific to the 2 participating fire departments including terms that limit/impede the interaction between a supervisor employed by one fire department and a communicator employed by another.

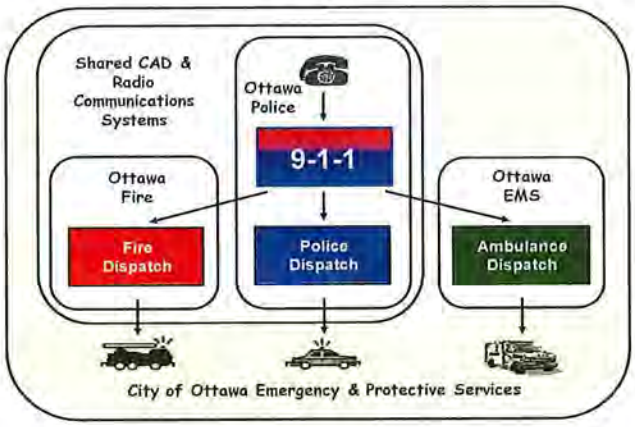
6.2 Partial Consolidation

6.2.1 Ottawa, ON: Police and Fire Dispatch

The City Ottawa was created in 2001 by way of an amalgamation of twelve former municipalities including the Regional Municipality of Ottawa Carleton. The amalgamation led to the establishment of a single City-wide police department and a single police dispatch centre.

The amalgamation also resulted in the establishment of a single City-wide fire department. Following a review of alternative fire dispatch options, a decision was made to partner with Police in the use of their CAD and radio communications systems to dispatch both services. The decision was driven primarily by the potential to contain costs. Integration of the systems took about a year to implement.

Exhibit 6.3: Ottawa "Partially Consolidated" Dispatch



In this arrangement, the IT division of the Ottawa Police department is responsible for managing and maintaining the shared CAD and radio communications systems, including hardware, software, security (including CAD/RMS firewalls), and emergency power and backup systems.

That aside, the City's police and fire departments operate their dispatch services individually, from separately located stand alone facilities, accessing the CAD-COM systems remotely through hard wired and mobile devices. The City's EMS department self-dispatches from a separate ambulance communications centre operating under contract to the Ontario MOHLTC.

The City Police department is responsible for the 9-1-1 function, managing over 260,000 9-1-1 calls a year, with an approximate split of 65% requiring police services, 27% EMS, 4% fire and 4% other. Calls requiring fire or EMS are down streamed to the respective agencies.

The systems shared by police and fire include a CAD manufactured by Versaterm and an EDACS Networked Standard radio communications system. Police and fire operate with separate RMS systems. Police use Versadex manufactured by Versaterm and Fire uses FDM.

The Versaterm CAD is configured by user category (i.e., police call taker, fire call taker, police dispatcher, etc) and by access to records (i.e., police access only, fire access only, information common to both parties, etc). The system is set up to automatically create police and fire call records. The system uses a single data base (GIS mapping) for street network addressing and specifics on institutions.

Within this arrangement, police and fire can respectively adjust their own operational parameters (e.g., station resources and recommends governing the deployment of their own resources).

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - A principal advantage is having implemented secure CAD and radio communications systems managed by Police IT on behalf of both agencies - Sharing CAD and radio communications systems has improved interoperability of communications, facilitated information sharing and streamlined dispatching functions (e.g., push to talk features, common emergency activation, etc) - Streamlining has improved response time, use of emergency responder resources and responder safety - Attained cost savings by sharing CAD-COM systems, systems technical supports and common data sources (e.g., mapping) - Increased capability, through collaboration and cost sharing, to secure periodic investment in technology replacement / upgrades. Potential Disadvantage - In this arrangement the Police department serves as the 'business owner' and Fire is treated as a 'client' having little influence on the business owner's decisions regarding the systems	- The decision by Fire and Police, to share CAD and radio communications systems, was driven primarily by a common objective to contain their respective costs. It would appear that this objective has been attained. - Flexibility in the design of this arrangement has enabled the participating agencies to attain additional advantages (listed to the left) while avoiding potential challenges that would be associated with any proposed changes to the situational environment in which they operate (e.g., as may relate to changes in governance, organization, operations and labour representation).

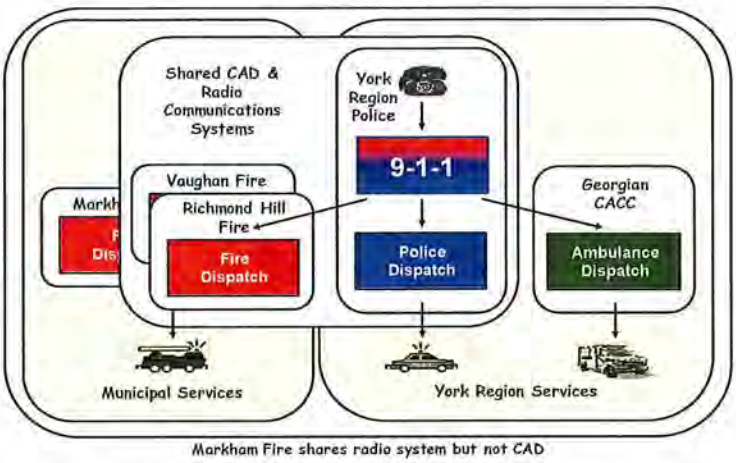
6.2.2 York Region, ON: Police and Fire Dispatch

The arrangement in York Region is similar to that of Ottawa. The York Regional model for integrated dispatch involves the Vaughan and Richmond Hill Fire departments, and the York Regional Police department. The IT division of the police department is responsible for maintaining a shared CAD and radio communications system, and the police and fire departments operate their dispatch services individually, from separately located stand alone facilities, accessing the shared CAD-COM systems remotely through hard wired and mobile devices.

Within York Region there are three fire dispatch services. They are operated by the Vaughan, Richmond Hill and Markham Fire departments. Collectively Vaughan and Richmond Hill dispatch for seven of the eight existing fire departments. Markham Fire, which to date has preferred to self dispatch, has expressed interest in joining the above arrangement.

The Region's EMS department is dispatched by Georgian CACC, which is based in Barrie and operated by the EHS Branch of the Ontario MOHLTC.

Exhibit 6.4: York Region "Partially Consolidated" Dispatch



Police and fire services in York Region implemented a common radio system circa 2000/01. The Regional Police Service transitioned to a Versaterm CAD in 2004. The dispatch services of the Vaughan and Richmond Hill Fire departments partnered with police in the use of their CAD in 2007/08. This arrangement, in which police and fire share CAD-COM systems, serves the participants well (e.g., in 2010, by way of collaboration and cost sharing, they were able to secure authorization to outfit their respective fleets with MDTs).

Terms governing the arrangement between police and fire are set out in an inter-agency service agreement. Under the terms of the agreement, York Regional Police own and are responsible for managing the CAD and radio systems. More specifically, the IT division of the York Regional Police department is responsible for managing and maintaining the shared CAD and radio communications systems, including hardware, software, security (including CAD/RMS firewalls), and emergency power and backup systems. The arrangement is overseen by the Chiefs of Police and Fire, supported by an inter-agency working group that meets on a scheduled basis to address issues in common.

York Regional Police is responsible for the 9-1-1 function, managing over 260,000 incoming calls a year. Calls requiring fire or EMS are down streamed to the respective agencies.

Police and fire departments throughout York Region share a Motorolla 800 Mhz radio communications system. The dispatch services managed by Police and by the Vaughan and Richmond Hill fire departments share a CAD manufactured by Versaterm. Markham fire uses a CAD manufactured by Enroute. For records management, police use a Versadex RMS system

manufactured by Versaterm, Vaughan fire dispatch uses a Firehouse RMS system, and Markham uses one by Enroute.

The Versaterm CAD is configured by user category (i.e., police call taker, Vaughan fire call taker, Richmond Hill fire call taker, etc) and by access to records (i.e., information common to all parties, police access only, etc). The system is set up to automatically create police and fire call records. The system uses a single data base (GIS mapping) for street network addressing and specifics on institutions. Within this arrangement, police and fire can respectively adjust their own operational parameters (e.g., station resources and recommends governing the deployment of their own resources).

LESSONS LEARNED

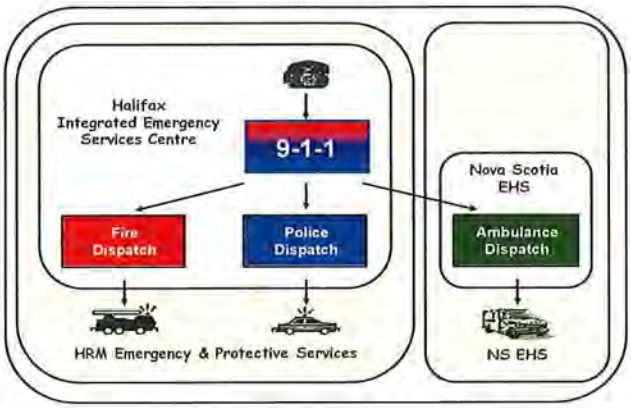
Agency Comments	Our Observations
Advantages - A principal advantage is having implemented secure CAD and radio communications systems managed by Police IT on behalf of both agencies - Sharing CAD and radio communications systems has improved interoperability of communications, facilitated information sharing and streamlined dispatching functions (e.g., push to talk features, common emergency activation, etc) - Streamlining has improved response time, use of emergency responder resources and responder safety - Attained cost savings by sharing CAD-COM systems, systems technical supports and common data sources (e.g., mapping) - Increased capability, through collaboration and cost sharing, to secure periodic investment in technology replacement / upgrades. - Collectively, Vaughan and Richmond Hill fire contribute about $400,000 a year to the partnership. This covers maintenance of CAD and MDT's, licensing and technical support. Versaterm - Versaterm is good to work with. Versaterm meets with its police clientele 3 to 4 times a year, seeking system improvement insights and suggestions. Relevant suggestions are subsequently incorporated as systems upgrades.	- The decision by Fire and Police, to share CAD and radio communications systems, was driven primarily by a common objective to contain their respective costs. It would appear that this objective has been attained. - Flexibility in the design of this arrangement has enabled the participating agencies to attain additional advantages (listed to the left) while avoiding potential challenges that would be associated with any proposed changes to the situational environment in which they operate (e.g., as may relate to changes in governance, organization, operations and labour representation). - In contrast to the Ottawa situation where the Police department serves as the 'business owner' and Fire as a 'client' having little influence on the business owner's decisions regarding the systems, the York Region model is structured as a 'partnership' in which the participants have a meaningful say. - In this partnership, capital investments / major modifications to systems require prior-approval by all parties to the arrangement. This is facilitated by an executive committee consisting of the Chiefs of Police and Fire, supported by an inter-agency working group that meets on a scheduled basis.

6.2.3 Halifax, Nova Scotia: Police and Fire Dispatch

The emergency dispatch services model in Halifax Regional Municipality (HRM) is similar to that of Greater Sudbury in that it also consists of two separately managed emergency communications centres – one, which Halifax Regional Police Service manages, delivers 9-1-1 on an integrated basis with the dispatch services for police and fire and another, which operates under provincial authority, delivers EMS dispatch.

HALIFAX INTEGRATED EMERGENCY SERVICES (HIES)

Exhibit 6.5: Halifax "Partially Consolidated" Dispatch



The police-fire dispatch centre, formally known as Halifax Integrated Emergency services (HIES), was formed in 1996/97 following a provincially mandated amalgamation of multiple police services into the Halifax Regional Police Service (HRPS) and multiple fire services into the Halifax Regional Fire Department (HRFD).

HIES operates as a division of the Halifax Regional Police Service under the command of a Deputy Police Chief supported by an Operations Manager. Serving the Halifax Regional Municipality, a population centre of about 400,000 persons, HIES delivers the 9-1-1 function as well as dispatch services for HRPS, HRFD and the RCMP. Oversight of the communications operation is provided by an advisory committee consisting of Police, Fire and the RCMP.

HIES manages over 110,000 incoming 9-1-1 calls a year with a split of about 49% Police, 30% EMS, 3% Fire and 18% other. The cost of the operation is about $7 million a year. Revenue sources include $500,000 a year from EMS and $525,000 from the province (for 9-1-1 services).

The centre operates with a staff complement of 80 personnel, all of whom are civilian members of the Halifax Regional Police Association. This includes: 60 full-time communicators, 12 part time communicators and 8 Supervisors. All of the communicators are trained in 9-1-1 call taking. In addition, about 90% are cross trained to perform police dispatch and about 50% are cross trained to dispatch both police and fire.

The centre operates on 12-hour shifts with a typical on-duty complement of 17 to 18 personnel per shift (6 call takers, 4 fire dispatchers, 6 police dispatchers, and 1 to 2 supervisors). The operations adhere to service standards approved by Council. Performance and compliance to standards are checked daily.

The centre originally operated with separate CADs for police and fire. It evolved to a single Versaterm CAD in 2005. The communications centre is supported by a Motorolla Gold Elite radio communications system that is used province-wide. Police use a Versadex RMS system manufactured by Versaterm. Fire, which manages its own records, uses an RFD system. Fleets are equipped with MDT's. Marked police units also are equipped with GPS/AVL.

IT support is provided by the Region's Corporate Services. In addition, HIES also employs an in-house IT resource who serves as inter-agency liaison. To minimize the potential for a disruption

of services, the centre is equipped with built-in backup systems including auxiliary power and backup radio.

EMS DISPATCH

Nova Scotia EHS is responsible for EMS dispatch province-wide. The EMS communications centre based in Halifax is managed by Emergency Medical Care Inc. (EMCI), a subsidiary of Medavie EMS, operating under contract to NS EHS. The EMS communications operation has received accreditation as a Centre of Excellence.

The centre manages a call volume of 140,000 requests for EMS service a year. The staffing complement includes a manager, 6 supervisors, 47 full-time communicators, 6 part time communicators, and part time administrative supports. All communicators must be licensed paramedics. Daytime shifts typically operate with 13 communicators (7 call takers and 6 dispatchers) and 1 or more supervisors. Night time shifts typically operate with 9 communicators.

The centre is equipped with a TriTech CAD, the provincial Motorolla Gold Elite radio communications system, MEDUSA RMS and MPDS with built-in Pro QA functionality for call triage. EMS vehicles are equipped with GPS/AVL and MDT's. Backup systems include a fully equipped backup EMS dispatch centre at an alternate location.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages of HIES - Security of shared facility, CAD and radio communications systems managed by police - Improved interoperability of communications between police and fire. Streamlining of some of their dispatching functions, and deployment of responder resources only when required - Information sharing between the two agencies, enhances responder safety - Increased efficiency of operations and flexibility to manage workload and staff resources, gained by working with one CAD system, using one staff complement and cross-training communicators. - Stability of staffing / turnover is not an issue - Alleviated fire's initial concerns that police calls will take priority - Emergency communications centre needs to be managed by an emergency services agency. Tried alternate management models but they were not successful. The issue appears to be one of 'trust and confidence' - Attained cost savings by sharing the same facility, security, CAD-COM systems, technical supports and data sources (e.g., mapping). - Difficult to precisely define the savings because of the following. Upon consolidation, new standards were established for the entire	- The consolidation of police and fire dispatch was driven primarily by a desire to contain costs. It would appear that this objective has been attained. - HIES facility: Secure facility. Appears to be well managed. Good size and layout. Aesthetically pleasing. Lots of noise reduction. Great lighting with good control. Modern workstations. - HIES has attained a highly visible profile as a competent, well managed organization that delivers quality emergency dispatch services. Considered a best practises model by multiple other jurisdictions. - Additional advantages to be attained by integrating EMS dispatch with HIES include: enhanced information sharing and streamlining of dispatching functions for all 3 agencies; improved interoperability and coordination of field operations across all 3 agencies; as well as additional cost savings by sharing the same facility, security, CAD-COM systems, etc. - Extrapolating the above information to the Greater Sudbury situation, one may conclude that attaining a fully integrated emergency dispatch service arrangement (for police, fire and EMS) will require garnering sufficient political will to mandate a change despite relatively high start up costs and potential resistance to change by separate governance authorities, separate labour groups, etc.

