

**9-1-1 Services in British Columbia:  
Background Review in Relation to a  
Province-Wide Call Answer Levy**

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## Table of Contents

Executive Summary .....	3
1. Introduction and Background .....	8
2. Definition of 9-1-1 Services, Public Safety Context and Standards .....	9
a. Definition of 9-1-1 Services.....	9
b. Public Safety Context.....	14
c. Standards.....	16
3. Legislative Responsibility .....	18
4. Existing 9-1-1 Services in British Columbia.....	20
a. Overview .....	20
b. Summary of Survey Results .....	22
c. PSAP Surveys.....	23
d. Local Government Surveys .....	24
e. Existing Technology and Infrastructure .....	24
f. Costs and Funding Issues .....	26
5. Coverage Gaps.....	29
a. Regional Districts .....	29
b. First Nations .....	30
6. 9-1-1 System Developments and Issues .....	31
a. Next Generation 9-1-1 .....	31
b. Abandoned, Misdialed and Short Duration Calls .....	33
c. Service Delivery and Efficiency Issues .....	35
7. Canadian and Other Jurisdictions' 9-1-1 Service and CAL Models.....	36
a. Introduction .....	36
b. Review of Canadian Jurisdictions.....	36
i. Canadian Overview .....	39
ii. Nova Scotia .....	40
iii. New Brunswick.....	44
iv. Prince Edward Island .....	47
v. Saskatchewan .....	49
vi. Québec.....	51

vii. Alberta.....	56
c. Approaches in Other Jurisdictions .....	58
i. Manitoba .....	58
ii. State of Kentucky.....	59
<b>8. Issues, Challenges and Options for Introduction of a Provincial CAL Legislative Responsibility .....</b>	<b>62</b>
a. Legislative Approach and Issues .....	62
i. Legislation/Regulation.....	62
ii. Managing Liability.....	63
b. Scope of Services to be Funded by a CAL .....	64
c. Allocation and Management of CAL funding.....	66
d. Governance and Oversight Issues.....	70
i. National Participation Issues .....	70
ii. PSAP Regulation, Standards and PSAP Operational Role .....	70
e. Amount of the CAL and Administration Fee for CAL Collection.....	71
<b>Appendix A: Glossary.....</b>	<b>74</b>
<b>Appendix B: Forms of Survey .....</b>	<b>76</b>

## **Executive Summary**

In January 2013, a Steering Committee was formed comprising representatives of local government, the Union of British Columbia Municipalities and the Province, to examine the issues surrounding the introduction of a uniform, province-wide Call Answer Levy to support and improve 9-1-1 services in British Columbia. This background paper was commissioned by the UBCM in support of the Steering Committee's work. The paper examines how 9-1-1 services currently are delivered in the province, reviews call answer levy legislation and the operation of 9-1-1 services in other jurisdictions, and sets out a framework of the options and issues facing the introduction of a call answer levy in British Columbia.

9-1-1 services are an integral part of the province's emergency communications system. They are a front-end gating mechanism which connects the public to the correct emergency service dispatch agency. There are 12 Public Safety Answering Points which operate under local government authority and provide 9-1-1 services to most of the province.

The operation of 9-1-1 services, indeed, of all aspects of the emergency dispatch and communications system, is time-impacted and often life-critical. The system itself is inter-dependent and may be viewed as a continuum commencing from when a member of the public places a call to 9-1-1, where the call is assessed by the 9-1-1 operator and transferred to the relevant emergency dispatch agency, to the dispatch of emergency services and the operation of those services at the incident itself. A failure or delay at any point in this continuum will potentially affect how the entire system operates. Such failures or delays may increase the risk to life of both the public and emergency responders, or result in increased damage to property. Consequently, the entire system, from 9-1-1 services through to dispatch and the emergency radio system, needs to be resilient. It must operate to recognized standards, be adequately housed and staffed with properly trained personnel, and supported by carefully considered programs and processes for quality assurance/quality improvement, centre back-up and business continuity.

Research was conducted on the operation of the existing 9-1-1 system in British Columbia, and on the operation of similar systems in other jurisdictions, with a focus on Canadian provinces where provincial Call Answer Levies have been introduced. The B.C. research included two surveys: one for local governments which were responsible for providing 9-1-1 services; and the other to the 12 Public Safety Answering Points which actually operate the service. In addition, follow up telephone interviews and email exchanges were conducted with local government, RCMP and PSAP<sup>1</sup> personnel, all of whom willingly and generously assisted in providing data, information and insight.

### **9-1-1 Services in British Columbia**

The existing 9-1-1 system has developed organically since its inception in the 1980s. Responsibility for the service lies with local government. Typically, this responsibility is met at

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<sup>1</sup> A list of acronyms used is set out in Appendix A. Capitalized terms and acronyms used in the Executive Summary are defined in the body of the paper when they are first used.

the regional district level, though a number of municipalities either contract for, or directly provide the service as well. As technology has developed and improved, a number of local governments have banded together to coordinate the delivery of the service through a single centre. With current technologies, 9-1-1 services can be provided safely and effectively from distant locations.

9-1-1 services are available in most areas of the province, but there are still some unserved areas and some coverage gaps. Two regional districts – the Northern Rockies Regional Municipality and Central Coast Regional District – and one provincially governed region (the Stikine Region), lack any 9-1-1 service. Additionally, there is no 9-1-1 service in Skeena-Queen Charlotte Regional District outside of the City of Prince Rupert and District of Port Edward. Seven other regional districts reported coverage gaps, either in some electoral areas or on some First Nations reserves. As part of the move to a uniform, province-wide Call Answer Levy, it will be necessary to address the 9-1-1 service coverage gaps, which may involve some financial assistance for the unserved areas. More detailed investigation of coverage gaps also will be required, to assess the cost of service expansion and confirm the areas which still lack service.

The existing 9-1-1 system manages between 1.5 and 1.6 million calls annually. The cost of operating the existing system is in the range of \$12-13 million per year. All of the PSAPs have sought to address business continuity issues: every PSAP has back up and alternate power supplies for critical systems; 11 of 12 have designated fail-over centres and most of the PSAPs have back-up sites for their operations. Only half of the PSAPs, however, were able to confirm that their infrastructure was built to current post-disaster standards.

The 9-1-1 system faces various challenges. In addition to the coverage gaps noted above, the system is also struggling to deal with “Abandoned Calls”. These calls, which almost exclusively come from mobile phones, place significant strain on PSAP, dispatcher and police resources. In some jurisdictions, nearly a quarter of the calls for service for police involve follow-up on abandoned 9-1-1 calls. A formal study of the issue needs to be undertaken and a province-wide policy adopted on how such calls are treated, from PSAP through to police response. The issue also highlights the need for an effective, province-wide educational program aimed at the public, to reduce the number of “pocket dials” received by PSAPs.

The most significant development for 9-1-1 and dispatch services is the imminent advent of Next Generation 9-1-1. NG911 will involve moving PSAPs and Secondary Safety Answering Points to internet-protocol based systems. It will allow emergency communication centres to accept a broader range of connections and data sources – including text, video and pictures. Moving to NG911 will involve a substantive transformation of the existing systems used by emergency communication centres in the province, and will entail technological, operational, economic and institutional change. The system and equipment architecture for NG911 are still being developed, debated and reviewed. However, transitioning to the new systems will be a costly undertaking, in terms of capital investment as well as staffing and training issues. A “precursor” to NG911 is already on the horizon as the CRTC has mandated that carriers must

enable text connections to 9-1-1 services for the deaf, hard of hearing and speech impaired, by 2014.

The review showed that larger PSAPs tended to be more cost-efficient when measured on a “per-call” or per capita basis. Larger centres enjoy economies of scale which are significant. Cost efficient operation of the emergency communications system is important, to ensure that limited budgets are well invested. This reality, however, should not be viewed as a criticism of the existing system, given that it developed organically over the past 30 or so years. Indeed, local governments have worked hard to combine the delivery of the services in most areas of the province, as the technology enabling them to do so has become available. British Columbia compares well to most Canadian jurisdictions: given its geographic size and population, it already has a reasonably efficient PSAP footprint. On a *per capita* basis, Québec has nearly 60% more PSAPs, while Alberta has more than twice the number of that in British Columbia. The numbers are even more significant when compared to the Maritime Provinces and Ontario.<sup>2</sup> Improved efficiencies should still be encouraged, however, as it ensures that monies can be invested in improving the operation and resilience of the system, and enhancing service to the public.

### **9-1-1 Services and Call Answer Levies in Other Jurisdictions**

A significant part of this review involved research into the operation of 9-1-1 systems and Call Answer Levy regimes in other Canadian provinces. Six other Canadian provinces have established, or are introducing, a province-wide CAL: Alberta, Saskatchewan, Québec, New Brunswick, Prince Edward Island and Nova Scotia. In five of those provinces, the CAL applies to all devices which can connect to 9-1-1 services; only Alberta has introduced a CAL which is limited to wireless devices. Each Canadian jurisdiction which has introduced a CAL has also either established procedures, guidelines and operational requirements for PSAPs, or has created a process for establishing them. Four of the six provinces also have introduced liability exemptions covering the operation of PSAPs.

The Maritime Provinces and Saskatchewan fundamentally approach 9-1-1 services as a provincial responsibility (even though service delivery everywhere but Prince Edward Island generally remains with local governments). In Québec and Alberta, 9-1-1 service delivery remains the responsibility of local governments – though Québec has taken the step of requiring that local governments make the service available (either directly or by contract) in most areas of the province.

In the Québec system, the provincial government set detailed requirements for PSAPs, ranging from location and infrastructure, to operational requirements, procedures and quality assurance processes. The allocation of funding from the CAL, however, rests with an agency which is operated by local government. That same agency is responsible for reviewing PSAP operations. In essence, though the province established the requirements, it gave control and

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<sup>2</sup> The number of PSAPs in Ontario is not reported. An email from Inspector Paulo DaSilva of the York Regional Police, who responded to an information request placed to the Ontario 9-1-1 Advisory Board, indicated that there are “over 100” PSAPs in Ontario. Email from Insp. P. DaSilva, 8 July 2013.

oversight of the system to local government, which remains responsible for actual service delivery. An interesting feature of the Québec system, moreover, is that it strictly limits the amount of the funding available for “administration”: a maximum of 3% of the CAL funds can be spent by the responsible agency for its administrative overheads.

Other provinces (notably Saskatchewan, New Brunswick and Nova Scotia) have established committees comprising various stakeholders, including representatives of local government and PSAPs, and emergency services personnel, to develop and implement consistent policies, procedures and standards for their 9-1-1 services. In Alberta, which is in the process of introducing a new CAL and attendant standardized requirements for PSAPs, the principal responsibility lies with the Alberta Emergency Management Agency. The AEMA is seeking to coordinate policy development with local governments and PSAPs.

In four of the six Canadian jurisdictions, the permitted use of CAL funds is broader than a narrowly conceived view of 9-1-1 services. Nova Scotia, among other things, funds its poison control centre using CAL monies. New Brunswick recently broadened its definition of allowable expenditures to include the “coordination of emergency services” in the province, while Saskatchewan uses about half of the CAL funding to subsidize the connection of local government and provincial agencies (including fire departments and municipal workers) to the province’s emergency radio network. Québec utilizes a set allocation formula for distributing CAL funds to (or at the direction of) local governments. It does not actually limit or prescribe how those funds must be spent, though in practice, 96% of the funds are distributed directly to PSAPs.

Two other jurisdictions also were examined: Manitoba and the State of Kentucky. Manitoba has not introduced a provincial CAL. However, it has adopted a centralized approach to the establishment of standards governing PSAP operations and established a wide-ranging liability exemption for PSAP operations. The State of Kentucky, conversely, epitomizes the decentralized approach. With an area only one-third that of British Columbia and a smaller population, Kentucky supports 109 certified PSAPs, and more than 80 uncertified PSAPs, which are not tracked by any state agency. PSAP operation is a local government responsibility and is principally funded through a combination of landline CALs and property taxes. The state also has established a wireless CAL, which it uses to subsidize certified PSAPs and to regulate how those PSAPs manage wireless 9-1-1 calls. It is probably not surprising that the system suffers from significant efficiency issues and many local governments are struggling with funding problems.