Agency Comments	Our Observations
organization and dispatch staffing levels were adjusted to ensure operational compliance. Critical success factors - HIES did not come about by consensus (and likely would not have come about in that manner). It was mandated by elected officials and its implementation was successful because the transition was led at an executive level. - There may be opportunities to co-locate other dispatch services in the same facility (i.e., dispatch for EMS, transit, public works, etc) which potentially would reduce individual costs for facilities, security, CAD-COM systems, etc, and increase collective capability to attain additional investment in facility and technology. - Cost containment should not be the principal going-forward objective for fully integrating emergency dispatch services. The primary going-forward objective should be the potential to improve dispatch services quality and interoperability. Cost containment is an added benefit that will be derived over time.	- The above was mentioned by HIES management and stated repeatedly by several other knowledgeable agencies with whom we consulted.

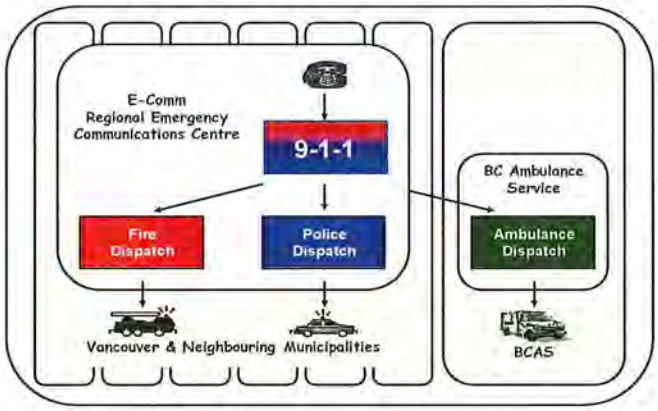
6.2.4 Vancouver, British Columbia: Police and Fire Dispatch

The emergency dispatch services model in Vancouver BC also is similar to that of Greater Sudbury in that it also consists of two separately managed emergency communications centres. One centre, which E-Comm manages, delivers 9-1-1 on an integrated basis with the dispatch services for police and fire. A second centre, managed by the British Columbia Ambulance Service (BCAS), delivers EMS dispatch.

E-COMM

Based in Vancouver, E-Comm is the regional emergency communications centre for southwest British Columbia. E-Comm serves a population base of over 2 million residents, providing a wide-area radio communications system, 9-1-1 call taking, and police and fire dispatch services. The radio communications system is used by over 30 agencies (police, fire and EMS). Emergency dispatch services are provided for about 12 police and 18 fire departments.

Exhibit 6.6: Southwest BC "Partially Consolidated" Dispatch



E-Comm was established as a not-for-profit agency in 1999. The principal provincial legislation giving authority to E-Comm includes the Emergency Communications Corporations Act and the Business Corporations Act.

The decision to establish E-Comm evolved from a June 1994 Stanley Cup riot in Vancouver, where relatively poor radio communications impeded a coordinated public safety agencies response. The objective was to establish a robust, rigorous and interoperable radio system for southwest British Columbia that would be capable of supporting the communications and information needs of responding emergency services agencies, both individually and for a coordinated emergency response. Proof of E-Comm's success was demonstrated during a second Stanley Cup riot in Vancouver in June 2011, during which the radio system successfully managed a massive increase in radio traffic and 9-1-1 calls.

E-Comm is made up of multiple Metro Vancouver municipalities referred to generally as shareholders. There are about 50 shareholders. The RCMP participates as a special user. E-Comm's obligations are set out in various member agreements.

E-Comm oversight is provided by an 18-member Board of Directors, which includes 10 municipal representatives, 2 from Police Services, 2 from the province (BCAS) and 4 independent members who provide value added expertise (legal, HR, finance, etc). The Board Chair is selected from among the independent members. The Board is supported by various user committees (police, fire and EMS) which meet periodically to jointly address issues of relevance to the communications operation.

E-Comm manages over 940,000 incoming 9-1-1 calls a year with a split of about 71% Police, 23% EMS and 6% Fire. It also manages about 370,000 non-emergency police calls a year.

The centre operates with a staff complement of 280 personnel employed either full time or in an auxiliary capacity. The employees are represented by the Canadian Union of Public Service

Employees (CUPE). All of the communicators are trained to perform 9-1-1 call taking and either police or fire dispatch. The staffs are not cross trained to perform both police and fire dispatch. The centre is equipped with 65 workstations, which includes about 20 that would serve as backup for EMS dispatch should it be necessary for BCAS to suddenly vacate their centre. The majority of the workstations are staffed on a continuous basis 24 hours a day. Supervisors are on duty day and night to provide operational oversight.

The E-Comm radio communications system operates at 800 MHz. E-Comm owns and supplies all of the radios (a total of some 7,500 radios). There are separate CADs and RMS systems for police and fire. Police dispatch operates with a Versaterm CAD and Versadex RMS. Fire dispatch uses an Intergraph CAD and FDM for RMS. The dispatch systems support GPS/AVL and MDTs. Most of the police and fire units operating within the service area are equipped with such devices.

On-site and off site backup solutions are in place to ensure the continuity of services during major outages. The BCAS ambulance communications centre, situated within a 5 minute drive, serves as an emergency off site backup solution. Operational performance and potential risks are carefully managed by in-house personnel, in consultation with users. An information and technology helpdesk operates on-site 24 hours a day. Community outreach and 9-1-1 education programs are aimed at supporting operational excellence.

The cost of the E-Comm operation is about $50 million a year. E-Comm receives about $3 million a year in provincial funding for 9-1-1 services. The rest of the operating funds come from membership fees (i.e., fees for radio and dispatch services).

EMS DISPATCH

Operating under the authority the Provincial Emergency and Health Services Commission (EHSC), the British Columbia Ambulance Service (BCAS) is the sole provider of pre-hospital ambulance services, including ambulance dispatch services, in British Columbia. This includes both ground and air ambulance services.

Ambulance dispatch services are delivered from three centres based respectively in Vancouver, Victoria and Kamloops. The dispatch centres are equipped with a common Intergraph CAD and RMS, and AMPDS call triage system. For radio communications, the Vancouver centre uses the E-Comm wide-area 800 MHz radio system, the Victoria centre uses a Crest radio system and Kamloops uses a VHF radio system. The systems support GPS/AVL which is installed in all ambulances, and MDT's which are installed in vehicles that operate in high volume locations.

Operating with a common and fully interoperable CAD system, the centres can respectively serve as emergency backup to one-another during temporary outages. In addition BCAS and E-Comm have reciprocal arrangements to serve as off site emergency backup to one-another.

Collectively the 3 ambulance dispatch centres operate with a staffing complement of about 240 personnel. This includes 5 managers, about 215 call takers and dispatchers (125 in Vancouver, 40 in Victoria and 50 in Kamloops), and various QA, IT systems and administrative supports. The communicators operating out of Vancouver are responsible for, and are cross trained to perform, both ground and air ambulance dispatch. Ambulance communications employees are represented by CUPE chapter 873 (compares to chapter 873-2 which covers E-Comm).

The 3 ambulance dispatch centres manage about 500,000 requests for EMS services a year. Vancouver, which dispatches both ground and air ambulances manages almost 60% of the combined call volume. Quality of EMS triage and dispatch are assured by way of a random audit

of 3% of the emergency medical calls. The cost to provide EMS dispatch services is about $18 million a year.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages of E-Comm - Confidence by police and fire clientele in the security, reliability, resilience and interoperability of the facility, CAD and radio communications systems - Improved interoperability of communications between police and fire. Streamlining of some of their dispatching functions, and deployment of responder resources only when required - Enhanced information sharing between police and fire, contributing to improved responder safety. Extends also to EMS which operates on the same radio communications system. - Improved downstreaming of 9-1-1 calls and associated response times - In-house resource capability to plan, forecast and adjust staffing levels for planned events. Sufficient resources to accommodate short notice increases in dispatch staffing due to unplanned events - Attained cost savings by sharing the same facility, security, radio system, systems technical supports and common data sources (e.g., mapping); also, one CAD system for Fire and one for Police. - Stand-alone systems would have been more expensive. By sharing systems, smaller communities have been able to attain high quality dispatch services at relatively low cost - Through collaboration and cost sharing, the members have been able to secure and maintain leading edge technology replacement / upgrades - Transparency of not-for-profit E-Comm operation ensures cost-effectiveness of the services. Critical success factors - E-Comm did not come about by consensus (and likely would not have come about in that manner). It was championed by the Vancouver City Manager in consultation with peers working in other Vancouver area municipalities and in the provincial government. - Its implementation was successful because the transition was led at an executive level.	- The consolidation of police and fire dispatch was driven primarily by a need to establish a robust, rigorous and interoperable radio system for southwest British Columbia that would be capable of supporting the communications and information needs of responding emergency services agencies, both individually and for a coordinated emergency response. This objective has been attained. - E-Comm operates from a purpose-built facility that has been designed to post-disaster standards and equipped with resilient operational technologies, security, back-up power and built-in system redundancies. It is a must see facility. - E-Comm facility: Secure. Appears to be well managed. Good size and layout. Aesthetically pleasing. Lots of noise reduction. Great lighting with good control. Modern workstations. - E-Comm has attained a highly visible profile as a competent, well managed organization that delivers quality emergency dispatch services. Considered a best practises model by multiple other jurisdictions. - We are advised that some time ago, BCAS and E-Comm shared a common CAD server manufactured by Altiris. BCAS found the CAD somewhat restrictive in terms of information sharing, ability to program operational adjustments, etc. As a result BCAS chose to operate independently with separate CAD (albeit they continue to utilize E-Comm's radio system). - E-Comm is currently equipped with state-of-the-art CAD's for police (Versaterm) and for fire (Intergraph). These CAD systems are significantly more flexible and supportive of multiple agency operations on a shared basis (e.g., systems can be set up to automatically create police and fire call records; security and access to data can be configured to user requirements; and agencies can respectively adjust their own operational parameters. - Additional advantages to be attained by integrating EMS dispatch with E-Comm include: enhanced information sharing and streamlining of dispatching functions for all 3 agencies; improved interoperability and coordination of field operations across all 3 agencies; as well as additional cost savings by sharing the same facility, security, CAD-COM systems, etc.

Agency Comments	Our Observations
	- Extrapolating the above information to the Greater Sudbury situation, one may conclude that attaining a fully integrated emergency dispatch service arrangement (for police, fire & EMS) will require support from both executives and elected officials, to mandate a change despite relatively high start up costs and potential resistance to change by separate governance authorities, separate labour groups, etc.

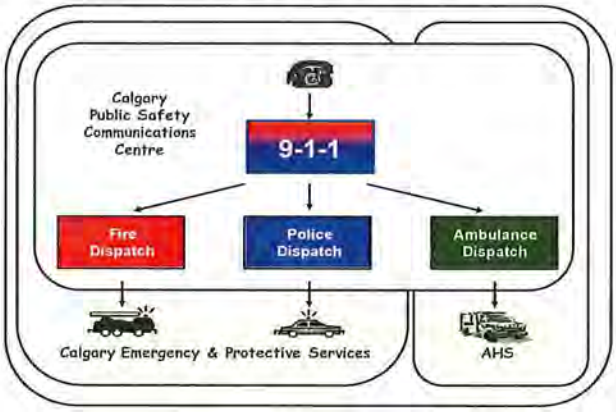
6.3 Full (Complete) Integration

6.3.1 Calgary, Alberta: Department of Public Safety Communications

Calgary Public Safety Communications (Calgary PSC) is a fully integrated emergency dispatch operation that delivers 9-1-1 on an integrated basis with dispatch services for all three emergency services (police, fire and EMS).

Situated in the City's Community Services and Protective Services division, Calgary PSC operates as an independent business unit under the oversight of a Board of Directors represented by the Police, Fire and Community Services departments. Its clientele include Calgary Police, Calgary Fire, 8 outlying fire departments and Alberta Health Services (AHS), the provincial agency responsible for province-wide delivery of ground and air ambulance services.

Exhibit 6.7: Calgary Public Safety Communications



Calgary PSC was established in 2006, as a result of a decision by City Council to amalgamate the then separate emergency dispatch services managed respectively by the City's Police, Fire and EMS departments. The original governance structure included a Board made up of the three Chiefs plus the City's Chief Technology Officer. In 2010, the governance structure was changed to reflect the findings of a 2009 operational review as well as a provincial government realignment of responsibility for EMS to Alberta Health Services. The current Board of Directors consists of 6 members; 2 of whom are from the Police department, 2 from Fire and 2 from Community Services.

Organizationally, Calgary PSC is structured into 3 areas: operations, operations support and client services as discussed below.

Calgary PSC operates with a staff complement of about 310 personnel, including: a Commander in charge, a Deputy Commander, Manager, Operations Superintendent, supervisors, communicators (call takers and dispatchers), and various technical, strategic and administrative supports that are relevant to the operations. The Commander in charge and Deputy Commander positions are filled by senior officers of the police and fire departments, who respectively serve for one year terms.

All communicators are trained to perform 9-1-1 call taking. About two-thirds are cross trained to dispatch for police and about one-third to dispatch for fire and EMS. Very few staff are cross-trained to dispatch all three functions (police, fire and EMS). The communicators are represented by the IBW electrical workers union.

Calgary PSC operates continuously 24 hours a day with a typical weekday daytime on-duty complement of 52 personnel, which includes 30 police communicators, 18 for fire and 4 supervisors. The centre manages about 1 million incoming 9-1-1 calls a year with a split of about 55% Police, 35% EMS and 10% Fire.

Calgary PSC maintains service agreements that clearly set out what clients may expect to receive vis-à-vis call taking and dispatch services and performance. The Client Services section of Calgary PSC is responsible to ensure client satisfaction with the services that Calgary PSC provides. This is accomplished by way of frequent communications, information sharing (e.g., monthly performance reports) and meetings; also, by way of various advice and support positions within the organization that are staffed by subject matter experts drawn from the respective agencies (police, fire and EMS).