### **Issues and Options for a Province-wide CAL in British Columbia**

As a starting point it should be noted that this background paper assumes that a CAL will be imposed on all devices which connect to 9-1-1 services (including landline, wireless and Voice over IP). The CAL will be set at a uniform level and will be province-wide. The principal function of the CAL will be to fund 9-1-1 services, though the introduction of the new system should not result in any local government losing any amount of existing revenue which it currently raises from a landline (or, in the case of Prince Rupert, landline and wireless) CAL. In

other words, the CAL should provide at least the same existing level of funding to such jurisdictions.

Establishment of a CAL and related structures and processes, will involve senior legislation and related regulations. The legislation and regulations will need to address a range of issues, which are set out in greater detail in the body of the paper (including the scope of the CAL, liability issues, collection issues, processes etc.). In general, however, the three principal, interrelated issues which need to be addressed are: the allowable scope of expenditure of funds raised from the CAL; the method or process by which those funds will be managed and allocated; and the extent to which (and process by which) common standards and requirements for PSAP operations will be developed and implemented.

The paper does not seek to prejudge the appropriate scope for the application of CAL funds. That is a policy issue for local governments and the province, though a range of matters are identified which could be included as “in scope”, on both a narrow conception of 9-1-1 services and a broader approach to the use of the funds. Simply put, however, the broader the scope of the CAL – the more elements of the emergency communications system that will be funded, in whole or in part, by this levy – the more complex the allocation process and the more complex the oversight and management of the system will become.

Certain issues or principles did emerge from discussion both with stakeholders during the research process, and through the review of an initial draft of the paper with the Steering Committee:

1. The CAL funding should only be applied to specific, agreed purposes, which should be clearly defined in the senior legislation;
2. The principle use of the funding will be “9-1-1 services”;
3. Control over the allocation of CAL funding should remain with local governments;
4. The allocation process will likely involve both a metrics-driven formula and some form of grants process;
5. The allocation process will need to take into account existing funding and cost structures of local governments;
6. Any administration costs related to the oversight of the system (i.e., to manage the allocation process and any similar functions) should be strictly limited; and
7. Any standards or procedures which are established should be created through a consensus process involving relevant stakeholders – the costs of developing, implementing and meeting those standards must be factored into the CAL funding formula.

Finally, the legislation will also need to address the quantum of the administration fee which telecommunication companies will be permitted to charge for collecting and remitting the CAL. As a matter of principle, this fee should be set at a rate that is no more than the actual cost of collection. With a uniform levy across all devices, and a single point of remittance for CAL funds, the administration fee should be nominal, and certainly far less than the \$0.07 currently charged for the collection of landline CALs.

## 1. Introduction and Background

In January 2013, a steering committee (the “Steering Committee”) was established comprising representatives of local government, the Union of British Columbia Municipalities (“UBCM”) and the province. The goal of the steering committee was to examine issues related to the introduction of a uniform call answer levy to support and improve the operation of 9-1-1 services in British Columbia. In early May 2013, Dave Mitchell & Associates Ltd. commenced work to develop a background paper to help inform the review process being undertaken by the Steering Committee.

The work to be undertaken included a review of the existing 9-1-1 services in the province, a consideration of how such services are delivered in other jurisdictions, a review of how other Canadian jurisdictions with provincial call answer levies have implemented and manage those levies, and a review of the issues, challenges and options in relation to the introduction of a call answer levy (“CAL”) in British Columbia.

The Steering Committee established a series of strategic objectives and principles in relation to the establishment of a practical and sustainable CAL model.<sup>3</sup> From the province’s perspective, three criteria need to be met:

- the CAL needs to be province-wide and harmonized with other jurisdictions (if possible);
- the establishment of a CAL must offer improvements to public safety (e.g. enhanced capabilities, additional training, enhanced capacity to meet future demands, etc.); and,
- the CAL needs to feature a consensus funding formula based on industry and local government leadership.

From the local government perspective, a province-wide CAL must:

- provide new revenue to assist in the development of local 911 services;<sup>4</sup>
- ensure that all users of the local 9-1-1 service help pay for the service, both wireless and landlines; and
- respect the delivery of 9-1-1 services by local government.

To gather the necessary background information, two separate surveys were created. One survey was for the 12 Public Safety Answering Points (“PSAPs”) which operate under local government authority and are responsible for handling the vast majority of 9-1-1 services in the province. This survey focused on issues ranging from the number of calls handled, the number of agencies to which calls were downstreamed and staffing, to infrastructure, training and standards. The second survey was designed for those local governments which were

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<sup>3</sup> UBCM/Provincial Government Committee on Provincial 911 Call Answer Levy: Terms of Reference (undated - 2013).

<sup>4</sup> Various comments from local government representatives have emphasized that this criterion refers to net new revenue, after taking into account existing local governments costs and revenue sources. Comment from T. Whiting, Senior Manager, Protective Services, CRD, 8 July 2013.

responsible for delivering 9-1-1 services in their jurisdictions. These surveys therefore went principally to regional district governments, which typically have responsibility for this service. Where municipal governments were known to be directly involved in providing the service, the questionnaire was also provided to those governments.

In addition, extensive research was conducted on how 9-1-1 services are delivered in other Canadian provinces, with a particular emphasis on those jurisdictions which have established a CAL. The manner in which other provinces are operating their 9-1-1 systems, and managing the corresponding CAL funds, provides a guide as to the issues that need consideration in British Columbia and some conceptual approaches that may be applicable here.

Assistance was also obtained from various individuals in local government and the PSAPs, who willingly shared information and their expertise. Particular thanks are owing to Inspector Rick Greenwood (RCMP E-Division Operational Communication Centres), Bill Figgitt (RCMP – SE District Deputy Leader), Mike Webb and Doug Watson (E-Comm), Cary Berger (Central Okanagan Regional District), Donna Munt (Regional District of Fraser-Fort George), Deb Middleton (Bulkley-Nechako Regional District), Per Kristensen (City of Nanaimo), Travis Whiting (Capital Regional District), Debra Oakman and Marie Lapp (Comox Valley Regional District) and Mike Gilbert (Northern Rockies Regional Municipality).

## **2. Definition of 9-1-1 Services, Public Safety Context and Standards**

The potential introduction of a province-wide CAL to support and improve 9-1-1 services will necessarily involve a consideration of the funding, operation, applicable standards, oversight and control of those services. As such, it is critical to bear in mind the public safety context applicable to 9-1-1 services as those decisions are made. This section seeks first to define what constitutes “9-1-1 services,” then to place those services in the public safety context and to develop some principles which should inform the decision making process.

### **a. Definition of 9-1-1 Services**

9-1-1 services are part of the continuum of emergency communications which start with a member of the public seeking assistance, and ends when that event has been responded to and dealt with by the relevant emergency service. While each element may be distinctly identified and its processes defined, it needs to be understood that they are fully interconnected and interdependent. The failure of the system at any one point will negatively impact the operation of the system as a whole. The general structure of the system is shown in Figure 1, below, along with the potentially applicable standards for each element of 9-1-1 call handling and emergency service dispatch process:<sup>5</sup>

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<sup>5</sup> Note that BC Ambulance Service Dispatch also applies standards to call answer and dispatch. The former is essentially the NENA standard of answering 90% of the calls within 10 seconds or less. The dispatch standard is essentially the same as NFPA 1221 (2010), though BCAS breaks its measurement into two separate components. Fundamentally, however, an EMS unit must be dispatched within 60 seconds, 90% of the time. Email from G. Kirk, Director, Dispatch Operations, BCAS, 10 July 2013.

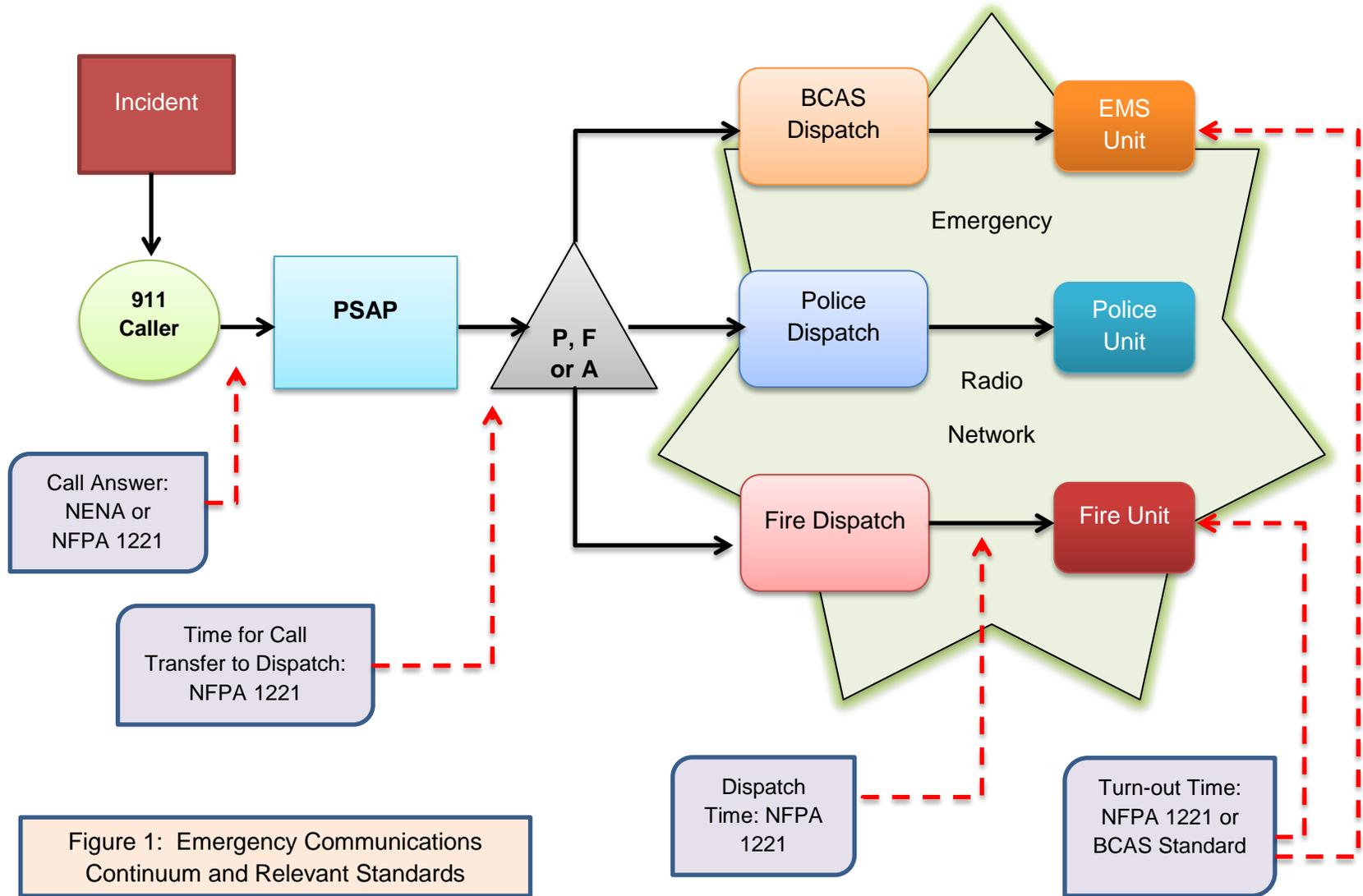


Figure 1: Emergency Communications Continuum and Relevant Standards

On this continuum, the 9-1-1 service is actually a relatively limited piece – it is the initial interface or gating mechanism through which a member of the public is directed to the correct dispatch agency for the relevant emergency responders.

In practice, the call flow from a PSAP to the relevant emergency dispatch agency, and from that agency to the relevant emergency service personnel, can be complex. For example, a 9-1-1 call placed from the Shuswap Lake area in the Columbia Shuswap Regional District (“CSRD”), will be routed to the Kelowna RCMP PSAP. If the call is for a fire department, the Kelowna RCMP PSAP will downstream the call to Surrey Fire Dispatch, which is contracted to provide fire dispatch services for the CSRD’s regional fire departments. Surrey Fire Dispatch, in turn, will then assess the call and page out the appropriate CSRD regional fire department.