The radio system currently used by Calgary PSC is Motorola ASTRO25 trunked radio system (analog and digital voice) and 400MHZ (UHF) analog repeaters. As a back up system, Calgary PSC uses TELUS iDEN network and MSAT. For police dispatch, Calgary PSC uses an Intergraph CAD (V6/7), and for 9-1-1 call taking and fire and EMS dispatch, it uses an Intergraph CAD (V9.01). Under provincial mandate, all police services in Alberta are migrating to an Intergraph CAD (V API-3). Each agency manages its own records. For this purpose, police use a Niche RMS and fire uses FDM. The dispatch systems support GPS/AVL and MDTs. Most emergency services vehicles operating within the service area are equipped with such devices.

Calgary PSC operates with in-house IT systems support. Additional systems support is provided by the City's Corporate Services. On-site and off site backup solutions are in place to ensure the continuity of services during major outages.

The cost of the Calgary PSC operation is about $34 million a year. $21 million comes from the City's property tax base. The rest comes from the province (for 9-1-1 call taking services), AHS payments for ambulance dispatch, and payments for fire dispatch from outlying communities.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - Security of shared facility, CAD and radio communications systems - Improved interoperability of communications and streamlining of dispatch functions. Improved inter-agency coordination of field operations and deployment of responder resources only when required. Enhanced information sharing contributing to improved responder safety. - Improved downstreaming of 9-1-1 calls and associated response times - Cross-training in multiple agency dispatch has increased efficiency of operations and flexibility to manage workload. Sufficient resources to accommodate planned events and short notice increases in workload. - Prior to their consolidation, individual dispatch centres had difficulty attaining defined performance targets. Upon consolidation, standards for the entire organization were established by applying the most stringent of the previous targets and dispatch staffing was increased to ensure operational compliance. - Attained cost savings by sharing the same facility, security, radio system, systems supports	- The amalgamation of dispatch services for police, fire and EMS was driven primarily by City Council's desire to improve emergency dispatch services quality and interoperability. This objective has been attained. - Upon consolidation, new performance standards were established for the entire organization drawing from the most stringent of the standards previously used by the individual dispatch operations. As a result, Calgary PSC has attained dispatch service quality higher than that which the agencies were capable of when operating separately. - Secure facility. Appears to be well managed. Good size and reasonable layout. - Calgary PSC has a highly visible profile. Known for being a well managed organization that delivers quality emergency dispatch services. Considered a best practises model by multiple other jurisdictions. - Had the province not recently mandated the use of a common CAD for police dispatch (Intergraph API-3), Calgary PSC would be migrating to a single CAD and concurrently increasing their cross training efforts. Because this CAD is not conducive to multiple agency operations on a

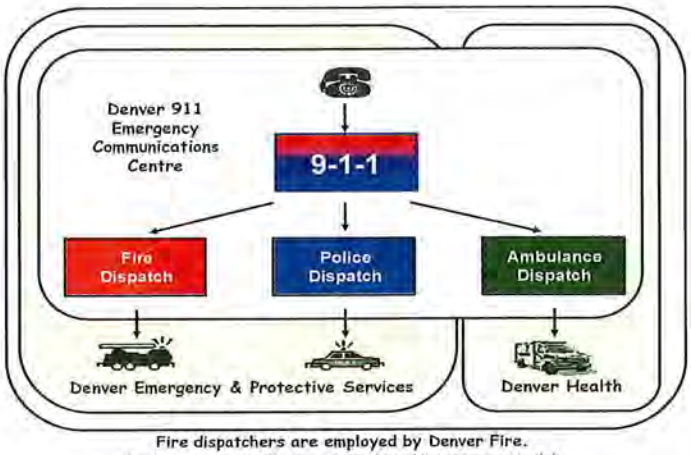
Agency Comments	Our Observations
and data sources. Difficult to precisely define the savings because of the change described above. - Through collaboration and cost sharing, Calgary PSC has been able to secure and maintain leading edge technology replacement / upgrades Critical success factors - Calgary PSC did not come about by consensus (and likely would not have come about in that manner). It was mandated by City Council and its implementation was successful because the transition was led at an executive level. - Emergency communications centre needs to be managed either by someone in uniform or someone having extensive previous experience working for an emergency services organization. Tried alternate 'civilian-led' management models but they were not successful. The issue appears to be one of 'trust and confidence' - The potential for cost containment should not be the principal going-forward objective for fully integrating emergency dispatch services. The primary going-forward objective should be the potential to improve dispatch services quality and interoperability. Cost containment is a potential added benefit to be derived over time.	shared basis Calgary PSC will continue to operate with separate CAD systems for police and for 9-1-1, fire and EMS. - Extrapolating the above information to the Greater Sudbury situation, one may conclude that attaining a fully integrated emergency dispatch service arrangement (for police, fire and EMS) will require garnering support at both the executive and elected official levels, to mandate a change despite relatively high start up costs and potential resistance to change by separate governance authorities, separate labour groups, etc. - The above was mentioned both by Calgary PSC management and by other knowledgeable agencies with whom we consulted.

6.3.2 Denver, Colorado: Denver 911

Established in 2007, Denver 911 is a fully integrated emergency dispatch communications centre serving the City and County of Denver, a consolidated jurisdiction with a resident population of 620,000 which on weekdays increases to over 1 million.

Emergency responder agencies supported by Denver 911 include the Denver Police department, the Denver Fire department, which also provides fire suppression coverage to various outlying communities, and Denver Health which delivers EMS services. Denver 911 handles 1.1 million calls a year, of which about one half are incoming 9-1-1 calls and one half are non-emergency calls.

Exhibit 6.8: Denver 911



Fire dispatchers are employed by Denver Fire.
Ambulance dispatchers are employed by Denver Health

Situated in the Department of Public Safety, Denver 911 operates as a separate division under the administrative oversight of a Director who reports to the Manager of the Public Safety Department. Also reporting to the Department Manager are the Denver Chief of Police and Fire Chief. These four individuals (Manager, Director, Police Chief and Fire Chief) and their deputies meet bi-weekly to review the Centre's operations and performance.

Organizationally, Denver 911 is structured into a team consisting of 9-1-1 operators, police dispatchers, fire dispatchers and dispatchers for paramedic services who are situated in the same communications centre within proximity of one-another. The 9-1-1 operator receives and screens the incoming call to determine if the caller has a police, fire or medical emergency. Police and fire related calls are transferred to the respective dispatcher. Medical related calls are triaged by the 9-1-1 operator and subsequently transferred to the EMS dispatcher.

With a staff complement that totals about 170 personnel, Denver 911 operates continuously 24 hours a day. Staffing includes the Director, 2 Operations Managers, 10 shift supervisors, sixty-nine (69) 9-1-1 operators, 45 police dispatchers, 20 EMS dispatchers, 20 fire dispatchers and various technical, strategic and administrative supports that are relevant to the operations, including quality assurance and training.

The 9-1-1 operators and police dispatchers are employed and trained by Denver 911. These are civilian (non-uniformed) employees and they are not unionized. EMS dispatchers are employed and trained by Denver Health. They also are non-unionized civilian employees. Fire dispatchers are employed and trained by Denver Fire. They consist of uniformed firefighters who are represented by organized labour.

The communications staffs are uniquely trained to support their respective agency responder needs. They are not cross-trained to perform one-another's functions. Each employer also appoints its own communications supervisors. For such purposes, Denver Fire and Denver Health utilize the services of uniformed Fire and EMS officers, whereas Denver 911 relies on civilian employees.

Denver 911 operates from a City/County owned facility. The facility houses 44 work stations: 21 for 9-1-1 call taking, 9 for police dispatch, 6 for fire dispatch, 6 for EMS dispatch and 2 for on-duty supervisors. The centre operates with a typical weekday daytime on-duty complement of 30 to 34 personnel.

The Denver 911 centre is equipped with a TriTech CAD, Harris 800 MHz radio communications system and a Pro QA system for medical call triage. The CAD and radio systems are shared by police, fire and EMS. Each agency manages its own records. For this purpose, police use a Versadex RMS, fire uses Fire House and EMS uses a High Plains system. The dispatch systems support GPS/AVL and MDTs. Most emergency services vehicles operating within the service area are equipped with such devices.

Denver 911 employs in-house IT systems support. Additional systems support is available by way of the City/County corporate services and through the individual emergency services agencies. On-site and off site backup solutions are in place to ensure the continuity of services during major outages.

The cost to operate Denver 911 is about $15 million a year. The City/County contributes about $10 million, Denver Fire contributes about $2 million, payments for 9-1-1 services account about $2 million, and the rest comes from Denver Health.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - Security of shared facility, CAD and radio communications systems - Shared systems contribute to improved interoperability of communications and streamlining of dispatch functions, improved inter-agency coordination of field operations and deployment of responder resources only when required, enhanced information sharing, and in turn improved responder safety. - Improved downstreaming of 9-1-1 calls and associated response times attributed to co-location and proximity of 9-1-1, police, fire and EMS communicator work stations - Attained cost savings by sharing the same facility, security, CAD and radio systems, systems supports and data sources. Difficult to precisely define the savings. - Through collaboration and cost sharing, Denver 911 has been able to secure and maintain leading edge technology replacement / upgrades. - Seeking to co-locate additional dispatch services in the same facility, which potentially would reduce individual costs for facilities, security, CAD-COM systems, etc. Also, would increase collective capability to attain additional investment in facility and technology. Critical success factors	- The establishment of a consolidated emergency dispatch services centre was driven primarily by a desire to improve emergency dispatch services quality and interoperability. - Since Denver 911 has a highly visible profile and is recognized for being a well managed organization that delivers quality emergency dispatch services, one may conclude that the original objective has been attained. - Secure facility. Appears well managed. However, floor space is tight and affects work area layout. Were advised that the facility was built in 1948 and that management have recently commenced a facility needs assessment. - Use of individual staff complements that are separately employed by Denver 911, Denver Fire and Denver Health, and the absence of communicator cross-training, are viewed as significant drawbacks to full integration, e.g.: precludes shared use of communicator and supervisory resources, flexibility to efficiently manage workload, and the attainment of additional related operational efficiencies. - For the Greater Sudbury situation, we are of the view that consolidation of governance and labour are critical to a successful integration of the services (as demonstrated by best practices centres such as HIES, Calgary PSC, Portland BOEC and Fairfax County PSC).

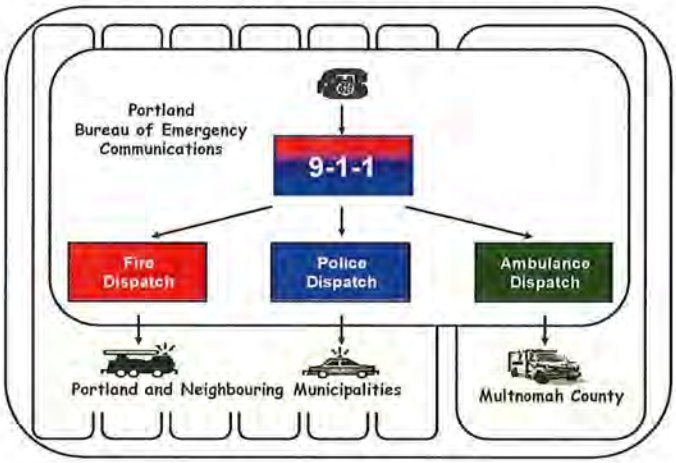
Agency Comments	Our Observations
- The potential for cost containment should not be the principal going-forward objective for fully integrating emergency dispatch services. The primary going-forward objective should be the potential to improve dispatch services quality and interoperability. Cost containment is a potential added benefit to be derived over time.	

6.3.3 Portland, Oregon: Bureau of Emergency Communications

The Portland Bureau of Emergency Communications (BOEC) is a fully integrated emergency dispatch operation, providing 9-1-1 call taking and dispatch services for police, fire and EMS on behalf of a municipal partnership consisting of the City of Portland, Multnomah County, the Cities of Gresham, Troutdale, Fairview and Maywood Park, and Wood Village.

BOEC was established in the mid-1970's to provide 9-1-1 call taking and police dispatch services. A few years later BOEC's responsibilities were expanded to include EMS dispatch. BOEC assumed additional responsibility for fire dispatch in 1994. Today, BOEC's clientele include: 7 police departments, 4 fire departments (Portland, Gresham and 2 volunteer services), the County's EMS service provider (American Medical Response), and the Portland airport.

Exhibit 6.9: Portland Bureau of Emergency Communications



Organizationally BOEC is a department of the City of Portland operating under the responsible charge of a Director who reports to the City Manager and City Council. A service agreement defines what the municipal clients may expect to receive vis-à-vis call taking and dispatch services and performance. Client satisfaction is ensured by way of frequent communications, information sharing (e.g., annual Service Efficiency Achievement report), meetings and municipal involvement by way of the following committees:

- 'Advisory' committee whose members include an elected official from each municipality plus representatives from the Portland Police and Fire departments.
- 'Finance' committee consisting of one finance person from each municipality.
- 'User' committee that includes the Portland Police and Fire departments, Gresham Police and Fire, a police or fire representative from each of the other municipalities, an EMS representative and several citizens. User Board meets approximately every 2 months.
- Individual 'dispatch' committees for police, fire and EMS, which are chaired by agency representatives.

BOEC operates with a staff complement of over 100 personnel, including: a Director, Operations Manager, Coordinator (whose responsibilities include Client services), supervisors, 80+ communicators (call takers and dispatchers), and various technical, strategic and administrative supports that are relevant to the operations. Staff are represented by the American Federation of State, County and Municipal Employees (AFSCME).

The organizational structure includes the following additional positions for advice and support: a Fire Liaison officer and a System Status Controller (provided by AMR).

All communicators are trained to perform 9-1-1 call taking. Ninety percent (90%) of the communicators are cross-trained to dispatch all three functions (police, fire and EMS). New hires expect to undergo cross-training. The training curriculum begins with the police dispatch function

(which BOEC suggests is the most difficult) and subsequently advances to fire and EMS dispatch. According to BOEC, it typically takes a new hire about 18 months to complete the entire curriculum, and it is their experience that only 40% will successfully do so.

BOEC operates continuously 24 hours a day with a typical weekday daytime on-duty complement of about 26 personnel, which includes 15 call takers, 5 police dispatchers, 2 dispatchers for fire and EMS, 2 tactical dispatchers and 2 supervisors. The centre manages 700,000 calls a year, of which about 450,000 are incoming 9-1-1 calls with a split of about 70% Police, 20% EMS and 10% Fire.

BOEC operates from a facility owned by the City which is built to post-disaster construction standards. BOEC is equipped with a Versaterm CAD, an area-wide 800 MHz radio communications system (migrating to a P25 radio platform) and a PPDS records management system. The dispatch systems support GPS/AVL and MDTs. Most emergency services vehicles operating within the service area are equipped with such devices. Medical triage is carried out using a card index system developed expressly for BOEC by their Medical Director.

The CAD system is set up in a manner that will allow client agencies to individually manage their call data. The system will also allow clients to monitor field operations in real time. Clients may choose to view either their own service or all services throughout the entirety of the BOEC coverage area.

BOEC employs in-house IT systems support. Additional systems support is available by way of the City of Portland technical services bureau. On-site and off site backup solutions are in place to ensure the continuity of services during major outages.

The cost to operate BOEC is about $24 million a year. This figure includes $1.3 M in CAD debt servicing and $2.7 M in contingency.

The City of Portland provides about 80% of the requisite funding. The rest comes from the state (for 9-1-1 services) and from municipal partners whose funding contributions are pro-rated on the basis of their populations.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - Security of shared facility, CAD and radio communications systems - Shared systems contribute to improved interoperability of communications and streamlining of dispatch functions, improved inter-agency coordination of field operations, deployment of responder resources only when required, enhanced information sharing, and in turn improved responder safety. - Improved downstreaming of 9-1-1 calls and associated response times attributed to co-location and proximity of 9-1-1, police, fire and EMS communicator work stations. Also, attributed to a consolidation of SOPs for like agencies operating in the BOEC service area.	- The establishment of a consolidated emergency dispatch services centre was driven primarily by a desire to improve emergency dispatch services quality and interoperability. - Since BOEC has a highly visible profile and is recognized for being a well managed organization that delivers quality emergency dispatch services, one may conclude that the original objective has been attained. - Secure facility. Appears to be well managed. Good size and reasonable layout. - BOEC performance standards are based on the most stringent of the standards previously used by the individual dispatch operations. As a result, BOEC has attained dispatch service quality higher than that which the agencies were

Agency Comments	Our Observations
- Cross-training in multiple agency dispatch has increased efficiency of operations and flexibility to manage workload. Sufficient resources to accommodate planned events and short notice increases in workload. - BOEC performance standards are based on the most stringent of the standards previously used by the individual dispatch operations. Dispatch staffing was increased to ensure operational compliance. - Attained cost savings by sharing the same facility, security, CAD and radio systems, systems supports and data sources. Difficult to precisely define the savings because of the changes described above. - Through collaboration and cost sharing, BOEC has been able to secure and maintain leading edge technology replacement / upgrades. Critical success factors - BOEC did not come about by consensus (and likely would not have come about in that manner). It was mandated by City Council and its implementation was successful because the transition was led at an executive level. - The potential for cost containment should not be the principal going-forward objective for fully integrating emergency dispatch services. The primary going-forward objective should be the potential to improve dispatch services quality and interoperability. Cost containment is a potential added benefit to be derived over time.	capable of when operating separately. - Operational effectiveness / streamlining of dispatch functions also attributed to consolidation of SOPs for like agencies. - Considered a best practises model by multiple other jurisdictions. A must see facility. - Extrapolating the above information to the Greater Sudbury situation, one may conclude that attaining a fully integrated emergency dispatch service arrangement (for police, fire and EMS) will require garnering support at both the executive and elected official levels, to mandate a change despite relatively high start up costs and potential resistance to change by separate governance authorities, separate labour groups, etc. - The above was mentioned both by BOEC management and by other knowledgeable agencies with whom we consulted.

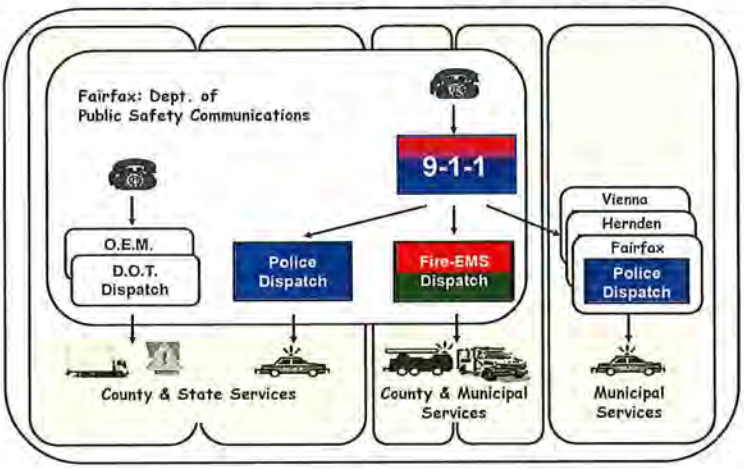
6.3.4 Fairfax County, Virginia: Dept. of Public Safety Communications

Managing about 1 million incoming 9-1-1 calls a year, the Fairfax Department of Public Safety Communications (DPSC), also known as Fairfax County 9-1-1, is one of the ten largest public safety communications centres operating in the United States.

DPSC is a fully integrated emergency communications service, delivering 9-1-1 on an integrated basis with dispatch services for police, fire and EMS for an area of about 435 sq. miles housing a resident population of 1.4 million which on weekdays increases to over 1.7 million.

Emergency communications services provided by DPSC include 9-1-1 call taking for Fairfax County, the City of Fairfax and the Towns of Hemden and Vienna, which also are located in the County, and dispatch services for:

Exhibit 6.10: Fairfax Dept. of Public Safety Communications



- Fairfax County Police department,
- Fairfax County Sheriff's department,
- Virginia State Police department,
- Fairfax County Fire and Rescue department, which delivers fire suppression and EMS on a consolidated basis, and
- Fire and Rescue departments operated by the City of Fairfax and the Towns of Hemden and Vienna. These departments also deliver both fire and EMS services.

DPSC does not dispatch the police departments of the City of Fairfax or the Towns of Hemden and Vienna. On receiving a 9-1-1 call requesting such police services, the DPSC operator will transfer the call to the respective police department dispatcher.

DPSC is housed in the McConnell Public Safety and Transportation Operations Centre (MPSTOC), a relatively new state-of-the-art public safety complex, which the County constructed in partnership with the state. In this, the two levels of government had the following objectives in common: to bring multiple agencies and functions together under one secure roof to enhance the effectiveness of public safety response, improve traffic congestion management, and better manage the response to and recovery from major emergencies.

The facility, which opened in 2008, is owned by the County. It is a highly secure facility that has been built to post-disaster construction standards. The facility is about 114,000 square feet and houses the DPSC, 3 other Fairfax County public safety agencies (Office of Emergency Management, Fire and Rescue Department and Police Department), and 2 state agencies (Operations Centre of the Virginia Department of Transportation and the Virginia State Police department).

The floor of the DPSC centre is about 12,000 square feet and about 3.5 stories high; this for noise suppression, lighting, air quality and ventilation. The floor is well laid out with clearly

delineated areas for 9-1-1 call taking, public safety communications dispatching and tactical coordination. Numerous monitors display relevant messaging. Co-located on the floor of the centre are dispatch functions for the Virginia Departments of Transportation, Fairfax County Office of Emergency Management, and other county/state public sector services. In total there are about 97 work stations, of which 60 are dedicated to public safety communications.

Prior to 2005, the responsibility for emergency dispatch resided in the Fairfax County Police Department. Therein, the function experienced a number of challenges, including: questions concerning the comprehensiveness of training / competency of communicators; impediments to communications coverage and reliability attributed in part to an underground facility location and in part to the available technology; budget constraints within a relatively large police organization; lack of recognition for the relatively small group of civilian employees working in the communications division (operating within a relatively large uniformed environment); and civilian employees lacking the opportunity for upward mobility within the police organization.

DPSC was established in 2005, on completion of a consultant's independent review that affirmed the above impediments. The consultant recommended that the emergency dispatch function should be set up as a separate department within a continuum of public safety services that would include police, fire, EMS and public safety communications.

Organizationally, DPSC is a department of Fairfax County, operating under the administrative oversight of a Director who reports to County Executive and the County's Board of Supervisors (i.e., the elected officials). The Director is a civilian with an emergency services background. Also reporting to the County Executive are the Police Chief, Fire Chief and the Director of the Office of Emergency Management. They and designates meet periodically to review the Centre's services, and issues and interests in common.

DPSC operates with a staff complement of over 170 personnel, including: a Director, Assistant Directors, Supervisors, communicators (call takers and dispatchers), and various technical, strategic, systems and administrative supports that are relevant to the operations.

All communications staff are cross-trained to perform multiple dispatch functions. Fifty percent (50%) of the communicators are fully cross-trained to take 9-1-1 calls and also to dispatch for police and fire-EMS. New hires expect to undergo cross-training. The training curriculum begins with 10 weeks of classroom followed by 10 additional weeks on the job with radio training.

DPSC operates continuously 24 hours a day with a typical on-duty complement of about 40 personnel per 12-hour shift. Staffs rotate through work stations at 4-hour intervals.

Client satisfaction is assured by way of: frequent communications and information sharing; user committees; police and fire representatives who serve as communications liaison officers; and an active employee driven Quality Assurance program (whose motto is "to catch people doing something right"), which includes periodic review of medical calls to affirm compliance to medical triage protocols.

DPSC is equipped with an Intergraph CAD which is used to dispatch both police and fire-EMS, and an area-wide 800 MHz radio communications system with common tactical channels. The dispatch systems support GPS/AVL and MDTs. Most emergency services vehicles operating within the service area are equipped with such devices. DPSC employs in-house IT systems support. Additional systems support is available by way of the County's corporate services. On-site and off site backup solutions are in place to ensure the continuity of services during major outages.

The cost to operate DPSC is about $44 million a year. The State contributes about 70% of the requisite funding, leaving the County's share at 30%.

LESSONS LEARNED

Agency Comments	Our Observations
Advantages - Security of shared facility, CAD and radio communications systems - Shared systems contribute to improved interoperability of communications and streamlining of dispatch functions, improved inter-agency coordination of field operations, deployment of responder resources only when required, enhanced information sharing, and in turn improved responder safety. - Improved downstreaming of 9-1-1 calls and associated response times attributed to co-location and proximity of 9-1-1, police and fire-EMS communicator work stations. - Cross-training in multiple agency dispatch has increased efficiency of operations and flexibility to manage workload. Sufficient resources to accommodate planned events and short notice increases in workload. - Attained cost savings by sharing the same facility, security, CAD and radio systems, systems supports and data sources. Attained service level (and coordination of services) that is higher but of a lesser cost than that which agencies are capable of attaining when operating separately. - Through collaboration and cost sharing, DPSC has been able to secure and maintain leading edge technology replacement / upgrades. Critical success factors - DPSC did not come about by consensus (and likely would not have come about in that manner). It was mandated by County Council and its implementation was successful because the transition was led at an executive level. - The potential for cost containment should not be the principal going-forward objective for fully integrating emergency dispatch services. The primary going-forward objective should be the potential to improve dispatch services quality and interoperability. Cost containment is a potential added benefit to be derived over time. - Start up costs can be high. The capital cost to construct the current facility was $157 million. The State paid 40%, and 60% was paid by federal agencies including Homeland Security and FEMA.	- The establishment of a consolidated emergency dispatch services centre was driven primarily by a desire to enhance the effectiveness of public safety response, and to better manage the response to and recovery from major emergencies. DPSC has repeatedly demonstrated that it has attained these objectives. - Considered a best practises model by multiple other jurisdictions. Highly visible profile. Well managed. Delivers high quality services. Highly secure facility. Good size. Excellent layout. A "must see" facility. - DPSC executives emphasize that advancement to the current state-of-the-art facility would not have been possible within a uniformed (police) environment. - A similar comment was made by Calgary PSC executives in respect of their evolution to a separate entity. In this, Halifax IES management have also expressed concurrence and a need for more flexibility (than that available within their police operating environment). - DPSC executives have also identified active employee engagement and career opportunities for upward mobility as critical success factors. - This also is a view expressed by Calgary PSC executives. Their model, which utilizes a uniformed Deputy from police or fire to serve at the helm (as either Commander or Deputy Commander) seriously hampers career upward mobility opportunities for civilian employees and adversely impacts middle and senior management retention. - Extrapolating the above information to the Greater Sudbury situation, one may conclude that attaining a fully integrated emergency dispatch service arrangement will require garnering support at the executive and elected official levels to mandate a change despite relatively high start up costs and potential resistance to change by separate governance authorities, separate labour groups, etc. - Similar remarks were made by knowledgeable professionals working in multiple centres.

Agency Comments	Our Observations
- Integrating public safety communications is the direction being promoted by federal and state authorities. In some states, 9-1-1 tax dollars are withheld from the emergency dispatch authority until they can demonstrate steps to this end. - Service quality, human resources (including recruitment, training, recognition and upward mobility), technology upgrades and budget were seriously hampered within a uniformed (police) environment. Advancement to the current state-of-the-art facility would not have been possible without a transitioning to a separate department (i.e., to separate governance within a public safety services continuum). - Active engagement (involvement), training and professional development of the employees is a critical factor to the organization's success. They need to know that there are career opportunities for upward mobility.	

7 Alternative Governance Arrangements

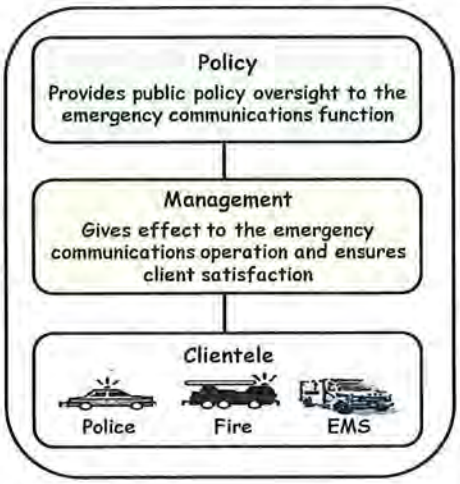
Our research indicates that the potential for cost savings should not be the principal objective for deciding to fully integrate emergency dispatch services. While cost savings may be derived over time by way of effective management and operations, the primary going-forward objective should be a desire to enhance the effective management of a public safety response to (and recovery from) an emergency. This includes a desire to improve interoperability of communications between and among agencies, to improve deployment and inter-agency coordination of field operations, to enhance information sharing, to improve responder safety and communications support, etc.

The above opinions were expressed by many of the knowledgeable and experienced agencies with whom we consulted. The following is another opinion that was expressed repeatedly. To attain these objectives, governance of the dispatch system needs to be structured in a manner that will facilitate oversight and cost-effective management and operations.

In this context, there are three governance levels to consider. They are:

- Policy, which provides public policy oversight to the emergency communications function.
- Management, which gives effect to the emergency communications operation and ensures client satisfaction. This includes transition leadership, facility design, organizational structure, supervision, administration, technology decisions, staff resourcing, training, risk management, quality management, etc.
- Communications services clientele, which in this context, are the recipients of the dispatch services whose field operations and capability to effect an expedient public safety response depend on the accuracy, timeliness and reliability of the information provided by the emergency communications operation, i.e.: the police, fire and EMS services.