A diagrammatic representation of how emergency calls get routed from 9-1-1 to emergency service agencies is shown in Figure 2 below, which sets out how the current system operates in the Capital Regional District (the “CRD”).<sup>6</sup> The CRD is served by three PSAPs.<sup>7</sup> Each of the PSAPs also dispatches police services (two for multiple jurisdictions). 9-1-1 calls can also be downstreamed to one of three fire dispatch centres or to the BCAS dispatch centre. Two of the fire dispatch centres, in turn, dispatch multiple agencies.

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<sup>6</sup> Diagram provided courtesy of the CRD, by Travis Whiting, Senior Manager, Protective Services, CRD.

<sup>7</sup> There is a fourth PSAP which serves only the DND regions of the CRD, as noted at the top of the diagram.

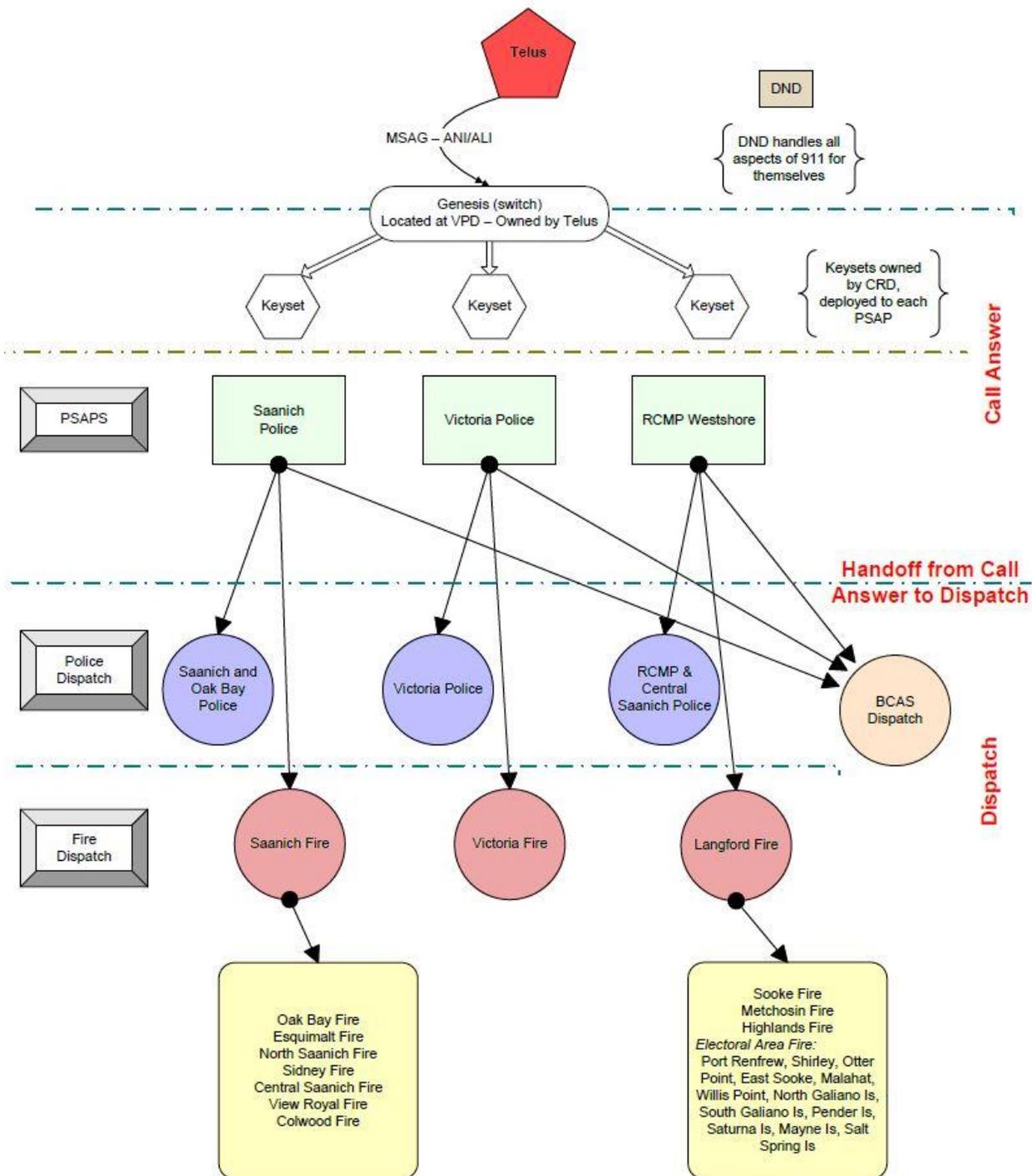


Figure 3: CRD PSAP Operation

For the purposes of this background paper, 9-1-1 services are understood to comprise the following:

- (a) Call answer on the incoming 9-1-1 line.
- (b) Caller interrogation/call evaluation to determine:
  - to which emergency agency or Secondary Safety Answering Point the call should be directed; and
  - the jurisdiction and location to which it relates.<sup>8</sup>
- (c) “Transfer” of the call to the appropriate dispatch centre for the appropriate jurisdiction.

The “Transfer” step may involve any one of the following:

- the call taker notionally switching roles, and undertaking a caller interrogation/dispatch function for either fire or police;
- the call being transferred across the room to a police or fire dispatcher position; or
- the call being transferred to an external agency – such as to BC Ambulance, or to a police or fire dispatch agency such as Surrey Police Dispatch or Kamloops Fire Dispatch.<sup>9</sup>

The 9-1-1 function ends when the “transfer” is complete, either through a call hand-off to another agency or when the notional transfer occurs and the call taker commences agency-specific call evaluation and/or dispatch functions.

On this basis, when viewed as part of the continuum of the emergency communications system, 9-1-1 services are a very limited piece, at the front end of the process. Subsequent references in this background paper to “9-1-1 services” will be predicated on this definition. A provider of 9-1-1 services is properly referred to as a “public safety answering point” or “PSAP”.<sup>10</sup> Communication centres which provide only dispatch services are referred to as “Secondary Service Answering Points” or “SSAPs”.

An issue to be considered by stakeholders, including local governments, the province, emergency communication centres and emergency agencies, is the role to be played by PSAPs in relation to abandoned or short duration 9-1-1 calls. This issue, which can consume

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<sup>8</sup> In many cases, as the system is currently structured, the “jurisdiction” question may not need to be answered, as there may be only one relevant dispatch agency to which the PSAP downstreams the call. However, as noted in the Kelowna OCC’s operational manual: “The primary source of information, including location and type of emergency is the caller. ANI/ALI information is used as a *secondary* or *confirmation* source only, unless the caller is unable to provide the information.”

<sup>9</sup> There are approximately 50 – 60 external dispatch agencies in the province to which PSAPs may downstream 9-1-1 calls, in addition to the in-house dispatching that they also perform.

<sup>10</sup> The use of the term “PSAP” in some sources is used to refer to any emergency communication centre, including those which only provide dispatch services. In this background paper, the term “PSAP” will only refer to an emergency communication centre which provides 9-1-1 services. In B.C., every PSAP in the province also provides police, fire, or police and fire, dispatch services, in addition to 9-1-1 services.

significant amounts time for both SSAPs and for police resources, will be examined elsewhere in this paper (see section 6(b), below).

The use of this definition is not intended to prejudge how funds from a CAL should be used. As will be seen, other Canadian jurisdictions use the funds raised for purposes broader than what may be considered “9-1-1 services” as narrowly defined and some also have 9-1-1 operators play a much more expansive role in the emergency communications system.

Principled arguments can be made for using this funding source to enhance emergency communications as more broadly conceived (including dispatch and emergency radio systems). Ultimately, that decision rests with the local governments and the province. It needs to be appreciated, however, that the further along the emergency communications continuum one goes, the more complicated the issues related to funding allocation methodologies, standards, operational requirements, oversight and similar issues become.

### **b. Public Safety Context**

9-1-1 services are, first and foremost, a question of public safety. It is critical to ensure that the public safety context of these services remains the driving factor in any decision being made regarding the introduction of a CAL and any related consideration of funding allocation, operations, standards, oversight and control.

Emergency communications systems, of which 9-1-1 services are an integral part, require speed, accuracy, thoroughness and resilience. Emergency call handling is time-impacted and often life-critical. An emergency call taker must handle calls quickly, gathering the required information accurately and then fulfilling his or her function in the emergency communications continuum. These four criteria apply along the entire continuum, from 9-1-1 through to dispatch and the role played by dispatchers in emergency incident management.

**Speed.** If call handling is slow at any point in the system, it will delay the arrival of an appropriate emergency response, which can result in greater risk to life for both the public and the emergency responders, and potentially greater damage to property. Slow call handling can also impact other segments of the emergency communication process – if a dispatch centre cannot quickly effect the dispatch of units for which it is responsible, 9-1-1 call takers may not be able to pass on further calls to that centre. In turn, the queue for 9-1-1 calls may back up, since a 9-1-1 call taker cannot take a new call until an existing call has been transferred.

Slow call handling can result from a variety of issues, including insufficient staffing, insufficient training, a lack of quality assurance/quality improvement processes and problems with technology, equipment or software.

**Accuracy.** As with speed, if call handling is inaccurate at any point in the system, it may delay the arrival of an appropriate emergency response, which can result in greater risk to life for both the public and the emergency responders, and potentially greater damage to property. If call takers are not accurate, the wrong service may be dispatched, the wrong types of units may be sent or the units may be delayed in reaching the correct

destination. In the 9-1-1 context, an error in the appropriate jurisdiction, or selection of the wrong type of service, or technological issues stemming from insufficiently current master street address guides, GIS mapping problems, or similar issues, may significantly delay an emergency response.

**Thoroughness.** Given the limited mandate of 9-1-1 services, thoroughness is less of an issue for 9-1-1 call takers than it is for dispatch functions. That being said, at each gating point of the emergency communication process, call takers must ensure that they obtain all of the relevant information necessary to carry out their role in order to activate and direct the appropriate emergency response.

**Resilience.** The emergency communications system, from the 9-1-1 call taker position through to on-scene radio communications between emergency responders, must be resilient and robust. The system must be able to function effectively regardless of adverse circumstances. In the context of 9-1-1 services, resilience relates to the following issues:

- Infrastructure – the building housing the communications centre, including all essential telephone, power and other service connections and related back-up systems;
- Technology and IT systems;
- Staff training and recognized service standards;
- Staffing levels;
- Proper organizational processes and management (including quality assurance and quality improvement); and
- Effective overflow, back-up and business continuity plans.

A PSAP needs to be able to continue functioning (or the service needs to be appropriately backed up by another centre) so that regardless of call volume or an incident affecting a particular 9-1-1 service provider, this critical connection service between the public and emergency responders is not lost or unduly delayed.

The final issue that needs to be borne in mind is that the delivery of the service has to be efficient. If the service does not operate efficiently, monies will be wasted which could have been invested in improving the standards or quality of service delivery to the public and to emergency responders.

An emergency communication centre, whether a PSAP or an SSAP, which meets the four criteria listed above, is an expensive undertaking. Given the capital costs of constructing and maintaining a resilient operation, one which is properly staffed and which utilizes current technology and software, there has been a move towards coordinating the delivery of emergency communication services. In delivering 9-1-1 services, various regional districts and

municipal governments have already banded together to share services through single points of coordination. Example of these shared or combined 9-1-1 services include:<sup>11</sup>

- the arrangements made through the Central Okanagan Regional District, which coordinates and manages provision of 9-1-1 services to itself and eight other regional districts;
- the arrangements made through the Regional District of Fraser-Fort George, which coordinates and manages provision of 9-1-1 and fire dispatch services to itself and three other regional districts;
- E-Comm, which is owned by local governments and provides 9-1-1 services to three regional districts, in addition to fire and police dispatch services;
- Central Island 911, which is an arrangement between two regional districts and a municipality to manage the provision of 9-1-1 services; and
- North Island 911, through which six regional districts arrange for 9-1-1 and fire dispatch services.