Exhibit 7.1: Governance Levels

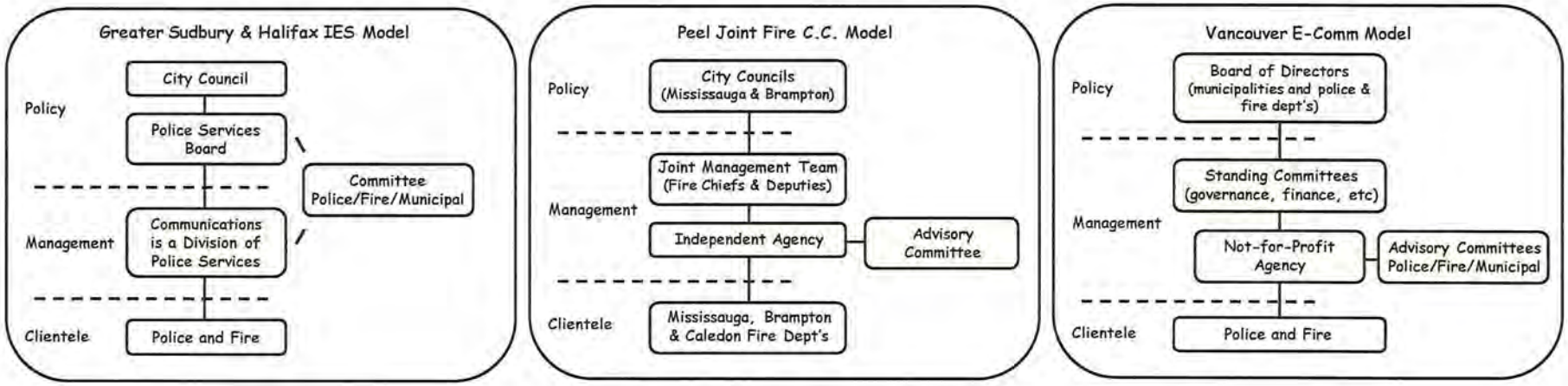


Our research, summarized in Exhibit 7.2 on the next page, reveals the following. Many partially consolidated dispatch systems for police and fire are managed by Police Services. Examples of this include: Greater Sudbury, Halifax, Kawartha Lakes and Chatham-Kent. Partially consolidated dispatch systems may also be structured to operate as independent business units. One such example is the joint fire communications centre in Peel Region, which dispatches for the fire departments of Mississauga, Brampton and Caledon. Another example is Vancouver E-Comm, which is a not-for-profit agency that dispatches police and fire for multiple municipalities.

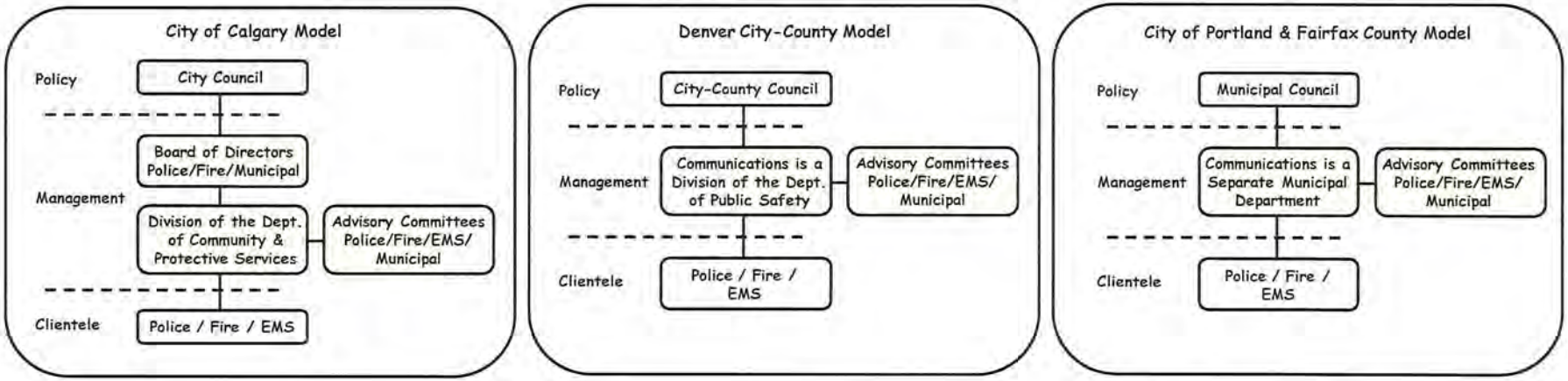
In contrast to the above alternatives, fully integrated emergency dispatch systems (for police, fire and EMS) are typically structured to operate in one fashion, that being as an independent business unit of the municipal corporation.

Exhibit 7.2: Alternative Governance Arrangements

Partially Consolidated Dispatch Systems



Fully Integrated Dispatch Systems



In Portland and Fairfax County the independent business unit is set up as a separate municipal department. In Calgary and Denver, it is set up as a division of a larger municipal department having responsibility for community and public safety services. Either way as an independent business unit, the management of the emergency communications operation is independent from the management of the emergency services (police, fire and EMS), and the working relationship as service provider and service recipient is well defined.

As discussed previously in Section 6, the Fairfax Department of Public Safety Communications (DPSC) is a fully integrated emergency communications service (9-1-1, police, fire and EMS) which has a highly visible industry profile and is considered by multiple jurisdictions to be a best practises model, delivering quality services from a secure facility of good size and excellent layout. Fairfax County DPSC is often referred to as a "must see" facility.

Executives of Fairfax County DPSC indicate that prior to 2005 the responsibility for emergency dispatch resided in the Fairfax County Police Department and while in that environment, service quality, human resources (including recruitment, training, recognition and upward mobility), technology upgrades and budget were seriously hampered. This, they attribute to a variety of factors including: competing priorities throughout the Police department; competing budget requirements within a relatively large police organization; lack of recognition for civilian employees of the communications division operating within a largely uniformed environment; and civilian employees lacking the opportunity for upward mobility within the police organization.

In their view, advancement of emergency communications to the current state-of-the-art, fully integrated operation would not have occurred without a change in governance to a stand-alone business unit within the Fairfax County administration. Fairfax County Executives also cite the opportunity for employee engagement and upward mobility as two critical factors contributing to the success of their current operation.

Calgary PSC Executives expressed experiences similar to those of Fairfax, and while they speak highly of their own existing municipal business unit model, they also are quick to point out some of its less desirable features. One in particular, is its use of a uniformed Deputy from police or fire to serve at the helm (as either Commander or Deputy Commander), which in their view adversely impedes upward mobility for middle and senior management.

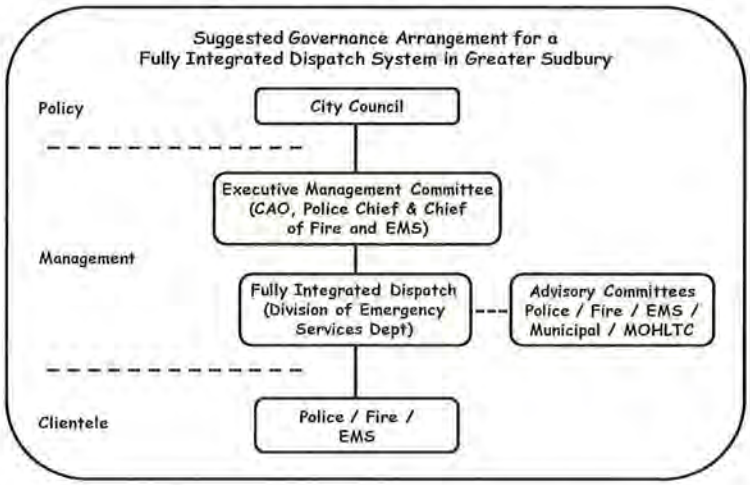
Need for increased flexibility beyond that of a police services environment was also expressed by knowledgeable professionals working in Halifax, Vancouver, Denver and Portland.

Extrapolating the above experience to the Greater Sudbury situation, one may readily conclude the following: that if the intent is to advance from the current partially consolidated dispatch system to one that delivers EMS dispatch on a fully integrated basis with 9-1-1 and the dispatch services for police and fire then, based on the best practices experience of other North American jurisdictions, the preferred governance arrangement is one in which the fully integrated system is structured to operate as a independent business unit within the City's administration, as either a stand-alone department or a separate division of a larger department.

Exhibit 7.3 (next page) presents a governance option which in our opinion merits consideration. In this option, the fully integrated emergency dispatch system would function as a separate division of the Greater Sudbury Emergency Services Department.

The principal features / advantages associated with this option are listed below.

Exhibit 7.3
Suggested Governance Arrangement



The Emergency Services Department of Greater Sudbury already has responsibility for delivery of Fire, EMS and Emergency Management services. In this respect, it would be reasonable to add emergency communications to its portfolio.

The resulting governance arrangement would be similar to those of other fully integrated dispatch systems in Portland and Fairfax where emergency communications operates as a separate municipal department; in Calgary where emergency communications functions as a division of the Department of Community and Protective Services; and in Denver where it functions as a division of the Public Safety Department.

The resulting governance arrangement will provide increased flexibility to align all aspects of the emergency communications operation to one single-purpose mandate dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality, and capable of expediently executing a coordinated multi-agency response to an emergency. This would include facility design, organizational structure, supervision, administration, technology decisions, staff resourcing, training, cross-training, risk management, quality management, etc. Capital and operating budgets for the business unit would be similarly aligned to these single-purpose objectives.

Operating as a stand-alone business unit will make it possible to establish an operating culture, policy and a comprehensive set of SOP's that promote/support interoperability of communications among emergency services, to complement their field interactions during routine day-to-day operations and in the management of large scale incidents requiring a multi-agency response.

Operating as a stand-alone business unit (with the single-purpose mandate described above) increases the possibility to establish a work environment, business supports and technological systems that are conducive to the expedient delivery of emergency communications and dispatch functions. This would include consolidation to a single communications centre of appropriate size, design and layout; and preferably, shared use of one state-of-the-art CAD system, as well as one set of systems for telephone and radio communications.

This governance option increases the likelihood of establishing an accountability framework that promotes risk management and continuous quality improvement as basic business practices, potentially to the extent that the City's dispatch system will be regarded by peers as an industry leader and its operations cited as industry Best Practices.

This option greatly simplifies the governance arrangement at the policy level relative to the present model, in which accountability for the dispatch system is split between the Greater Sudbury Police Services Board, a management committee (consisting of the CAO, Police Chief and Fire Chief) and City Council. The preferred governance arrangement assigns full accountability for the dispatch system to City Council.

This governance option assures quality decisions pertaining to operations and budget by way of an Executive Management Committee desirably consisting of the following executives: Chief Administrative Officer (serving as Chair), Chief of Police, and the Chief of Fire and Paramedic Services.

This governance option also assures client satisfaction by way of joint and individual advisory committees comprised of police, fire and EMS. Similarly, an advisory committee will serve as forum for engagement with MOHLTC.

Last, but not least, the preferred governance arrangement will give clear recognition to the role of emergency communicators as the 'first' of the first responders within the continuum of police, fire and EMS public safety services.

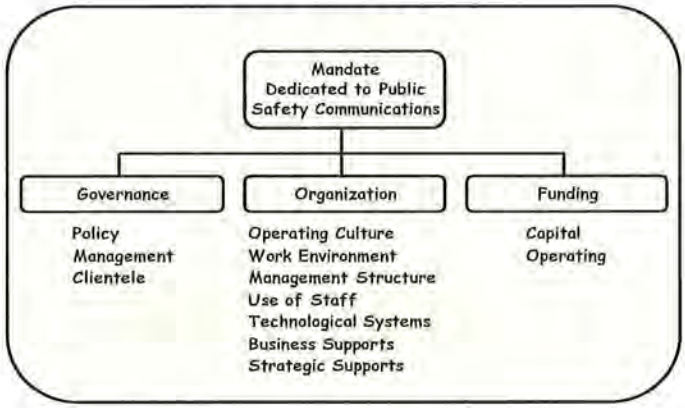
8 Lessons Learned / Best Practices Attributes

Best practices are generally defined as practical approaches and standard published operating methods in public sector organizations that function exceptionally well when measured against peer group performance i.e., they have been validated to be reliable through experience. In this regard, best practices may be applied to all organizational elements including governance structures, business processes, operating practices and outcomes measurement systems.

By way of the research into alternate dispatch systems we have identified a number of best practices attributes for a contemporary emergency dispatch operation that will determine the success (or failure) of any endeavour to transition Greater Sudbury's existing 'partially consolidated' dispatch model to a 'fully integrated' emergency communications services system.

The best practices attributes, which in our opinion apply to Greater Sudbury's proposed fully integrated dispatch delivery system are presented below.

Exhibit 8.1
Critical Success Factors



Single-Purpose Mandate Dedicated to Public Safety Communications

The dispatch system is guided by a single-purpose mandate that is dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality and capable of expediently executing a coordinated multi-agency response.

Governance, Organization and Funding Give Effect to the Mandate

All aspects of the emergency communications operation (including governance, facility design, organizational structure, supervision, administration, technology decisions, staff resourcing, training, risk management, quality management, etc) are aligned to the single-purpose mandate and objectives set out above. This is based in policy and in a comprehensive set of SOP's.

Capital and operating budgets are similarly aligned to these single-purpose objectives. Funding for the operations reflects the true cost of the services being delivered, and both the services and funding are sustainable.

Governance Structure Supports Effective Management and Operations

Based on the experience of North American jurisdictions, the preferred governance arrangement is one in which the fully integrated system operates as a stand-alone business unit within the greater City's administration.

Operating as a stand-alone business unit independent of the clientele operations will provide increased flexibility to align the operation in its entirety to the delivery of public safety

communications. Also, as discussed previously in Section 7, this governance arrangement will give recognition to the importance of emergency communications within the continuum of public safety services along with police, fire and EMS.

Service Commitments are Set Out in an Agreement(s)

Authorities, services and other terms agreed to by the parties are set out in a binding agreement(s). This would include terms and commitments pertaining to such items as: roles and responsibilities of the parties to the agreement; the dispatch services; executive and operational oversight; the facility, furbishing and systems; staff resourcing; staff training and professional development; operational standards, targets and regulations; call data records management; information sharing and reporting; risk and quality management; treatment and apportionment of capital and operating costs; etc.

In this instance, one particular service agreement is that between Greater Sudbury and MOHLTC is respect of the ambulance dispatch. This would be consistent with the arrangements instituted in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the EHS Branch of the Ontario MOHLTC.

Client Expectations Ensured by Committee, Interaction and Information Sharing

The reference herein is to the establishment of a Management Committee to ensure the quality of decisions pertaining to operations and budget. In the suggested governance arrangement shown previously in Exhibit 7.3 the Management Committee would potentially consist of the following executives: the City's Chief Administrative Officer (serving as Chair), Chief of Police, and the Chief of Fire and Paramedic Services.

Client satisfaction would be further assured by such means as: joint and individual advisory committees comprised of police, fire and EMS clientele (i.e., the recipients of the services); and frequent interaction by way of meetings; written and verbal communications. Similarly, an advisory committee will serve as forum for engagement with MOHLTC.

A further means to ensure client satisfaction would be to augment the communications centre organizational structure with advice and support positions that are staffed by subject matter experts drawn from the respective agencies (police, fire and EMS). This approach has been adopted by several North American dispatch centres.

Operating Culture Promotes/Supports Interoperability of Communications

Operating culture promotes/supports interoperability of communications among emergency services, to complement their field interactions during routine day-to-day operations and in the management of large scale incidents requiring a multi-agency response. This also is based in policy and in a comprehensive set of SOP's.

Conducive Work Environment, Business Supports and Technological Systems

Work environment, business supports and technological systems are conducive to the expedient delivery of emergency communications and dispatch functions. This would include consolidation to a single communications centre of appropriate size, design and layout; and preferably, shared use of one state-of-the-art CAD system, as well as one set of systems for telephone and radio communications.

Co-Location of Dispatch Services in One Communications Centre

Within Greater Sudbury's existing partially consolidated dispatch model, 9-1-1 call taking and dispatch for police and fire are co-located in one communications centre, sharing a secure facility, CAD and radio communications systems, communications infrastructure (e.g., 9-1-1 lines and radio towers), common data sources (e.g., mapping), and on-site and off-site backup solutions. Moreover, the call taker, dispatcher and supervisor work stations are situated adjacent to one-another. This has improved downstreaming of 9-1-1 calls and response times, enhanced information sharing, and promoted collaboration and teamwork.

For such advantages to extend to a fully integrated dispatch system, EMS dispatch should also be co-located in the one communications centre along with 9-1-1 and the dispatch services for police and fire.

Additional benefits that may be derived from a co-location of EMS dispatch with 9-1-1 and police and fire dispatch include: (a) opportunity to establish a single management oversight structure; (b) opportunity to consolidate communications resources at all levels; (c) opportunity, by way of communicator proximity, to improve coordination of field operations across all 3 agencies; and (d) opportunity for all agency dispatch functions (police, fire and EMS) to collectively contain costs from shared use of facility, security, CAD and radio communications systems, and staff resources.

Dispatch Delivery from a Single Purpose-Built Communications Facility

Co-location of the dispatch services, including EMS dispatch, also presents an opportunity on a shared cost basis to construct a single purpose-built communications facility similar to those in Vancouver (E-Comm), Portland (BOEC) and Fairfax County (PSC facility complex) that is: designed to post-disaster standards; of size, design and layout to comfortably serve the needs of multiple personnel; and equipped with resilient operational technologies, security, back-up power and built-in system redundancies to serve the dispatch needs of the participating emergency services.

Shared Use of CAD, Telephone and Radio Communications Systems

Research shows that contemporary CAD systems (by Versaterm, Intergraph, etc) are significantly more flexible and supportive of multiple agency operations on a shared basis than those previously in use 5 to 10 years ago. Contemporary systems can be configured to automatically create call records by user (i.e., police, fire and EMS). Security and access to data can be similarly configured to user requirements; and agencies can respectively adjust their own operational parameters.

Research further shows that shared use of CAD and radio systems improves interoperability of communications, enhances information sharing and responder safety, streamlines dispatch functions, and improves deployment and inter-agency coordination of field operations. Also, that dispatch agencies (police, fire and EMS) may collectively attain cost savings by sharing systems, systems supports and data sources (as well as facility and security). They also may attain a service level that is higher but of a lesser cost than that which dispatch agencies are capable of attaining when operating separately.

Delivery of Dispatch Services on an Integrated Basis

Full (complete) integration is attained by consolidating Police, Fire and EMS dispatch efforts and services into a single public safety communications operation. The fully integrated service is

designed to operate in a manner that will respond efficiently and cost-effectively to the emergency dispatch needs of all of the agencies.

Key features include operating out of a single communications centre; under a single mandate defined by the participating agencies; under a single management structure that oversees the full range of emergency communications operations (police, fire and EMS); having one service area defined by the collective jurisdictional authorities of the participating agencies; and operating with one comprehensive set of programs and protocols.

The communications centre staff generally are employed by the integrated service (i.e., there is only the one employer) and they are represented by a single bargaining agent.

The integrated service operates with one training program that covers the dispatch needs of all participating agencies, and some or all of the communicators are cross-trained to dispatch multiple agencies. This significantly increases management's flexibility to schedule staffing and it serves as a cost-effective means by which to respond to unplanned variations in communications workload.

Communications Centre is Adequately Resourced to Meet Demand

Communications centre is adequately resourced to meet peak/off peak demand and recognized standards for service delivery. This includes the use of full time and relief staff to respond to workload fluctuations due to absenteeism, special events coverage, etc.

Also includes having access to adequate support resources relevant to the operations (i.e., technical, systems, strategic, administrative, etc) by way of both in-house resources and those available through third-party contracts.

Senior Lead having Management and Emergency Services Experience

Executive in charge has the requisite experience to serve as organizational lead. Executive's background may be either as a uniformed officer or a civilian. Must be able to demonstrate professional capabilities to serve as senior management at the helm of the organization (e.g., as Director, CEO, etc).

Either the Executive or their deputy(s) will have senior management experience in an emergency services organization. This could be police, fire, EMS or another emergency communications services organization.

Supervision is Based on Acceptable Span of Control

On-duty supervision is based on acceptable span of control that will ensure quality, compliance and standards. This includes supervisors and management having authority to assign/reassign communicator resources as needed to accommodate fluctuations in demand. Said authority is to be recognized by the provisions of any applicable collective agreement(s).

Backup Solutions to Ensure Uninterrupted Services

The system includes on-site and off site backup solutions to ensure the ongoing provision of uninterrupted 9-1-1 call taking and emergency dispatch services when the provision of such services during a power outage, loss of telephone communications, an unplanned evacuation of the communications centre, etc.

This would include such items as: backup power supply, redundant CAD, access to systems and technical supports, in-house amenities to support the needs of staff during an extended stay, backup communications facility designed to recognized standards, and comprehensively documented emergency backup/evacuation protocols that are tested periodically.

Responder Services Have Direct Access to their Call Records

The CAD system is set up in a manner that allows the responder services (police, fire and EMS) to monitor field operations in real time, and to individually manage their respective call data; for this purpose using their own records management systems.

Accountability Framework Promotes Risk and Quality Management

The operation of the centre, the processes and outcomes are examined on an ongoing basis by way of risk and quality management programs that are based on industry best practice models.

For such purposes this would include the use of outcome-based performance objectives, standards and procedures to measure and assess performance quality; periodic quality audit of a select number of calls; and periodic appraisal of communicators and supervisors. This also would include investigation of incidents and complaints, actions taken and recommendations.

System that is Progressive and Forward Looking in its Operations

Continuous quality improvement is actively promoted as a basic business practice, potentially to the extent that the City's dispatch system will be regarded by peers as an industry leader and its operations cited as industry Best Practices.

In a contemporary emergency dispatch operation this would include periodic reviews, planning ahead, benchmarking to peers and working collaboratively with clientele (police, fire and EMS) to address issues of common interest.

9 Capital and Operating Costs

The following messages, which were presented previously in Section 7 of this report, are worth reiterating. The potential for cost savings should not be the principal objective for deciding to fully integrate emergency dispatch services. While cost savings may be derived over time by way of effective management and operations, the primary going-forward objective should be a desire to enhance the effectiveness of a public safety response to better manage the response to and recovery from major emergencies. These opinions were expressed repeatedly by knowledgeable and experienced agencies with whom we consulted.

The above notwithstanding, the scope defined by the study work statement requires that the capital and operating costs to fully integrate the City's emergency communications services systems be investigated. To this end, we offer the information set out below.

9.1 Capital Costs

Following commencement of the integration process there is likely to be an initial period during which EMS dispatch will continue to operate from its current location at the McFarlane Lake Government Complex while police communications continues to operate from its current location at GSPS headquarters in downtown Sudbury, each with CAD, telephone and radio communications systems that are independent of one-another. During this period, there will be few if any requirements for major capital investments.

This notwithstanding, for a comprehensive transition of the existing 'partially consolidated' dispatch model to a 'fully integrated' emergency communications services system, decisions concerning the following items will have to be addressed at some point in the process, and these decisions may have an influence on capital costs:

- Consolidation to a single communications centre of appropriate size, design and layout
- Shared use of CAD, telephone and radio communications systems
- Dispatch delivery from a single purpose-built communications facility that is designed to post-disaster standards and equipped with resilient operational technologies, security, back-up power and built-in system redundancies.

In this respect we offer the following information derived from our best practices research. Communications facility space (including aisles, stairs, common areas, etc) averages about 550 square feet per work station; and the cost to construct and furnish a facility averages about $1,000 CAN per square foot (in 2014 dollars).

Exhibit 9.1: Estimated Capital Costs

Service	Year of Construction	Approximate Size (Sq Ft)		Work Stations	Est'd Capital Cost ($ M CAN)	
		Facility	Comm'ns Floor		In Year of Const'n	2014 Dollars
Calgary PSC	2006	23,000	13,800	67	$20	$25
E-Comm	1998	70,000	10,000	65	$20	$32
Halifax IES	1996	10,000	3,600	16	$5	$9
Fairfax PSC	2009	147,000	12,000	94	$138	$159
Portland BOEC	1994	50,000	5,000	30	$13	$24
Toronto Fire	2001	18,000	4,000	16	$20	$29

The reader is advised that for the purposes of this business case assessment our comparison of capital costs was conducted at a high level. We did not drill down to ascertain specific details; albeit, we are of the understanding that the capital costs shown in Exhibit 9.1 generally include construction and furnishings listed below. The cost of land acquisition, radio communications system and off site backup facility construction is excluded. To convert prior year values to 2014 dollars we applied a factor of 3% per annum.

- Building construction
- Security systems
- Furnishing call taker, dispatcher and supervisor workstations
- Furnishing training workstations
- Furnishing offices, training rooms, server rooms, conference rooms, common areas, etc
- Radio and telephone equipment
- Computer hardware, including CAD hardware, MVT's and AVL's
- Computer software
- Mission critical on-site backup power supply and systems

For Greater Sudbury we have assumed a future consolidated communications centre of about 9,300 square feet, derived by applying a facility space requirement of 550 square feet per work station to a consolidated requirement for 17 work stations. [2]

Applying a facility cost of $1,000 per square foot (as derived from the research), we estimate a little over $9 million (in 2014 dollars) to be the approximate capital cost to construct a consolidated communications centre of this size. In developing this estimate we have not investigated the full potential for staff cross-training (or related financial savings); nor have we made any allowances for levering existing furnishings, telephones, radios and computer hardware. Our cost estimate also excludes land acquisition, major changes to radio communications systems and off site backup facility construction.

A related question of particular relevance is whether the City would be responsible to pay the entire capital cost of consolidating the two centres, or whether it would be paid for in whole or in part by the province (e.g., by way of MOHLTC). In this, our understanding of past practices is that the MOHLTC has covered the capital construction costs in other municipalities (e.g., Toronto, Ottawa and Niagara).

Moreover, as was suggested previously in Section 3, if the MOHLTC is interested in identifying an ambulance communications arrangement that could serve as a preferred Ontario model then this initiative by Greater Sudbury could well be considered as a pilot project, and based on past provincial practices pertaining to pilot projects (such as the Niagara ACS), capital costs would be eligible for full provincial subsidy.

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[2] The consolidated requirement for 17 work stations is derived as follows. GSPS communications centre is currently equipped with 8 work stations (3 for call taking, 4 for dispatching and 1 for the on duty supervisor). Sudbury CACC is assumed to house 6 work stations (based on peak period shift staffing of 5 communicators plus a supervisor). Therefore the current total is 14 work stations.

Assuming that a fully integrated communications operation of this size would not require more than one on duty supervisor per shift, then the number of work stations may be reduced by one. Similarly, the number may be reduced by an additional work station if we assume that some of the communicators working in the centre will be cross-trained to perform multiple dispatch and that they will have the time available to assist one-another during peak period shifts. Applying these changes to the above results in a revised total of 12 work stations

To the revised total we have added 2 additional work stations that would be dedicated to training and 3 additional work stations as an allowance to accommodate future growth in demand. This brings the revised total to 17 work stations.

9.2 Operating Costs

Based on the research that we have conducted, the cost to deliver the full range of emergency communications services in Greater Sudbury is approximately $6.5 million a year. This includes $3.5 million that the City pays for 9-1-1 and police-fire dispatch, and $3 million that the MOHLTC pays for ambulance dispatch.

This works out to about $36 per capita which, as shown by Exhibit 9.2, is higher than the per capita costs to operate fully integrated dispatch systems in Calgary, Denver, Portland and Fairfax County Virginia. In most of these jurisdictions the costs is $27 to $28 per capita CAN.

In deriving the cost estimates for the U.S. jurisdictions we adjusted the service providers' data to account for the difference in U.S. and Canadian wage rates.

Exhibit 9.2: Annual Operating Costs

	Annual Operating Cost ($ M CAN)	
	Total	Per Capita
Greater Sudbury		
- 9-1-1, Police & Fire Dispatch	$3.5	$21
- Ambulance Dispatch	$3.0	$15
- Total	$6.5	$36
Calgary PSC	$34.0	$28
Denver 911	$14.4	$27
Portland BOEC	$20.0	$35
Fairfax County PSC	$44.0	$27

The costs shown in Exhibit 9.2 generally include employee salaries, wages and benefits, as well as operating expenses such as supplies, energy costs, training allowances and contracted services.

The reader is again advised that for the purposes of this business case assessment our comparison of costs was conducted at a high level. We did not drill down to ascertain how service providers treat/budget for such items as: internal IT support services capabilities, level of corporate support, degree of oversight, emergency backup capabilities, or capital debt servicing for facilities, systems or equipment. We understand that in such matters the practices can differ significantly.

This notwithstanding, the figures presented above indicate that the cost to deliver emergency communications services in Greater Sudbury can be reduced by fully integrating EMS dispatch with the existing dispatch system for 9-1-1, police and fire. Moreover, the figures imply that relative to current costs the potential cost savings can be in excess of 20 percent, which in Greater Sudbury would translate to a potential savings of $1 million or more a year.

Given the potential significance of this finding, we felt that that the above analysis requires verification. For such purposes we offer an additional assessment, which is based on the assumption that full integration will enable consolidation to a single management structure and cross-training of some of the communicators to perform dispatch for police, fire and EMS.

The additional assessment, which is presented on the next page, is structured in two parts:

a) A review of current staffing complements relative to established standards / peer comparisons, where each service continues to operate independently; and

b) Analysis of a 'fully integrated' staffing arrangement derived from a review of established standards / peer comparisons.

The current staffing complements, derived from information provided by GSPS and the MOHLTC, are shown in Exhibit 9.3. The current staffing complement at Sudbury CACC totals 32 full time equivalents (FTE). The GSPS communications division budget provides for 41 staff, which includes 8 part time communicators. For this assessment, we have converted the part time figure to FTE using a 2 to 1 ratio, resulting in a total staffing at GSPS of 37 FTE.

Exhibit 9.3
Current Staffing Relative to Standards and Peers
(each service continues to operate independently)

	EXISTING FTE			FTE FROM STANDARDS & PEERS		
	GSPS	CACC	TOTAL	GSPS	CACC	TOTAL
Manager / Staff Sergeant	1	1	2	1	1	2
Operations Manager	--	1	1	--	0	0
Supervisors	4	4	8	4	4	8
Communicators - Full Time	28	16	44	28	10	38
Communicators - Part Time	4	7	11	4	3	7
Quality Programs Officer	--	1	1	--	0	0
Liaison and Policy Officer	--	1	1	--	1	1
Administrative Support	--	1	1	--	1	1
Total	37	32	69	37	20	57

Exhibit 9.3 also shows staffing complements for the GSPS and Sudbury CACC derived from established standards and peer comparisons, where each service continues to operate independently. The values shown are explained below.

GSPS: Peer comparisons (i.e., comparisons to other communications centres that dispatch police and fire on an integrated basis e.g., Thunder Bay, Halifax IES and E-Comm) support GSPS' existing staffing complement. GSPS manages 56,000 incoming 9-1-1 calls a year. At the current staffing level of 28 full time communicators, this translates to an average workload of 2,000 calls per communicator per annum, which is comparable to those of peers.