These trends towards centralization of service delivery reflect both the benefits that can be obtained through economies of scale and the capabilities of current technologies. They enable investments in infrastructure, technology and staff which enhance service delivery to the public and to emergency responders and should be encouraged as part of this process.

### **c. Standards**

The adherence to standards is one of the hallmarks of modern emergency services. The adoption of standards is critical to the efficient, safe and effective delivery of life-critical, time-impacted services. They also ensure that such services are delivered in a uniform and well understood fashion, thereby improving oversight and mitigating operational risk. In the context of emergency communication centres, established standards also enable such centres to undertake appropriate quality assurance and quality improvement reviews, with established and relevant benchmarks against which to measure performance.

In relation to 9-1-1 services, two recognized sets of standards are potentially applicable: those established by the National Emergency Number Association (“NENA”) and those established by the National Fire Protection Association (“NFPA”). Both are already used to varying degrees by different PSAPs in the province.

NENA is a professional organization focused on 9-1-1 policy, technology, operations and education issues.<sup>12</sup> NENA has established a call answering standard and model for 9-1-1 services which covers five areas:<sup>13</sup>

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<sup>11</sup> In some cases, one regional district may participate in two separate services. Thus, the Squamish-Lillooet Regional District (“SLRD”) arranges for 9-1-1 services through both the Central Okanagan Regional District, for its northern portion, and with E-Comm for the southern portion. Two municipal governments within the SLRD – Squamish and Whistler – separately contract with E-Comm for 9-1-1 and dispatch services.

<sup>12</sup> See the NENA website, at: <http://www.nena.org/>

- Operational level of service;
- Order of answering priority;
- Answering Protocol;
- Information gathering; and
- Call Transfer.

The NENA standard provides that 9-1-1 calls should be answered within 10 seconds, 90% of the time. It also prescribes that a 9-1-1 operator should always answer by saying “9-1-1”. The priority for handling calls are the 9-1-1 and 7 or 10 digit emergency lines, followed by non-emergency lines and finally by administrative or internal phone lines.<sup>14</sup>

The NENA standard offers certain recommendations as to what information should be obtained from callers, as well as processes to be followed by operators to verify address.<sup>15</sup> While the standard specifically identifies call transfers to dispatch agencies as an issue, and provides that “the telecommunicator will transfer the call without delay”, it does not actually establish a measurable standard for such transfers.<sup>16</sup>

NENA also has established specific standards for responses to wireless 9-1-1 calls, TTY/TDD<sup>17</sup> operating procedures, the use of call processing protocols and an operational study of “silent or hang-up” 9-1-1 calls.<sup>18</sup>

The NFPA has established comprehensive standards for 9-1-1 call taking and dispatch by emergency services. The NFPA is a professional organization which develops consensus standards for use by fire and other emergency services.<sup>19</sup> Various NFPA standards already have been mandated by the province and by WorkSafe BC for use by the fire service.<sup>20</sup>

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<sup>13</sup> NENA, *NENA Call Answering Standard/Model Recommendation* (2006), at p. 5/12.

<sup>14</sup> *Ibid.*, at p. 8/12, sections 3.1, 3.2 and 3.3.

<sup>15</sup> *Ibid.*, at pp. 8-9/12, section 3.6 and 3.6.1.

<sup>16</sup> *Ibid.*, at p. 9/12, sections 3.7.

<sup>17</sup> TTY/TDD refers to “Telecommunications Device for the Deaf”. The device is essentially a typewriter that allows the deaf, hard of hearing or speech impaired to communicate with the emergency communications services through text. Not all PSAPs in the province currently have TTY/TDD capabilities.

<sup>18</sup> See, for example: NENA, *NENA Guidelines For Minimum Response To Wireless 9-1-1 Calls* (2004); *NENA TTY/TDD Communications Standard Operating Procedure Model Recommendation* (2005); *NENA Emergency Call Processing Protocol* (2008); and *NENA Silent or Hang-Up 9-1-1 Calls for Service: An Operations Focused Study* (2002). NENA also has standards on civic addressing.

<sup>19</sup> See the NFPA website at: [www.nfpa.org](http://www.nfpa.org).

<sup>20</sup> The province, pursuant to section 3(3)(b) of the *Fire Services Act* (B.C.), has mandated that the training standards to be used by the fire services in the province are those set by the NFPA. See: Minister’s Order (OIC M368), 18 December 2002. Various NFPA requirements have also been adopted by WorkSafe BC in Part 31 of the *Occupational Health and Safety Regulation* made under the *Workers Compensation Act* (B.C.).

The relevant standard for emergency communications is NFPA 1221, *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* (2013 Edition) (“NFPA 1221”). The NFPA has prescribed a full range of call answer and handling standards, from 9-1-1 call answer and transfer to the ultimate dispatch of emergency services. Under the NFPA system, 9-1-1 calls should be answered within 15 seconds, 95% of the time, with 99% of all calls answered within 40 seconds. Call transfer by the 9-1-1 operator should be effected within 30 seconds, 95% of the time.<sup>21</sup>

The NFPA standard, however, also covers most aspects of an emergency centre’s operations, including detailed requirements for infrastructure, equipment, back-up power supplies, continuity planning and similar issues. Centres which meet NFPA 1221 standards are designed to be resilient and secure.

All of the PSAPs which responded to the survey utilize either NENA or NFPA call answer standards, with the exception of E-Comm. E-Comm has a more stringent call answer standard – call answer within 5 seconds, 95% of the time – established under contract with its local government clients, and uses NFPA standards for call transfers. Only two centres reported that they have adopted the NFPA call transfer standard.

A corollary to establishing standards is the need to report on a communication centre’s performance against those standards and to utilize appropriate quality assurance/quality improvement processes to ensure that the standards are being met. Regular reporting requirements are an essential discipline. They ensure that a PSAP is regularly reviewing its performance against applicable standards,<sup>22</sup> and assessing the quality of the service it delivers in a measurable fashion. The quality assurance and quality improvement processes then assist in identifying any issues with existing services and developing improvements to the system. Regular reporting on performance metrics and formal quality assurance/quality improvement programs, however, are far from universal in the province.

### **3. Legislative Responsibility**

In British Columbia, delivery of 9-1-1 services is a local government responsibility. The provision of 9-1-1 services, like the provision of fire services, is an optional power. A local government is not obligated to provide such service and the province has not regulated any standards or requirements in relation to such 9-1-1 services if they are provided.

In general, this responsibility has been met by regional district governments, which have established and/or contracted for the provision of service across most of the province. Typically, amendments to the relevant Letters Patent for each regional district conferred the

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<sup>21</sup> See: NFPA 1221, s. 7.4.1.

<sup>22</sup> Every PSAP and SSAP collects large volumes of data. It is surprising, however, that many do not then analyze and report on such data.

necessary powers to undertake the provision of 9-1-1 services, which are then implemented by bylaw as a regional service in accordance with the *Local Government Act* (B.C.).<sup>23</sup>

There are a few notable exceptions: in both Prince Rupert and Nelson, 9-1-1 services are municipally provided. The Prince Rupert PSAP is a combined 9-1-1, fire dispatch and communication centre, which is operated by the Prince Rupert Fire Rescue Department. The service was established under a city bylaw, “9-1-1 Dispatch Service Establishment Bylaw No. 3183, 2004.” The bylaw establishes 9-1-1 services within the municipal boundaries and permits the city to enter into agreements to provide those services to “any other area outside the City that has given consent and entered into an agreement” with the city.<sup>24</sup> Prince Rupert also provides 9-1-1 services to the District of Port Edward under contract. The Regional District of Skeena-Queen Charlotte itself, however, does not provide any 9-1-1 services, and there are a number of settled areas within that regional district without 9-1-1 services.

The City of Nelson, in the Regional District of Central Kootenay (“RDCK”), also provides 9-1-1 services within its municipal boundaries. In this case, the services are incorporated as part of the operation of the Nelson Police Department emergency communications centre. Unlike the Prince Rupert example, however, the RDCK does provide 9-1-1 services to the rest of the regional district. The RDCK is one of eight regional districts which have contracted with the RDCO, to obtain 9-1-1 services through the Kelowna RCMP Operational Communications Centre.

In some cases, individual municipalities also have arranged for 9-1-1 services directly with a PSAP. Thus, in the Squamish-Lillooet Regional District (the “SLRD”), both Squamish and Whistler have separately contracted with E-Comm to obtain both 9-1-1 and dispatch services. Similarly, Central Island 911 is an arrangement between the City of Nanaimo, the Cowichan Valley Regional District and the Regional District of Nanaimo (acting on behalf of the area covered by the boundaries of School District 68) for the provision of 9-1-1 services to each of those parties.

As a local service, funding of 9-1-1 operations is the responsibility of local government. Two primary funding mechanisms are used: property taxes and a CAL on landlines. Most jurisdictions appear to rely on property taxes to fund 9-1-1 services; typically the same tax is used to pay for other portions of the emergency communications system, including dispatch services and the radio network.

A number of jurisdictions use both property taxes and a landline CAL. Landline CALs are implemented through agreements between local governments and the relevant Incumbent Local Exchange Carrier (“ILEC”) (in British Columbia, Telus is the ILEC) and Competitive Local

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<sup>23</sup> See, for example, Capital Regional District, *Supplementary Letters Patent*, Division XXXVI (OIC 1906, 15 October 1988), which conferred the power on the Capital Regional District to establish, operate and fund an “Emergency Response Telephone Service”; see also Regional District of Central Okanagan (“RDCO”), *Supplementary Letters Patent*, Division XXV (20 February 1985), which established comparable powers in the RDCO.

<sup>24</sup> Prince Rupert, Bylaw No. 3183 (2004) s. 2(b).

Exchange Carriers (“CLECs”). Although the amount of the CAL varies from jurisdiction to jurisdiction, the terms of such agreements are standardized, including a set fee of \$0.07/line/month charged by Telus and the CLECs to collect the local levy.<sup>25</sup>

Finally, one jurisdiction in the province has managed to implement a wireless CAL. The Prince Rupert bylaw establishing the service in 2004 also established a CAL on wireless devices. Some funds are actually being collected through the mechanism, but it appears to be limited to wireless devices activated through Citytel, the telecommunications company owned by the city itself. As is well known, the attempt by Nanaimo to impose a CAL on wireless service providers was struck down by courts as a tax that was *ultra vires* the city.<sup>26</sup>

An issue that arises when assessing the costs associated with the provision of 9-1-1 services is that, in every case, these services are provided out of a facility which also offers dispatch services. Given that local governments usually treat 9-1-1 services as a related component of their emergency communication systems (in the broadest sense), it is therefore challenging to determine the precise costs of 9-1-1 service delivery for certain jurisdictions.

As will be seen, not all PSAPs in the province are required to report regularly on their performance metrics. Some Canadian jurisdictions prescribe both the standards applicable to call handling, as well as reporting requirements and quality assurance processes. In connection with the development of a CAL model, consideration of an appropriate approach to establishing consensus performance standards, reporting requirements and quality assurance processes for PSAPs should be included as an aspect of improving the delivery of 9-1-1 services in the province.

#### **4. Existing 9-1-1 Services in British Columbia**

##### **a. Overview**

9-1-1 services are available throughout most of the province,<sup>27</sup> provided through either regional district or municipal governments. 9-1-1 services are provided by 12 PSAPs, plus a PSAP operated by DND Esquimalt (the operation of which is outside the scope of this review). Of the 12 PSAPs, six are located in RCMP Operational Communication Centres (“OCCs”).<sup>28</sup> In some cases, 9-1-1 staffing of the OCCs is provided, in whole or in part, by local governments, a

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<sup>25</sup> The administration fee is expressly provided for as part of the general tariff. See, for example, Telus, *General Tariff: Local Switched Access Service* (CRTC 21461), Item 203.2D, “Local Government Authority Call Answer Levy”, paragraph 2. There also are CRTC-approved standard form agreements for “local governments” wishing to establish landline call answer levies with ILECs and CLECs.