Sudbury CACC: Sudbury CACC manages 40,000 ambulance calls a year. This includes priority codes 1 to 4 and a half-count for standby code 8. At the current staffing level of 16 full time communicators, this translates to an average workload of 2,500 calls per communicator per annum. The workload standard employed by MOHLTC is one full time communicator per 4,200 calls plus 36 percent for backfill and trainees. Applying the Ministry's standard to Sudbury CACC results in the following requirements: 10 full-time communicators and 3 FTE for backfill and trainees.

MOHLTC also employs a standard that requires one Operations Manager when the communicator complement (including backfill) exceeds 15 FTE or when the call volume exceeds 50,000 per annum. The Ministry uses the same standard for filling the Quality Programs Officer position. Applying the Ministry's standard to Sudbury CACC suggests that neither an Operations Manager nor a Quality Programs Officer is required.

Our analysis of a 'fully integrated' staffing arrangement is presented in Exhibit 9.4 (next page). The basic features of this 'fully integrated' staffing arrangement are set out below.

- Full integration will enable consolidation to a single management structure. Therefore, the number of managers is reduced to one and the number of Supervisors is reduced to four.

- Since the total number of staff will exceed 50 FTE, an Operations Manager / Senior Supervisor position is maintained.

- Given the importance to maintain quality and to assure confidence in each communicator's capabilities, the staffing arrangement maintains a Quality Programs Officer position and introduces an officer dedicated to training, who could double as Supervisor when required.

- As a basis for our analysis we have adopted as the minimum communicator complements, those that were suggested by the stand alone analysis in Exhibit 9.3 (i.e., 38 full-time communicators and 7 part-time FTE). However, we have increased the full-time communicator complement by 3 additional personnel beyond the suggested requirement to a total of 41; this to provide management with greater flexibility to manage staffing rotations.

- We also have assumed that almost 20% of the full-time communicators will be cross-trained to perform the full range of 9-1-1 call taking and dispatch functions for police, fire and EMS (i.e., 7 full-time communicators will be cross-trained). These figures were chosen based on our research of best practices which suggests that it is unnecessary to cross-train all communicators, that cross-training large numbers of personnel is overly-challenging and that cross training 15% to 20% of the communicators will provide management with reasonable flexibility to manage staffing rotations.

Exhibit 9.4
Analysis of a Fully Integrated Staffing Arrangement

	GSPS & CACC (STAND ALONE)		GSPS & CACC (FULLY INTEGRATED)		
	CURRENT FTE	STDS & PEERS FTE	FTE	CHANGE REL. TO CURRENT	$ CHANGE
Manager / Staff Sergeant	2	2	1	-1	($85,000)
Op'ns Manager / Sr. Supervisor	1	0	1	--	--
Supervisors	8	8	4	-4	($300,000)
Training Officer / Supervisor	--	--	1	1	$75,000
Communicators - Full Time					
- 9-1-1, Police & Fire / EMS	44	38	34	-10	($700,000)
- Fully Cross-Trained	--	--	7	7	$490,000
- Total	44	38	41	-3	($210,000)
Communicators - Part Time	11	7	7	-4	($280,000)
Quality Programs Officer	1	--	1	--	--
Liaison and Policy Officer	1	1	--	-1	($70,000)
Administrative Support	1	1	1	0	--
Employee Benefits	--	--	--	--	($160,000)
Total	69	57	57	-12	($1,030,000)

The analysis presented in Exhibit 9.4 affirms our earlier findings (derived from a best practices review) that the cost to deliver emergency communications services in Greater Sudbury can be reduced by fully integrating EMS dispatch with the existing dispatch system for 9-1-1, police and fire; and that relative to current costs, the potential cost savings can be in excess of 20 percent, which in Greater Sudbury would translate to a potential savings of $1 million or more a year.

The reader is advised that the staffing arrangement shown in Exhibit 9.4 was selected solely to illustrate the potential to reduce costs when operating in an integrated manner. It is not based on an in depth review of operational performance which could lead to a more efficient

organizational arrangement. The wages used to calculate the potential cost savings were selected for illustrative purposes. While the values chosen are close to the remuneration scales used by Greater Sudbury and MOHLTC, they may not align precisely.

The reader is also reminded that the above assessment is intended simply to illustrate that the cost to deliver emergency communications services in Greater Sudbury can be reduced by fully integrating EMS dispatch with the existing dispatch system for 9-1-1, police and fire. More precisely, this assessment should not be interpreted as a suggestion to downsize communications staffing as an initial step in an integration process.

As stated repeatedly in prior sections of this report, the potential for cost savings is not the principal objective for fully integrating the services. The primary objective is to enhance the effectiveness of a public safety response to better manage the response to and recovery from major emergencies.

Further of consideration, is that it may take a number of years to establish a fully integrated dispatch system and it also may take a number of years to attain the full cost savings. Also, the amount of money to be saved will depend on a number of factors including management's capability to effectively operate the centre, and the choice of service level. As was indicated by several public safety communications agencies including Calgary, Portland and Fairfax, their choice of service level for the entire fully-integrated operation, is based on the most stringent of the standards used previously by the individual dispatch operations. These decisions were taken with a clear going-forward understanding that resourcing would need to be increased beyond initial expectations and consequently, the potential to save costs through integration would be lessened.

In this context, the reader is reminded that Greater Sudbury's proposal to assume operational responsibility for EMS dispatch is consistent with ambulance dispatch arrangements instituted in Toronto, Ottawa, Niagara and Timmins, where in each instance the municipality manages the EMS dispatch function on behalf of the Ontario MOHLTC, and for such services the Ministry pays 100 percent of the costs. The proposal assumes that a similar arrangement will apply to Greater Sudbury, whereby MOHLTC will continue to pay 100 percent of both the capital and operating costs of Greater Sudbury ambulance communications. In this context, as part of any going-forward process, it will be important for the City and MOHLTC to also clearly define the basis on which any future cost savings will be apportioned.

10 Going Forward

Drawing from best practices research we have identified two factors that are critical to the successful implementation of a fully integrated emergency dispatch system.

First, a change of this nature, with its inherent challenges to individual services, labour groups, etc, will not evolve informally. It must be mandated. The decision must come from top (e.g., from municipal Council, provincial or state authority) with a clear going-forward understanding that it may take several years to fully complete the transition.

Second, the change requires an Executive Lead (a champion) who is prepared to take an active role working with the participants, stakeholders and elected officials over a period of several years to see the transition through to its ultimate state.

The above notwithstanding, in our opinion Greater Sudbury's transition to a fully integrated emergency dispatch system should not be overly difficult given the City's prior experience operating an EMS service, its prior experience operating a consolidated police and fire dispatch, and its reputation for constructive, consultative and cooperative employee relations.

Drawing from the research we also have concluded that if Greater Sudbury's intent is to advance from the current partially consolidated dispatch system to one that delivers EMS dispatch on a fully integrated basis with 9-1-1 and the dispatch services for police and fire then, based on the experience of other North American jurisdictions, the preferred governance arrangement is one in which the fully integrated system is structured to operate as a stand-alone business unit within the City's administration.

In Section 7 we presented a governance option in which the fully integrated emergency dispatch system would function as a separate division of the Greater Sudbury Emergency Services Department. In this, our rationale is that the Emergency Services Department already has responsibility for delivery of Fire, EMS and Emergency Management services, and that it would be reasonable to add emergency communications to this portfolio.

This preferred governance arrangement would be similar to those of other fully integrated dispatch systems in Portland and Fairfax where emergency communications operates as a separate municipal department; in Calgary where emergency communications functions as a division of the Department of Community and Protective Services; and in Denver where it functions as a division of the Public Safety Department. It will provide increased flexibility to align all aspects of the emergency communications operation to one single-purpose mandate dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality, and capable of expediently executing a coordinated multi-agency response to an emergency. It also will give clear recognition to the role of emergency communicators as the 'first' of the first responders within the continuum of police, fire and EMS public safety services.

By taking on the ambulance dispatch function, Greater Sudbury will be assuming accountability medically, financially and operationally for the Ministry's performance standards pertaining to ambulance dispatch and for the provision of a seamless ambulance response.

In this respect, a major challenge will be not only to sustain these important provincial policy interests but also to demonstrate this on an ongoing basis throughout the entirety of the transition process and beyond. To such ends, the transition will need to be carried out in a manner and pace that accommodates transparency and the MOHLTC's ability to review and

comment on work in progress. This would include the City's use of in-house project tracking and management information systems to monitor activities on a continuous basis, proactively identify potential risks, make decisions and take corrective actions as required.

In this, it is our view that the proposed change to a fully integrated dispatch system arrangement will have to be implemented in stages. A suggested staging plan is shown in Exhibit 10.1.

The plan includes an interim stage (potentially of 1 to 2 years duration) during which there would be only one 'major' organizational change, that being the Emergency Services Department's assumption of responsibility for ambulance communications. There would be no other significant organizational changes that could potentially detract from the City's singular purpose at the outset of the transition process, that being to clearly demonstrate its capability to effectively manage EMS dispatch.

During this interim stage, delivery of the ambulance communications function would continue temporarily from the present location at the McFarlane Lake Government Complex, GSPS would continue to manage 9-1-1 and police-fire dispatch from its communications centre at police headquarters, and both communications operations would report to City Council by way of a newly established Executive Management Committee.

Exhibit 10.1
Staging Plan

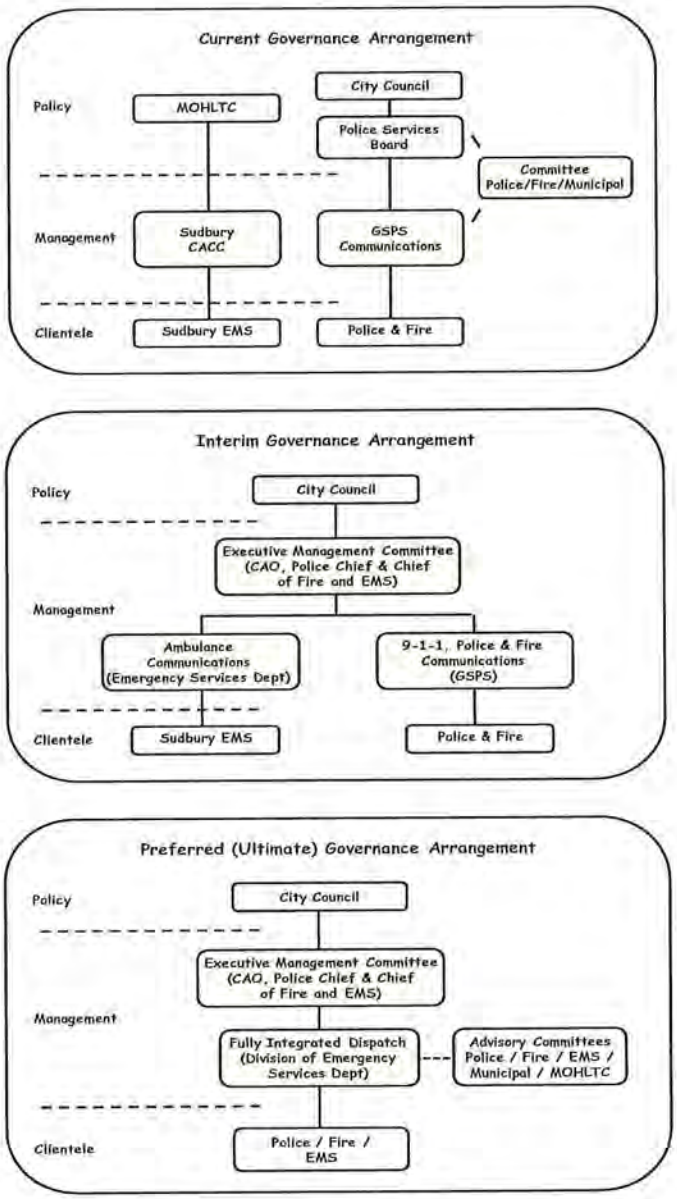
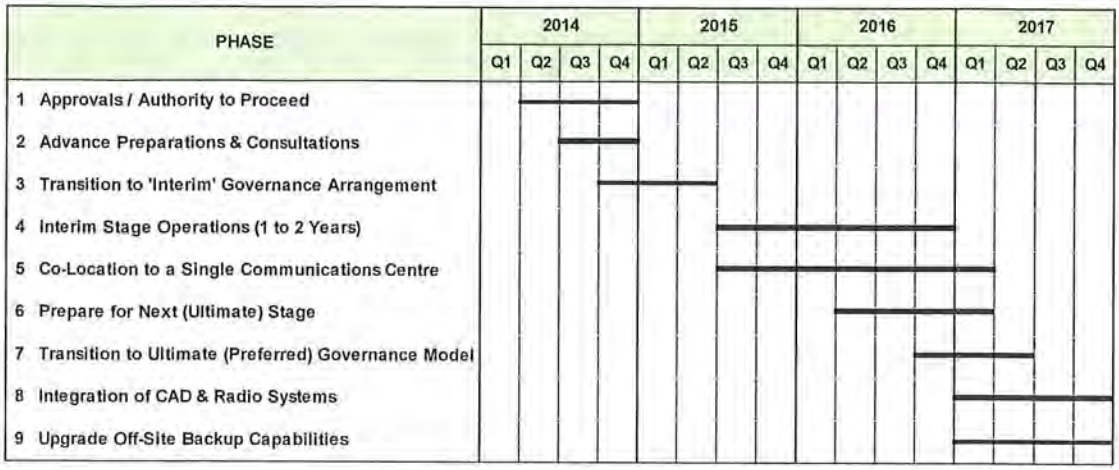


Exhibit 10.2 (next page) presents an implementation plan showing a suggested phasing of tasks and timelines to fully integrate EMS dispatch with the City's 9-1-1 and dispatch services for police and fire. In developing this plan, we have assumed that requisite approvals / authority to proceed will be issued by Q3/Q4 2014 and that ambulance dispatch will be transferred to the City by way of an 'interim' governance arrangement by Q2/Q3 2015.