<sup>26</sup> *Canadian Wireless Telecommunications Association v. Nanaimo (City)* 2012 BCSC 1017, at para. 95

<sup>27</sup> This is true, whether it is considered in a geographic sense (i.e., wherever there is a landline or reliable cell phone coverage) or in terms of coverage for resident populations. It is not meant to suggest, however, that coverage is complete.

<sup>28</sup> In relation to the OCCs, this paper uses the location to name the OCC, rather than using the standard RCMP naming convention. For example, the “Southeast District OCC” is called the “Kelowna OCC”. In this way, it will be immediately understandable for the average reader where the particular OCC is located.

situation that figures most prominently in the Nanaimo and Kelowna OCCs. The following table shows each PSAP and its approximate or usual coverage zone:

<b>PSAP</b>	<b>Regions/Areas Served</b>
Saanich Police Department	Capital Regional District (Saanich and Oak Bay only)
Victoria Police Department	Capital Regional District (Victoria and Esquimalt only)
Westshore RCMP OCC	Capital Regional District (remainder of CRD except DND Esquimalt)
<b>[DND Esquimalt PSAP]</b>	<b>[Capital Regional District (DND area only)]</b>
Nanaimo RCMP OCC	City of Nanaimo, Nanaimo Regional District (south portion – School District 68 only), and Cowichan Valley Regional District
Courtenay RCMP OCC	North Island 911. North Island 911 is owned by and arranges for 9-1-1 services to six participating regional districts: Alberni-Clayoquot Regional District, Comox Valley Regional District, Mount Waddington Regional District, Powell River Regional District and the Regional District of Nanaimo (north portion – School District 69).
E-Comm (Emergency Communications for Southwest British Columbia)	Metro Vancouver (Greater Vancouver Regional District), Sunshine Coast Regional District, District of Squamish, Resort Municipality of Whistler, Squamish-Lillooet Regional District (southern portion).
Chilliwack RCMP OCC	Fraser Valley Regional District (part)
Abbotsford Police Department Communications Centre	Fraser Valley Regional District (part)
Kelowna RCMP OCC	Regional District of Central Okanagan, which coordinates provision of services for eight other regional districts as well: Columbia Shuswap Regional District, Kootenay-Boundary Regional District, Regional District of Central Kootenay, Regional District of East Kootenay, Regional District of North Okanagan, Regional District of Okanagan-Similkameen, Squamish-Lillooet Regional District (north), and Thompson-Nicola Regional District).
Nelson Police Department Communications Centre	City of Nelson

PSAP	Regions/Areas Served
Prince Rupert Fire Rescue Services Communications Centre	City of Prince Rupert, District of Port Edward (both in Skeena-Queen Charlotte Regional District)
Prince George RCMP OCC	Peace River Regional District; and Regional District of Fraser-Fort George, which coordinates the provision of 9-1-1 services to: Cariboo Regional District, the Regional District of Bulkley-Nechako and the Regional District of Kitimat-Stikine.

### **b. Summary of Survey Results**

In connection with the review of the operation of the 9-1-1 system in British Columbia, two surveys were developed: one was designed for and provided to each PSAP; the second was designed for local governments which had responsibility for providing, or arranging the provision of, 9-1-1 services for their jurisdictions. In addition, a PSAP survey was provided to BC Ambulance Service (“BCAS”), which provides back-up 9-1-1 service support for E-Comm. The forms of the survey used are attached as Appendix B.

Response rates from the surveys was high: all of the PSAPs responded and 21 out of 28 local government surveys were returned. The willingness of both emergency communications personnel and local governments to participate and to offer views and suggestions throughout the research process was greatly appreciated.

Certain of the data received needs to be treated with some caution. Time constraints affecting this project limited our ability fully to confirm or investigate all anomalies. For example, as noted above, a number of jurisdictions were unable to isolate and identify separately the cost of 9-1-1 services, since such services were fully integrated with their dispatch functions. The cost estimates presented later in this paper will need further investigation before a CAL is introduced.

Similarly, the reporting of call volumes by certain PSAPs does not actually reflect the full volume of calls received, and there were discrepancies between the total number of calls received by some centres and the detailed call breakdown that also was provided. In other instances, it was reported that where a particular event may generate a large number of repetitive calls, the PSAP call taker will initiate “call-screening”.<sup>29</sup> If the PSAP call taker determines that the caller is repeating information about an existing incident, the call may be terminated without connecting the caller to the SSAP or dispatcher (leading, again, to significant discrepancies in call volume reporting and itemized breakdown).

In large measure, the call-screening approach (which is not ideal) is driven by capacity constraints at the SSAP, not the PSAP, level. A small dispatch centre which is attempting to

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<sup>29</sup> This term is extracted from the operations manual of one of the PSAPs where such a practice exists.

manage a major incident may not be able to handle the volume of calls presented while still dispatching and monitoring units active at the event. If the PSAP holds the calls until the SSAP is available, there is the risk that 9-1-1 lines would then become congested. Such congestion could result in a different emergency, at another location, not receiving timely assistance. This issue dramatically illustrates the inter-connected nature of each element in the emergency communications chain.

### c. PSAP Surveys

The aim of the PSAP surveys was to get an overview of the actual operation of PSAPs in the province, including call volumes, call handling standards, infrastructure, staffing levels, training programs, reporting requirements and continuity planning. It is clear from the responses and the opportunity we had to exchange views with these centres, that their members are dedicated professionals seeking to ensure and enhance public safety. They welcomed the effort to review how services were delivered and were forthcoming with suggestions for improvements. All 12 PSAPs operating under provincial jurisdiction responded to the survey request.

The questions were grouped into several categories, not all of which will be summarized or repeated here. In aggregate, the following statistics provides a snapshot of how the PSAPs are currently operating:

Question or Issue	Responses
Total 9-1-1 Call Volume (2012)	~1,583,000
Highest	911,571
Lowest	2,839
Median	48,379
Number of abandoned or “short duration” calls	~260,000 (approximately 16.4%)
PSAPs without TTY/TDD	5 of 12
PSAPs without access to translation services	2 of 12
Number of <b>external</b> SSAPs to which calls are sent	~50 – 60
Number of agencies and police detachments dispatched by primary PSAPs	~167
PSAPs with back-up centres	9 of 12
PSAPs with a fail-over centre	11 of 12
PSAPs with call volume overflow centre	5 of 12
PSAPs with prescribed call answer standards	All
PSAPs with prescribed call transfer standards (time to assess the call and connect to the SSAP)	2 of 12
PSAPs with established protocols for call answer	All
PSAPs requiring the 9-1-1 call taker to stay on the line until SSAP accepts call	All
PSAPs in purpose-built communications facility	2
PSAPs co-located in police buildings	9
PSAPs co-located in fire halls	1
PSAPs in buildings built to current post-disaster standards	6 of 12 (three surveys marked as “unsure” & one left blank are treated as “noes”)
PSAPs with generator power back-up	All

Question or Issue	Responses
PSAPs with UPS for IT systems	All
PSAPs with formal, documented training processes	All
PSAPs with formal quality assurance programs	8/12

A number of these results are considered in further detail in section 4(e) “Technology and Infrastructure,” below.

#### d. Local Government Surveys

The local government surveys were intended to determine how the delivery of 9-1-1 services is organized and governed across the province, and the approximate cost of delivering such services. The surveys were primarily sent to those local governments which had direct responsibility for the service. Thus, if the service was delivered by a regional district government, the municipal governments which comprise that regional district were not separately surveyed. The primary results from the local government surveys are summarized below:

Question or Issue	Responses
Population represented by returned surveys	~4,250,000
Estimated cost of existing 9-1-1 services	~\$12,000,000 - \$13,000,000 <sup>30</sup>
Number of regional districts without any 9-1-1 service	2 <sup>31</sup>
Number of regions with known coverage gaps (including First Nations areas)	7 <sup>32</sup>
Number of responding jurisdictions with landline CALs	12
Range of landline CALs	\$0.47/line/month - \$2.72/line/month

#### e. Existing Technology and Infrastructure

Appropriate technology and infrastructure are essential to ensuring that 9-1-1 service providers can meet the four criteria identified in the discussion of the public safety context of the service. Given the range of technologies being used and relatively short time lines for conducting the background review, no effort was made to ascertain the various systems in use at each PSAP. Rather, the focus was on major infrastructure and the back-up systems.

The review showed that all centres have available, on either a dedicated or shared basis, back-up power from one or more generators, as well as UPS systems for critical IT systems. Loss of

<sup>30</sup> These estimates are analyzed in greater detail in section 4(f) below

<sup>31</sup> To this number needs to be added the Stikine Region, which lacks any form of statutory local government and is managed directly by the province. Stikine Region has a total population of around 1,000, with significant areas of settlement at Atlin and at Dease Lake, as well as some First Nations reserves. Additionally, in Skeena-Queen Charlotte the only 9-1-1 services are those provided by the City of Prince Rupert to itself and the District of Port Edward.

<sup>32</sup> A number of the regions reporting coverage gaps have multiple electoral areas or First Nations reserves without coverage.

power arising from a natural or human induced event, therefore, will not have an immediate impact on the operation of any of the PSAPs.

Most of the centres are co-located in police facilities, which should ensure a reasonable level of physical protection from outside intrusion. E-Comm and Saanich, as standalone communications centres, have been specifically designed to resist such intrusion, both in terms of construction and controlled access.

Of the PSAPs in the province, only six confirmed that the buildings in which they were located were known to be built to current post-disaster standards.<sup>33</sup> While the degree of seismic risk varies throughout the province, post-disaster construction is important for public safety infrastructure. In areas such as coastal British Columbia, including Vancouver Island, the lower mainland region and Prince Rupert, meeting such standards is critical.

Most of the PSAPs (9 of 12) had back-up centres to which they could move in the event that their main facility became inoperable. Even more PSAPs (11 of 12) had a “fail-over” centre, which could be activated in the event that their facility suffered a temporary failure. Few centres, however, reported that they had arrangements in place to cover a surge in call volumes (though many had additional capacity within their organizations to manage such surges, by distributing 9-1-1 call handling work to dispatchers).

Business continuity is critical to both PSAP and SSAP functions. A model to be considered, one which would improve emergency communications resilience within the province, is the creation of a virtual PSAP, through well-defined interconnections between each of the centres. This model operates currently in Nova Scotia (see discussion in section 7(b)(ii), below). The Nova Scotia system permits both fail-over and volume surge protection – if calls are not being picked up by the regular PSAP for the particular region, they are diverted to one of the three other PSAPs in the province. This is also the model used by the four BCAS dispatch centres, which provide both fail-over and call surge coverage for each other.

In British Columbia, moreover, there also is a good argument that “fail-over” centres should be geographically distinct from one another. If two PSAPs provide back-up to one another, but both would be affected by a regional emergency, such as a seismic event, then the protection offered by the fail-over centre may prove illusory.

The challenges of developing a resilient emergency communications system are significant. There are material issues that would need to be addressed, ranging from appropriate technology interfaces and compatible systems to standardized procedures and training. These efforts would also have to include planning for back-up of the dispatching done by the PSAPs in question.

If the challenge is viewed holistically, moreover, it is apparent that similar back-up systems will be needed for all SSAPs as well. The issue is easily illustrated. If a regional emergency (for example, a seismic event) were to impact the operation of E-Comm, such an event will also

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<sup>33</sup> Of the other six, three were confirmed “noes”; two were “unsure” and one questionnaire was left blank.

potentially impact the 14 SSAPs to which E-Comm downstreams 9-1-1 calls. Even if E-Comm's 9-1-1 and dispatching functions are backed up in a fail-over centre which is located in an unaffected region of the province, that fail-over centre potentially will not be able to connect 9-1-1 callers to other lower mainland SSAPs, if they also were affected by the particular emergency.

While the example postulated is extreme, it is intended to reinforce the reality that, although there are distinct functions identifiable within the emergency communications system, the system as a whole is interconnected and interdependent. It is not sufficient to provide a back-up or fail-over solution for 9-1-1, if the SSAPs to which those 9-1-1 calls should be directed are not similarly resilient.

The need to provide coordination and to develop solutions to these issues should be considered intrinsic to improving the 9-1-1 system. As noted in relation to extending the system to unserved areas, a formal process for obtaining and managing input from affected stakeholders – including local governments, the province, PSAPs, SSAPs and emergency service agencies – should be considered as the processes around implementing a CAL are developed.

#### **f. Costs and Funding Issues**

Part of the goal of the local government survey process was to determine the approximate cost of operating the 9-1-1 system, to assist in assessing an appropriate rate for a CAL. Data was received from all but one local government responsible for directly funding a PSAP.<sup>34</sup> As noted above, the data must still be treated with some caution for several reasons:

1. 9-1-1 services are typically fully integrated into and form part of a larger dispatch centre. Proper cost allocations between dispatch functions and the narrower conception of the 9-1-1 call answer and handling role often has not been conducted.<sup>35</sup> In some cases, the charge for emergency dispatch services includes the charge for 9-1-1 services, which has not been separately broken out or invoiced. In a number of instances, therefore, the cost attributed to 9-1-1 services represents an estimate.
2. Local governments which are receiving services through one of the six RCMP OCCs will be experiencing material cost increases over the next one to three years. In some cases, the increase could be as much as 30% or more. Those numbers had not been finalized at the time of writing. One region has produced a firm 2013 budget which includes an estimated 24% increase in PSAP costs from the RCMP (that data was included in the estimate below). The other RCMP price increases will impact budgets valued at approximately \$5,000,000 in the aggregate.

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<sup>34</sup> Some responses were not received from local governments which arrange for their service through another regional district. Aggregate amounts and cost allocations, however, were received from each regional district government or entity which is primarily responsible for acquiring such services on behalf of those non-responding local governments.

<sup>35</sup> For example, the Capital Regional District is conducting such a review in consultation with the three PSAPs with which it has contracts or arrangements. This process is time consuming and complex.

3. In many cases, for a local government (here, called the “Purchaser”) which contracts for its service through another regional district government or other entity, the amount included in the estimate below reflects only the direct cost of that service. It does not reflect any administrative or other overhead of the Purchaser for participating in or managing the service locally, including managing any educational efforts or dealing with contract and service management issues. No attempt has been made in this paper formally to assess such additional administrative or overhead costs.
4. Certain other costs which impact the operation of 9-1-1 services – including civic addressing and maintenance of appropriate digital mapping – often are covered through a CAL in other Canadian jurisdictions.<sup>36</sup> No attempt to assess these costs has been included in this paper, and these amounts have not been included in the estimate given below.
5. The transition to NG911 (discussed in section 6(a), below) will involve significant capital, training and, potentially, staffing costs for PSAPs. These amounts are not currently calculable.

Subject to the foregoing caveats, the estimated current cost of delivering 9-1-1 services in B.C. is approximately \$11,000,000. Assuming a 20% average increase in price for those centres receiving services from the RCMP, this amount increases to approximately \$12,000,000 for 2013 and adding in a margin for overhead costs which were not reported would mean that the total cost is likely in the range of \$12,000,000 – \$13,000,000 (not including civic addressing costs). To put this in context of a CAL on all devices, raising between \$12 -13 million to cover the cost of the system as currently operated would require that the CAL (net of any collection or administration costs) be about \$0.21 – 0.23 per device or connection per month (or about \$2.52 - \$2.76 per year).<sup>37</sup>

There is some level of cross-subsidization that occurs in both directions between 9-1-1 call taking and same-centre dispatch functions. In some cases, it is clear that existing local landline CALs are being used, in effect, to subsidize dispatch functions.<sup>38</sup> In other areas, the situation is far more complex. For example, E-Comm operates a dynamic call answering model. In general, for security and training reasons, most 9-1-1 call taking positions are fully dedicated to that function (and perform no dispatch role). However, E-Comm also provides dispatch services for 13 police and 19 fire agencies (in addition to downstreaming 9-1-1 calls to 14 external dispatch centres). If there is a surge in 9-1-1 calls, dispatchers not otherwise engaged can be assigned to handle 9-1-1 call taking duties. In those instances, the dispatch function is essentially subsidizing the 9-1-1 call taking process.

In the Kelowna OCC, the nine regional districts which obtain PSAP services through this centre fund three PSAP call taking positions. The PSAP call takers are local government employees

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<sup>36</sup> As is the case in Nova Scotia, New Brunswick, PEI and Saskatchewan.

<sup>37</sup> This assumes around 5 million devices or connections. The assumptions on which this calculation is based are considered in greater detail in section 8(e) below.

<sup>38</sup> This issue is more acute in one or more of the smaller centres and will add a layer of complexity to managing any CAL allocation process, as will be discussed further below.

who are fully trained as police dispatchers, and can (and do) handle some of the dispatching function. The RCMP dispatchers, however, are also trained to manage 9-1-1 call taking. During a surge in volume, these dispatchers are able to assist with 9-1-1 call taking.

No attempt has been made to estimate the level of cross-subsidization that exists. It should be noted that the dynamic staffing models described above are efficient approaches to managing unpredictable call volumes, and should not be inadvertently discouraged through an overly narrow interpretation of “9-1-1 services”.

Local governments used a combination of property taxes and landline CALs to fund PSAP (and related dispatch) functions. Only twelve jurisdictions reported having landline CALs:<sup>39</sup>

Jurisdiction	Amount of CAL <sup>40</sup>	Amount Raised
Central Kootenay Regional District	\$0.75	\$201,400
City of Nanaimo	\$0.47	~\$475,000 in aggregate
Cowichan Valley Regional District	\$0.47	See City of Nanaimo
Capital Regional District	\$0.66	~\$1,542,000
Fraser Valley Regional District	\$0.72	\$939,835
Powell River Regional District		
City of Prince Rupert	\$2.72	\$162,032
Regional District of Bulkley-Nechako	\$0.68	\$160,200
Regional District of Kitimat-Stikine	\$0.75	\$121,045
Regional District of Nanaimo (SD 68 region)	\$0.47	See City of Nanaimo
Squamish-Lillooet Regional District (excluding Squamish & Whistler)	\$0.75	\$32,000
Kamloops (to pay its contribution to the service arranged by the Thompson-Nicola Regional District)	\$0.75	\$212,000
<b>Total amount raised from Landline CALs</b>		~\$3,845,000

The amount raised from landline CALs has been falling each year, as individuals move from traditional network access lines to wireless devices. Telus reported that, for 2011, the number of residential landlines it provided fell by some 6.4% from the previous year.<sup>41</sup> Each jurisdiction which uses a landline CAL also imposes a property tax as well to cover the full cost of its emergency communications requirements.

The remaining jurisdictions use only property taxes to fund their 9-1-1 services (and related dispatch/emergency communication functions). In some cases, most notably Metro Vancouver, the possibility of using a landline CAL to fund 9-1-1 services was considered and expressly rejected. The primary basis for the rejection was that the tariffed administration fee of \$0.07/month/line sought by Telus was considered excessive, as it did not reflect the actual

<sup>39</sup> There may be other municipalities with landline CALs, which were not covered by the survey process.

<sup>40</sup> This is the gross amount of the landline CAL, before the subtraction of the telecommunications carrier's fee for administration.

<sup>41</sup> Telus, *Annual Report 2011*, at p. 65.

collection and administration costs of the company and unduly increased the amount of the CAL.

Prince Rupert is a unique case, in that the city owns the local telephone company (which appears to be the basis on which a wireless levy has been imposed). It currently raises about half of its funding for 9-1-1 and fire dispatch/emergency communication services from a combination of a landline and wireless CAL. The wireless CAL raises approximately \$29,800 per year. Given the size and nature of the Prince Rupert Fire Rescue Department Communications Centre, costs attributable to “9-1-1 services” alone are difficult to estimate, but probably are in the range of \$50,000 - \$75,000.<sup>42</sup>

## **5. Coverage Gaps**

In examining coverage gaps, two issues should be noted. First, the paper is discussing coverage gaps in the provision of 9-1-1 service, not coverage gaps in terms of availability of landline or wireless telephony. The latter is a wholly separate consideration: the focus here is on areas where there already is either landline or wireless coverage, but no access to 9-1-1 services.

Second, one of the aims of a CAL is to ensure that the costs of the system are fairly borne by the users based on modality of contact rather than simply being another service which is funded through property taxes or an impost on a limited selection of connection services. If there are areas of the province where resident users are paying the fee, but not able to access the service, the fairness of the structure rightly can be questioned (and the excerpting of “unserved” areas from the CAL would make the system more cumbersome and inefficient).

### **a. Regional Districts**

As noted earlier in the report, three areas in the province lack any 9-1-1 service: Central Coast Regional District (“Central Coast”), Northern Rockies Regional Municipality (“NRRM”) and the Stikine Region. The permanent population across the three regions is about 11,000 people. However, both the Central Coast and the NRRM have active tourism industries. The Central Coast actively promotes the “eco-tourist” trade and its major settlements – Bella Coola, Bella Bella, Ocean Falls, Denny Island and Klemtu – are regular stops on the BC Ferries’ “Discovery Coast Passage” tour.

The Alaska Highway passes through the NRRM, and local estimates are that as many as 200,000 (or more) visitors per year travel through Fort Nelson.<sup>43</sup> NRRM is also host to large resource development works, including mining and the oil and gas sector. The number of

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<sup>42</sup> Based on email correspondence with the Chief of Prince Rupert Fire Rescue Service, the costs attributable to 9-1-1 services were estimated at between 10 – 20% of the total cost of operating the dispatch centre.

<sup>43</sup> Email correspondence with Mike Gilbert, NRRM Community Development Officer, 7 June 2013.

workers at such sites in the NRRM is difficult to estimate with certainty, but is thought to be around the same number as the permanent population.<sup>44</sup>

Another major gap in 9-1-1 coverage is found in Skeena-Queen Charlotte Regional District. The regional district itself does not provide 9-1-1 services, and there is no coverage outside of the City of Prince Rupert and the District of Port Edward. As with the Central Coast and NRRM, Skeena-Queen Charlotte actively promotes its tourist trade, which in part is driven by the BC Ferries “Inside Passage” tours.<sup>45</sup>

The availability of 9-1-1 services is a public safety issue. The provision of emergency services to local residents will be enhanced by the availability of 9-1-1. The situation is even more compelling when considering the impact on visitors. Local residents are aware of the existing limitations of their system (and the need to dial a 10-digit number for emergency services). Visitors, however, may not realize that 9-1-1 services are not available and may encounter significant delays in obtaining access to the appropriate emergency service as a result.

The cost of establishing and connecting remote communities to 9-1-1 services is substantial relative to the limited tax bases of these areas. It is, nevertheless, important to extend existing 9-1-1 services to each area of the province where there are landline connections or reliable cell phone coverage.

In terms of equity, moreover, if a province-wide CAL is to be imposed, it would be inappropriate to require residents to pay the levy if the service is not available to them (or not being introduced as part of the process that created the levy).<sup>46</sup> Some subsidization may be necessary to ensure that these improvements are effected and should be factored into any CAL which is established. In the context of operating and improving the system, the amount of that assistance is likely to be relatively small in percentage terms.

#### **b. First Nations**

A number of jurisdictions reported that, although 9-1-1 services were being provided, those services did not extend to all of the First Nations territories within their boundaries. Six regional districts which returned surveys reported that one or more First Nations areas within their jurisdictions did not have 9-1-1 coverage. These results almost certainly underestimate the

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<sup>44</sup> *Ibid.* The permanent population in the NRRM is about 4,000.

<sup>45</sup> Prince Rupert itself (which has 9-1-1 services) reports in the order of 190,000 visits annually. A portion of those tourists will also visit other areas within the regional district which lack 9-1-1 services. Tourism figures are from 2007: Prince Rupert and Port Edward Economic Development Corporation, *Tourism Industry: Sector Profile* [undated – 2011?], at p. 3. Available from: [www.predec.com/images/editor/File/Tourism%20Sector%20Profile.pdf](http://www.predec.com/images/editor/File/Tourism%20Sector%20Profile.pdf) .