Exhibit 10.2
Phased Implementation Plan



TASK DESCRIPTIONS BY PHASE

Phase / Task	Responsibility	Target Start
PHASE 1: APPROVALS / AUTHORITY TO PROCEED		
Initial Approvals - Receive and accept a staff report which, based on the findings of this Business Case analysis, recommends: full integration of EMS dispatch with the City's dispatch for 9-1-1, police and fire; assumption of ambulance dispatch responsibility as an initial step toward full integration; the governance arrangement shown in Exhibit E.1 as the preferred (ultimate) governance arrangement; and a phase approach to implementation that generally aligns with the staging plan shown in Exhibit E.2. - Authorize an Executive Management Committee consisting of the following executives to give effect to the emergency communications systems integration: Chief Administrative Officer (serving as Chair), Chief of Police, and the Chief of Fire and Paramedic Services - Direct the Committee to engage MOHLTC in discussions that are intended to secure provincial agreement to a transfer of ambulance dispatch responsibility to Greater Sudbury. This to be contingent on the MOHLTC agreeing to continue to pay 100 percent of the costs of ambulance communications - Direct the Committee to consult on these matters with affected stakeholders and with other EMS services situated in the geographic area currently served by Sudbury CACC	City Council	Q2 2014
MOHLTC Engagement - Forward the a letter (accompanied by the Business Case report) to the Minister of Health and Long-Term Care requesting that the province transfer ambulance dispatch responsibility to Greater Sudbury (contingent on the MOHLTC agreeing to continue to pay 100% the costs of ambulance communications). This to be followed by discussions that are intended to secure provincial agreement - Working with MOHLTC, draft an ambulance dispatch services Agreement that establishes: - A date for the transfer to become effective - Capital and operating budgets (to be paid by MOHLTC) - Terms and standards by which ambulance dispatch will be managed	Executive Management Committee	Q2 2014

Phase / Task	Responsibility	Target Start
Authority to Proceed - Enter into an ambulance dispatch services Agreement that transfers operational governance for ambulance dispatch to the City of Greater Sudbury	City Council & Minister of Health & Long-Term Care	Q3/Q4 2014
PHASE 2: ADVANCE PREPARATIONS & CONSULTATIONS		
Executive Lead / Transition Team - Affirm Chief of Fire and Paramedic Services to serve as Executive Lead - Establish a Transition Team that will work under the direction of the Executive Lead to implement the proposed change. Transition Team to include Emergency Services Department management, and supports from GSPS and City departments such as HR, Legal, IT and Finance	Executive Management Committee	Q3 2014
Labour Relations - Consult the following labour groups: Sudbury Police Association (representing police-fire communications employees) and OPSEU (representing ambulance communications employees)	Transition Team	Q3 2014
Consult Affected Stakeholders - Assisted by EHS Branch of MOHLTC and OPSEU, arrange information sessions with Sudbury CACC personnel to inform and respond to questions - Assisted by GSPS management and the Sudbury Police Association, arrange information sessions with GSPS Communications personnel to inform and respond to questions	Transition Team	Q3/Q4 2014
Consult Neighbouring EMS Services - Arrange information sessions with other EMS services situated in the geographic area currently served by Sudbury CACC	Transition Team	Q3/Q4 2014
PHASE 3: TRANSITION TO 'INTERIM' GOVERNANCE ARRANGEMENT		
Recruit Ambulance Communications Personnel - Present conditional offers of employment to Sudbury CACC staff (i.e., to both management and bargaining unit staff). The offers will be conditional upon such items as: an applicant interview; due diligence background check of past performance, certification and security clearance; testing where deemed warranted; etc - Conduct applicant interviews including due diligence background checks and testing. Notify successful applicants and affirm offers of employment: This work will proceed in sequence as follows: - Management and supervisor positions - Call taking and dispatch positions - Support staff positions - Secure acceptance of employment from selected applicants. Arrange corporate orientation sessions for new hires. Attend to their entitlements and prepare their payroll records. - If required, carry out a competitive recruitment process for additional communications personnel	Transition Team	Q4 2014
Due Diligence Inspections of CACC - With the aid of CACC staff who have accepted the City's offers of employment, carry out inspections of Sudbury CACC. Identify changes that will be required to sustain ambulance communications at the present location at the McFarlane Lake Government Complex for an interim	Transition Team	Q4 2014

Phase / Task	Responsibility	Target Start
(temporary) period of 1 to 2 years: - Facility - Security features - Furnishing - CAD, telephone and radio systems - Computer equipment - On-site and off site emergency backup systems - Uniforms and supplies, etc. - Review CACC record keeping and information management systems. Identify required changes - Review staffing schedules, SOP's and support programs including communicator training, QA, QI, risk management, emergency evacuation, etc. Identify required changes - Work with MOHLTC to address issues arising from the above due diligence reviews		
Implement Systems for Performance Tracking and Reporting - Sustaining dispatch performance (relative to expectations and standards) and demonstrating this on an ongoing basis, will be critical to a successful transition. For such purposes relevant Key Performance Indicators (KPI) will be selected in consultation with MOHLTC, and information systems for performance tracking and reporting will be implemented	Transition Team	Q4 2014
Acceptance of Transfer / Media Releases - City and province to issue media releases announcing the City's acceptance of operational responsibility for ambulance dispatch	City Council & Minister of Health & Long-Term Care	Q2/Q3 2015
PHASE 4: INTERIM STAGE OPERATIONS (1 TO 2 YEARS)		
Formally Institute the 'Interim' Governance Arrangement - Implement a Terms-of-Reference defining membership, roles and responsibilities of the Executive Management Committee during interim governance stage - Chief of Fire and Paramedic Services and Emergency Services Department management will assume ambulance dispatch responsibility. Ambulance dispatch delivery will temporarily continue from the present location at the McFarlane Lake Government Complex - During interim governance stage GSPS will continue to manage 9-1-1 and police-fire dispatch from its current communications centre at police headquarters. - Realign organizational structures so that both communications operations will report to the Executive Management Committee - Inform staff and City Council of these actions/decisions by way of written communications	Executive Management Committee	Q3 2015
Singular Purpose of This Interim Stage is to Demonstrate City's Capability to Effectively Manage Ambulance Dispatch - Provide proactive leadership, management and supervisory oversight for ambulance dispatch delivery - Performance tracking relative to MOHLTC standards and KPI established in Phase 3. - Review existing policies and procedures e.g., for ambulance communicator training, QA, QI, risk management, etc. - Review and test existing emergency backup systems and evacuation plans.	Executive Lead & Emergency Services Department Management	Q3 2015

Phase / Task	Responsibility	Target Start
- Supported by Corporate resources, identify potential risks and enhancement opportunities (e.g., opportunities to augment existing training programs with professional development initiatives by Corporate HR) - Meet frequently with MOHLTC. Share relevant information, discuss planned changes, etc. In consultation with MOHLTC introduce adjustments as appropriate - Report periodically to Executive Management Committee		
PHASE 5: CO-LOCATION TO A SINGLE COMMUNICATIONS CENTRE		
Facilities Team - Establish a Facilities Team that will work under the direction of the Executive Lead to investigate, secure/construct and furbish a communications centre that will house the City's fully integrated emergency communications system - The Facilities Team to include resources from Emergency Services, GSPS, Facilities department, Public Works, Legal, IT, Finance, etc	Executive Management Committee	Q3 2015
Investigate Alternative Communications Centre Facility Options - Investigate use of an available facility, including re-construction and renovation to required standards (e.g., for post-disaster construction, security, etc), and preliminary costs - Investigate new purpose-built facility options to required standards, and preliminary costs	Facilities Team	Q3 2015
Investigate Partnering Opportunities - Engage MOHLTC in discussions that are intended to secure provincial funding for the proposed communications centre facility - Investigate opportunities to partner with other public safety services clientele e.g., Fairfax and E-Comm which respectively provide public safety communications on behalf of multiple municipal jurisdictions - Investigate opportunities to partner with other public services operations e.g., Fairfax, which in addition to public safety communications, also houses the communications functions for the County's OEM and the operations centre for the State of Virginia's Department of Transportation	Facilities Team	Q3 2015

Initial Approvals
- Receive and accept a staff report which based on the investigations conducted by the Facilities Team:
  - Recommends a preferred communications centre facility option
  - Identifies tentative provincial funding
  - Identifies potential partners
- Authorize the Executive Management Committee to proceed with the next steps including: preliminary negotiations for property acquisition (if required); competitive tender to select a professional services firm to carry out the design, construction and furbishing of the facility; development of a draft funding agreement with MOHLTC; and development of tentative cost-sharing agreements with potential partners
	City Council	Q4 2015

Carry Out Next Steps - Acting on behalf of the Executive Management Committee, the Facilities Team to carry out the next steps (listed above)	Facilities Team	Q4 2015
Authority to Proceed	City Council	Q2 2016

Phase / Task	Responsibility	Target Start
- Authorize the Executive Management Committee to proceed with property acquisition (if required). Also authorize the requisite budget - Receive and accept a staff report which, based on the competitive tendering, recommends a professional services firm to carry out the design, construction and furbishing of the facility. Authorize the Executive Management Committee to proceed with the work. Also authorize the requisite budget - Approve cost-sharing agreements with identified partners		
Provincial Funding - Enter into an agreement committing provincial funding to the proposed communications centre facility	City Council & Minister of Health & Long-Term Care	Q2 2016
Property Acquisition, Design, Construction and Furnishing - Acting on behalf of the Executive Management Committee, the Facilities Team to carry out the work authorized by City Council, targeting to a move-in date in Q4 2016 / Q1 2017	Facilities Team	Q2 2016
Formal Opening of the Facility / Media Release - Communications personnel move into the newly constructed public safety communications centre facility - Elected officials (City and province) participate in a ribbon cutting ceremony that formally launches the facility. This is accompanied by a media release	City Council & Minister of Health & Long-Term Care	Q4 2016 / Q1 2017
PHASE 6: PREPARE FOR NEXT (ULTIMATE) STAGE		
Service Mandate and Relationships - Develop a single-purpose mandate for the City's fully integrated emergency dispatch operation. This to be dedicated to the delivery of public safety communications services that are reliable, interoperable, of high quality and capable of expediently executing a coordinated multi-agency response - Develop a draft agreement setting out the services and terms by which the fully integrated emergency dispatch system shall operate. This would include such items as: roles and responsibilities of the parties to the agreement; the dispatch services; executive and operational oversight; the facility, furbishing and systems; staff resourcing; staff training and professional development; operational standards, targets and regulations; call data records management; information sharing and reporting; risk and quality management; and a funding formula apportioning the costs - In consideration of the above, review and adapt the Executive Management Committee Terms-of-Reference - Inform City Council and staff of these actions/decisions by way of written communications	Executive Lead working with the Executive Management Committee	Q2/Q3 2016
Organizational Structure - Realign the organizational structure to the newly established mandate. This to include consolidation to a single management structure that will report to the Executive Management Committee, elimination of duplicate/redundant positions, and changes to position descriptions and reporting relationships - This also to include adjusting the staffing complement to reflect the needs of a fully integrated emergency dispatch operation. In this, our assessment indicates a need currently for the following minimum numbers of personnel:	Executive Lead & Emergency Services Department Management	Q2/Q3 2016

Phase / Task	Responsibility	Target Start
- One (1) Manager - One (1) Operations Manager / Senior Supervisor - Four (4) Supervisors - One (1) Training Officer who can double as Supervisor when required - One (1) Quality Programs Officer - One (1) Administrative Support - 38 to 41 full-time communicators (call takers and dispatchers) - Seven (7) part time communicator FTE - In keeping with best practices of North American fully integrated dispatch systems, adapt the resource complement so that a minimum of 15% to 20% of the full time communicators will be cross-trained in police, fire and EMS dispatch - Investigate alternative means for introducing cross-trained communicators. This to include giving an opportunity to existing personnel as well as introducing new hires - Establish joint and individual advisory committees comprised of police, fire and EMS clientele (i.e., the recipients of the services). Also establish an advisory committee to serve as forum for engagement with MOHLTC - Investigate whether user advisory committees will suffice or whether the organizational structure will require advice/support positions that are staffed by subject matter experts drawn from the respective agencies		
Operations - Align operational goals and objectives to the newly established mandate. Review and adapt dispatch polices and procedures. Similarly, review and adapt operating polices and procedures - Consolidate technical, strategic and administrative support resources for systems, IT, planning, performance monitoring, QA/QI and risk management, etc. Consolidate training programs. The consolidated training program to include modules covering the dispatch needs of all participating services. - Commence investigations for consolidating on-site and off site emergency backup systems and protocols; for integrating to shared use of common data bases, shared CAD, telephone and radio communications systems, and shared RMS; and for introducing technological innovations similar to those which the NACS pilot has shown to be beneficial to EMS dispatch e.g.: *MARVLIS* deployment system that adjusts dynamically in response to changes in service demand; *Headstart* pre-alert functionality that improves response time; *CADPortal*, an electronic inter-agency notification system; and *AMPDS* call triage system with built-in quality assurance capability	Executive Lead & Emergency Services Department Management	Q2/Q3 2016
Communications - Prepare a communications strategy by which to inform all emergency communications personnel (i.e., both the ambulance dispatch personnel and police-fire dispatch personnel) of the forthcoming changes to the organizational structure, operations et al. This to include information sessions that will be arranged to respond to questions	Executive Lead & Emergency Services Department Management	Q2/Q3 2016
PHASE 7: TRANSITION TO PREFERRED (ULTIMATE) GOVERNANCE MODEL		
Change Management - With the support of 'change management' resource supports (i.e., HR, Legal, IT and Finance), commence the transition of emergency dispatch from the interim governance arrangement (in which ambulance dispatch operates separately from police-fire dispatch) to the preferred/ultimate arrangement in which the separate operations are merged into one fully integrated system (as planned for in Phase 6 above) - Implement the communications strategy. Schedule information sessions - Work with the existing labour groups to consolidate employee	Executive Lead & Emergency Services Department Management	Q4 2016 / Q1 2017

Phase / Task	Responsibility	Target Start
representation to one bargaining unit. Respond to bargaining unit challenges. Negotiate terms of collective agreement		
Organizational Structure & Operations - With the support of 'change management' resource supports, carry out competitive recruitment processes designed to fill the positions set out in the new organizational structure, including management, supervisors, communicators, and technical, strategic and administrative supports - Implement programs to cross-train 15% to 20% of the existing full time communications personnel (call takers and dispatchers). If required, expand the above competitive recruitment processes to secure the target number of communications personnel who are fully cross-trained - Implement changes developed in Phase 6 above, including: revised goals and objectives, revised dispatch polices and procedures, revised operating polices and procedures, consolidated systems and protocols for emergency backup, newly consolidated training program, staffing schedules et al	Executive Lead & Emergency Services Department Management	Q4 2016 / Q1 2017
PHASE 8: INTEGRATION OF CAD & RADIO SYSTEMS		
Advance Systems Integration - Advance the investigations commenced in Phase 6, for integrating to shared use of common data bases; shared CAD, telephone and radio communications systems; and shared RMS. Moving in this direction is consistent with the research that shows the following: shared use of CAD and radio systems improves interoperability of communications, enhances information sharing and responder safety, streamlines dispatch functions, improves deployment and inter-agency coordination of field operations, and may also result in cost savings - Advance the investigations commenced in Phase 6, for introducing technological innovations (e.g., similar to those which the NACS pilot has shown to be beneficial to EMS dispatch) - Working with the participating services and MOHLTC introduce technology changes in a phased manner that will allow sufficient time to demonstrate proof of concept, test interfaces between systems (in a non-live mode), test the systems in a live mode, re-tailor the communicator training program, train communications staff, etc	Executive Lead & Emergency Services Department Management	Q1/Q2 2017
PHASE 9: UPGRADE OFF-SITE BACKUP CAPABILITIES		
Upgrade Off-Site Backup Capabilities - With the support of corporate Facilities, Public Works and IT, introduce facility and technology upgrades that will align off site (backup facility) emergency dispatch capabilities to those of the primary communications centre	Executive Lead & Emergency Services Department Management	Q1/Q2 2017