<sup>46</sup> Bell Canada recently lost (at first instance) a class action lawsuit for imposing a “9-1-1 fee” on residents in the north, when no service was available to them. See: Jeff Gray, “Bell loses class-action case over 911 fees in North” *Globe and Mail*, 17 May 2013, at: [www.theglobeandmail.com/report-on-business/industry-news/the-law-page/bell-loses-class-action-case-over-911-fees-in-north/article12003832/#dashboard/follows/](http://www.theglobeandmail.com/report-on-business/industry-news/the-law-page/bell-loses-class-action-case-over-911-fees-in-north/article12003832/#dashboard/follows/) .

problem, though it should be noted that, in many areas of the province, arrangements have successfully been concluded to provide such services.

A number of issues exist with connecting all First Nations lands to the 9-1-1 system, ranging from cost to the lack of municipal addressing. The latter greatly complicates managing emergency communications and, ultimately, dispatching and response by emergency services. Managing these coverage gaps will require a coordinated approach with the affected First Nations bands and with Indian and Northern Affairs Canada. As with the issue of extending 9-1-1 services to remote areas of the province, some subsidization of the costs of establishing services on First Nations lands may be necessary.

It should be noted that this is an area which was identified as a potential concern by some local governments, but time constraints prevented any in-depth consideration. Further follow-up is required to ascertain the size and extent of this coverage issue, and to enable some reasonable estimate of cost to be developed.

## **6. 9-1-1 System Developments and Issues**

### **a. Next Generation 9-1-1**

The looming advent of NG911 will have a significant impact on PSAP (and SSAP) operations. NENA defines NG911 as follows:<sup>47</sup>

NG9-1-1 is an Internet Protocol (IP)-based system comprised of managed Emergency Services IP networks (ESInets), functional elements (applications), and databases that replicate traditional E9-1-1 features and functions and provides additional capabilities. NG9-1-1 is designed to provide access to emergency services from all connected communications sources, and provide multimedia data capabilities for Public Safety Answering Points (PSAPs) and other emergency service organizations.

In the simplest terms, NG911 involves moving emergency communication centres to wireless and IP-based systems. By so doing, both PSAPs and SSAPs will be able to accept a broader, more comprehensive range of connections – including text messages – as well as new data sources, such as pictures and video. Moving to NG911 will involve a substantive transformation of the existing systems used by emergency communication centres in the province. As noted by NENA, which is heavily involved in developing standards for NG911 in the United States, transition to the new system will involve “technological, operational, economic and institutional change.”<sup>48</sup>

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<sup>47</sup> NENA, *NENA Master Glossary of 9-1-1 Terminology* (2012) at p. 82. For a more detailed definition and description, see: NENA, *What is NG9-1-1?* (2008).

<sup>48</sup> NENA, *NENA NG9-1-1 Transition Plan Considerations* (2011), at p. 10 (hereafter, “NENA Transition Plan”).

The system and equipment architecture for NG911 are still being developed, debated and reviewed.<sup>49</sup> In Canada, the CRTC has assigned a subgroup of the Emergency Services Working Group (“ESWG”) responsibility for managing the processes around the implementation of NG911.<sup>50</sup> This working group is responsible for reviewing developments internationally (particularly in the United States), identifying technical and policy issues relating to the transition to NG911 in Canada, and helping to develop solutions to challenges as they arise.<sup>51</sup>

There will be significant capital and operational costs involved in the transition of PSAPs to NG911 infrastructure and systems. These capital and operational costs will also have to be incurred by SSAPs and emergency response agencies, if the new data sources received by PSAPs are to be of any operational use in the field. New systems and new data sources will require significant extra training of PSAP and SSAP staff, as well as emergency services personnel.

A precursor of NG911 is already being readied for implementation. Under CRTC Decision 2013-22,<sup>52</sup> wireless service providers are required “to make the changes in their networks, systems, and processes required to support the provision of Text Messaging with 9-1-1 service for hearing- or speech-impaired persons...”. The changes are required to be made by service providers within 12 months of the decision which means the service is to be available as of January 2014.<sup>53</sup>

The effect of this decision is actually quite limited. Only users who are hearing or speech impaired will be entitled to register to use this system. The ability of PSAPs (and SSAPs) to process this new data source, however, will likely take longer than 12 months to implement, and service availability will vary with location. Nevertheless, it is an indication of the types of changes to come. Indeed, there already is a reported communication issue with youth, who mistakenly assume that 9-1-1 services already can be contacted through text messaging services.<sup>54</sup>

The move to NG911 will require careful and detailed planning. There will need to be close coordination between PSAPs, SSAPs and emergency services. Existing mechanisms for managing these processes will need to be reviewed. Part of the outcome of introducing CAL

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<sup>49</sup> See: NENA, *Understanding NENA's i3 Architectural Standard for NG9-1-1* (2011); and NENA Transition Plan.

<sup>50</sup> Emergency Services (E9-1-1) Working Group.

<sup>51</sup> See Emergency Services (E9-1-1) Working Group, *Status Update for Next Generation (NG) 9-1-1 in Canada: Consensus Report* (31 January 2013) at <http://www.crtc.gc.ca/public/cisc/es/ESRE0058.pdf>. On some of the issues which are emerging in relation to NG911 see: Ken Sluman, “Preliminary Overview – Suggested Work Plan Items,” ESCO0423 (14 December 2012), prepared for the ESWG at: <http://www.crtc.gc.ca/public/cisc/es/ESCO0423.pdf> .

<sup>52</sup> CISC Emergency Services Working Group – Consensus report regarding Text Messaging with 9-1-1 trial and service implementation, CRTC 2013 – 22 (24 January 2013).

<sup>53</sup> The ESWG is reportedly looking at trying to delay this implementation to Q1, 2015: comment from T. Whiting, Senior Manager, Protective Services, Capital Regional District, 8 July 2013.

<sup>54</sup> Presentation by Jasmine Bradley, Corporate Communications, E-Comm, on 17 May 2013.

legislation could and should be the establishment of a recognized stakeholder group comprising the province, local government, emergency communication centres, emergency services and telecommunication providers, to manage the significant structural and operational challenges that a transition to NG911 will pose.

#### **b. Abandoned, Misdialed and Short Duration Calls**

While the issue of abandoned, misdialed and short duration calls (here, referred to as “Abandoned Calls”) may appear tangential, the scope of the problem significantly impacts PSAPs, SSAPs and police services. The problem raises questions about the appropriate role of the 9-1-1 operator (and potentially the cost of operating the PSAP portion of the service), as well as significant issues of public safety, risk management and liability. Abandoned Calls are a growing burden on both emergency services and the emergency communications system.

It should be noted that the number of these calls which get presented to 9-1-1 operators may vary depending on the equipment and set-up of the particularly PSAP. In simplest terms, in some PSAPs, certain very short duration calls may not actually get presented, while in other PSAPs, such calls do go to a call taker.

Each of the PSAPs in the province has a protocol for managing these types of calls, though the role played by the 9-1-1 call taker may vary. In some cases, the 9-1-1 operator will attempt to reconnect with the caller (based on the protocols that were described, they typically make three attempts to reconnect with an abandoned call, though that process may vary with different PSAPs).<sup>55</sup> Where no reconnection is possible, the call is then either downstreamed to a police agency, or, if the 9-1-1 operator also does police dispatching, then a police call is created. In other PSAPs, details regarding the call are immediately downstreamed to the relevant police dispatcher or police dispatch agency, which then attempts the reconnection before creating a police call. This approach has the effect of increasing the work for police dispatch agencies.

The response by police to an abandoned 9-1-1 call will vary, depending on the level of detail and information received. In each case, however, unless a reconnection attempt is successful, a police incident is created and, if sufficient information is available, a unit dispatched.<sup>56</sup>

The volume of these calls is significant and creates enormous pressure on the system. The PSAP survey results indicated that Abandoned Calls represent between 10 – 20% of all 9-1-1 calls received. The impact on the police service is even more significant. Statistics provided by the RCMP show that dealing with Abandoned Calls is an enormous and expensive drain on police resources. In many cases, the single largest number of dispatched events in a

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<sup>55</sup> This is the role prescribed for 9-1-1 operators in Saskatchewan, who also have responsibility for contacting service providers to confirm subscriber details, if required. Sask911, *Standard Operating Guidelines v. 1.5* (June 2012), sections 4.12. For wireless call backs, however, only one attempt is made and if the call back goes to voice mail, no message is left. See section 6.2.

<sup>56</sup> The level of priority will vary: based on data provided by the RCMP, most such incidents are rated “P2” or lower in priority. This also assumes there is sufficient information from the terminated connection to enable follow-up, which may range from actual dispatch of a unit to follow up with the service provider for the particular number, subscriber details, etc.

jurisdiction involves follow-up on Abandoned Calls. For the City of Surrey alone, more than 36,000 police dispatch events, representing 24% of all calls for service in the city, were for Abandoned Calls.<sup>57</sup>

This problem may be exacerbated with the eventual roll-out of NG911. As noted in an assessment provided to the ESWG committee responsible for NG911:<sup>58</sup>

“1. **Primary PSAP’s will be notified of many more calls to 9-1-1.** These additional calls will have been of very short duration. The calls will have been disconnected or terminated before they could have been answered at the PSAP. **[emphasis added]**

2. The notification of the additional calls will be provided in the form of ALI data packets only. There will not be a telephone call presented to a 9-1-1 call taker.”

While the quoted comments relate to issues identified in connection with the proposals from Bell for IP-based systems in Ontario and Québec, the problem of increased call volume may also affect any system established in British Columbia as well.

The growth in the number of Abandoned Calls is directly related to the growth in the number of mobile phones in use. It is likely that most such calls are inadvertent “pocket dials” (or similar misdialing) by cell phone users. Nova Scotia reported that 99% of its Abandoned Calls were from mobile devices.<sup>59</sup> In the context of developing policy, however, the challenge is that the issue has not been systematically studied. While anecdotal statistics exist, it is currently not possible to quantify with any certainty how many Abandoned Calls reflect genuine attempts to reach aid, which were prematurely terminated because of circumstances. This creates an enormous risk management issue and potential source of liability.

There is clearly a need for a uniform and consistent provincial policy to be developed addressing the issue of Abandoned Calls. This policy should:

- be based on a substantive and formal review of the issues involved;
- address the public safety risks, and other risk management and liability concerns arising from these call types;
- define appropriate roles for the 9-1-1 operators, police dispatchers and the police services in managing such calls and assess the costs of any recommended approaches; and

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<sup>57</sup> Data provided by Inspector R. Greenwood, RCMP E-Division - Operational Communications Centres, in a presentation entitled: “General Duty Officer (GDO) Staffing Assessment” (undated: 2013), at p.12.

<sup>58</sup> Ken Sluman, “Preliminary Overview – Suggested Work Plan Items,” ESCO0423 (14 December 2012), at p. 2.

<sup>59</sup> See: EMO, 911 Performance Report, 2009-2010 (2010), at p. 2/4, under “Service Summary”. Prince Edward Island is reportedly considering amendments to its 9-1-1 legislation to make it illegal to sell a mobile phone which has “9-1-1” preprogrammed into the device. Comment from T. Whiting, Senior Manager, Protective Services, Capital Regional District, 8 July 2013, based on email from Pat J. Kelly, Provincial Coordinator of 9-1-1 Services, Prince Edward Island.

- include an educational component which is directed at mobile phone users about the problem and appropriate responses to it (including not hanging up if a misdial has occurred).

It should not be assumed that Abandoned Calls are the only operational issue that may need consideration as legislation for a CAL is contemplated. Other issues – such as the fact that wireless devices which are no longer connected to any network can still connect to 9-1-1, but are difficult for operators to locate if the call is terminated prematurely – also impact the operation of the system and should be formally studied. Indeed, improving the ability of PSAPs and SSAPs to pinpoint the location of wireless users is a major on-going concern. One benefit that could arise through the creation of an official users' group as a related aspect of any CAL legislation, would be that such operational challenges and risks could be considered and addressed consistently across the province.

There also is a role for legislation. A number of Canadian jurisdictions make it illegal to pre-program a phone to dial 9-1-1, with the goal of reducing the number of “pocket-dials” received by mobile devices. A secondary function should be to clarify that PSAP and SSAP operators are entitled to require provision of subscriber information from telecommunication carriers, where needed to support emergency communication operations.

### **c. Service Delivery and Efficiency Issues**

The emergence of centralized 9-1-1 call handling and emergency dispatch centres was largely an organic process. Originally, separate dispatch operations developed within each emergency service in every community, reached directly by the public of that community. The advent of the 9-1-1 system beginning in the mid-1980s led to the establishment of a front-end gating mechanism which directed the caller to the right dispatch agency – which initially meant multiple separate dispatch agencies in each separate community.

With improvements in dispatching technologies and communication systems over the past 20 years, it has become possible safely and effectively to dispatch multiple agencies in widely disparate geographic locations from a single centre. Indeed, if one were to design from scratch a 9-1-1 call taking and related emergency dispatch system for the province using current technologies, it is a certainty that there would be far fewer separate operations than currently exist. Rather, there would be an integrated system that comprises a number of larger, better connected and fully interoperable emergency communication centres, with appropriate local back-up facilities and geographically distinct fail-over sites.

This observation should not be taken as a criticism of the existing system. Indeed, the move to develop collaborative approaches to 9-1-1 and dispatch services has been evident as technologies and systems have developed. It does mean, however, that there is a wide variation in the relative economic efficiency and costs to operate the different PSAPs in the province. Local governments should be commended for both developing and implementing an effective 9-1-1 system initially, and having taken steps to make that system more efficient as technological developments emerged. British Columbia compares well to most Canadian jurisdictions: given its geographic size and population, it already has a reasonably efficient

PSAP footprint. On a per capita basis, Québec has better than 50% more PSAPs, while Alberta has more than twice the number of that in British Columbia. The numbers are even more significant when compared to the Maritime Provinces and Ontario.

In general, properly managed larger PSAPs will operate more cost efficiently when measured on a *per capita* or per call basis, without any loss of effectiveness or compromise of public safety. The economies of scale offer a number of advantages, including the ability to staff with greater depth in the event of a major event, and ability to afford investment in more resilient and robust equipment, systems and infrastructure.

The costing data collected through the survey process can only be treated as indicative. Nevertheless, it was clear that the larger PSAPs were more cost efficient – the two PSAPs which serve the largest respective population bases, were the two most cost efficient operations based on the metrics noted above (an issue that is looked at in greater detail in section 8(c) below).

The challenge when introducing a province-wide CAL will be to ensure that, notwithstanding the introduction of a new funding source, the impetus that currently exists to improve economic efficiencies will continue. The initiatives taken by local governments to combine and create single points of service delivery should be actively encouraged. This approach will better enable the development and improvement of both the quality of service and overall resilience of the infrastructure and systems. It will also make it easier to oversee PSAP operations, and ensure that services are being provided in a fashion that meets modern standards and the public's expectations.

## **7. Canadian and Other Jurisdictions' 9-1-1 Service and CAL Models**

### **a. Introduction**

This section of the report considers how 9-1-1 services and CALs operate in other jurisdictions, with a particular focus on Canadian provinces where provincial CALs have been introduced. It also places that analysis in the context of how those provinces manage their 9-1-1 systems with a particular focus on whether the system is centralized or decentralized and the level of centralized direction and control that is exerted.

### **b. Review of Canadian Jurisdictions**

At present, five Canadian provinces have introduced and are operating provincially mandated CALs. In addition, in May 2013, the province of Alberta passed the *Emergency 911 Act* (AB) which will impose a CAL on wireless devices in that province, and give the province the ability to prescribe standards for delivery of 9-1-1 services by PSAPs. Figure 3 summarizes the status and some of the principal components of 9-1-1 and related CAL legislation across Canada:

Province	Statute/Regulation	CAL Fee	Telecom Admin Charge
Alberta	Bill 15, <i>Emergency 911 Act</i>	0.44 <sup>60</sup>	?
New Brunswick	<i>Emergency 911 Act</i> (N.B.)  Regulation 2008-23 under the <i>Emergency 911 Act</i> (O.C. 2008-77)	\$0.53	\$0.07
Nova Scotia	<i>Emergency 911 Cost Recovery Fee Regulations</i> made under Section 14 of the <i>Emergency "911" Act</i> S.N.S. 1992, c. 4 O.I.C. 2001-44 (February 2, 2001), N.S. Reg. 8/2001	\$0.43	\$0.07
Prince Edward Island	<i>Emergency 911 Act</i> , RSPEI 1988, ch. E-5 – Fee is found in the Schedule.  <i>911 Cost Recovery Fees Regulations</i> , PEI Reg EC342/06	\$0.70	\$0.07
Quebec	<b>Statutes</b> <i>An Act respecting municipal taxation</i> (R.S.Q., chapter F-2.1). See Sections 244.68 to 244.74, subsections 13, 14 and 15 of first paragraph, Section 262, and second and third paragraph of section 262. <i>Civil Protection Act</i> (R.S.Q., chapter S-2.3). See Sections 52.1 to 52.20, in force since December 30, 2010. <i>An Act to amend various legislative provisions respecting municipal affairs</i> (2008, chapter 18, as modified by 2012, chapter 30, section 34). See section 135 which provides that 9-1-1 emergency centres in operation on the date of coming into force of the first regulation made under section 52.4 of the <i>Civil Protection Act</i> (i.e. December 30, 2010) have three years from that date to obtain a certificate of compliance (until December 30, 2013). <i>An Act respecting pre-hospital emergency services</i> (R.S.Q., chapter S-6.2). See sections 7, 22, 24 and 86. <i>An Act respecting the Québec sales tax</i> (R.S.Q., chapter T-0.1). Section 162.1 provides that a supply made to a municipality of a service of receiving and processing telephone calls through a 9-1-1 emergency centre is exempt. <i>An Act respecting the exercise of certain municipal powers in certain urban</i>	\$0.40	0.04

<sup>60</sup> The Alberta government has indicated that the cell charge will be the same as for a land line.

	<p><i>agglomerations</i> (R.S.Q., chapter E-20.001). See paragraph b) of subsection 8° of section 19, which provide that 9-1-1 emergency center is a matter that concerned related municipalities as a whole. See also sections 118.2, 118.27 and 118.79 about financing such an expenditure in certain urban agglomerations.</p> <p><b>Regulations</b>  <i>Regulation governing the municipal tax for 9-1-1</i> (R.R.Q., c. F-2.1, r. 14.2)  <i>Regulation respecting standards, specifications and quality criteria applicable to 9-1-1 emergency centres and to certain secondary emergency call centres</i> (R.R.Q., c. S-2.3, r. 2). In force since December 30, 2010.  <i>Regulation respecting the police services that municipal police forces and the Sûreté du Québec must provide according to their level of jurisdiction</i> (R.R.Q., c. P-13.1, r. 6). See section 2, subsection 1 b)</p>		
Saskatchewan	<p><i>The Emergency 911 System Act</i>, SS 1996 ch. E-7.3</p> <p><i>The Sask911 Fees Amendment Regulations, 2010</i> (OC 196/2010), amending <i>The Sask911 Fees Regulations, 2003</i> (chapter S-35 Reg 5), under s. 46 of <i>The Saskatchewan Telecommunications Act</i> (C. S-34) as amended.</p>	\$0.62	\$0.07

Figure 3 – Chart of Other Provincial Legislation/Regulation and CAL Fees

## **i. Canadian Overview**

Six Canadian provinces have, or are in the process of introducing, provincially-mandated call answer levies. Five of those provinces – Nova Scotia, New Brunswick, Prince Edward Island, Québec and Saskatchewan – have implemented CALs which attach essentially to any device which connects with the 9-1-1 system. Thus, the governing statutes cover traditional landline connections, wireless, and voice over internet protocol (“VoIP”), typically with the power for the relevant minister to designate any other device or connection as being covered as well. Alberta, which has not yet proclaimed its legislation, has limited its legislation to wireless devices. This approach means that not all landlines in the province are covered by a CAL, because not all municipalities have entered in agreements with the ILEC or the CLECs.

All six provinces which have introduced CALs also have used the legislation to establish or enhance provincial authority to set standards of service, policies, procedures and guidelines for the operation of PSAPs. The range of explicit centralized control varies from province to province. Nova Scotia, which contracts with three municipal providers and one private provider, sets performance standards and operating procedures by regulation and contract. It also takes responsibility for training of 9-1-1 call operators. New Brunswick and Prince Edward Island also have the powers to set such standards, though they do not provide direct training for 9-1-1 operators. New Brunswick has issued standard operating procedures governing PSAPs and some aspects of SSAP operations. Prince Edward Island has only one PSAP, which is governed by the terms of a contract with the province.

Saskatchewan also has the power to regulate PSAP operations, which it has exercised through a committee established by Sask911.<sup>61</sup> This committee, which includes membership from each of the province’s four PSAPs as well as representatives of Sask911, has developed comprehensive and detailed standard operating procedures. These guidelines are limited to the operation of the 9-1-1 system (as narrowly defined) and do not directly regulate SSAP operations (though, by defining the role of the PSAP operator, the procedures also define certain aspects of the role played by a dispatcher, particularly with regards to issues such as abandoned 9-1-1 calls).

Québec has a well-developed regulatory structure, which specifies requirements for a broad range of PSAP activities, from call answer standards and training requirements, to equipment and infrastructure for its 34 municipally-operated PSAPs. Québec PSAPs are required to be provincially certified to operate.

Under its new legislation, the Alberta government will have the power to regulate PSAP operations. Responsibility for this role will fall to the Alberta Emergency Management Agency, which has indicated that it intends to develop consistent standards for 9-1-1 services, in consultation with local PSAPs.

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<sup>61</sup> The Sask911 Standard Operating Procedures Committee – Call-taking Working Group. The committee also included participation by a representative of SaskTel.

Four of the six provinces (Alberta, New Brunswick, Nova Scotia and Prince Edward Island) have included exemptions of liability for PSAP operators and other stakeholders (e.g., telecommunication providers, emergency service providers and the provincial and local governments). Saskatchewan has a liability exemption, but it applies to volunteer emergency services, not to the PSAPs themselves. Québec has not exempted PSAP operations from liability.

In terms of the scope of the CALs, Nova Scotia, New Brunswick and Saskatchewan have permitted or directed that the levy be used for other purposes, in addition to funding 9-1-1 services. Saskatchewan uses some of its CAL funds to cover a portion of the costs of the provincial emergency radio network. Nova Scotia uses a portion of the amounts raised to fund the provincial poison control centre. New Brunswick has recently revised its senior legislation to broaden the potential scope of expenditures to include coordinating emergency communications across the province.

The Québec situation is somewhat different – once funds are paid to the municipalities, in theory there is no further direction from the province on how the monies are used. In practice, however, it appears that the amounts paid are very closely tied to the actual cost of operating, maintaining and upgrading 9-1-1 services. As a result, it is clear that the funds are being expended on 9-1-1 services, though some portion of those monies may also, in effect, be used to subsidize other aspects of the emergency communication centres' operations.

Both Saskatchewan and Nova Scotia have established committees to oversee and provide input as to the how the 9-1-1 system operates. Québec established a separate agency for this purpose, which is headed by representatives of local government (with a provincial government observer). That agency is also responsible for setting standards, allocating the CAL funds and certifying PSAP operations. Alberta has indicated that it will coordinate oversight of PSAP operations through the Alberta Emergency Management Agency, in consultation with PSAP operators and other stakeholders.

## ii. Nova Scotia

Nova Scotia has established a centralized, provincially administered system for delivering 9-1-1 services. The Emergency Management Office (“EMO”), a division of the Nova Scotia Department of Justice, has authority over the operation of the 9-1-1 system in the province. The EMO was established under and derives its authority from the *Emergency Management Act*.<sup>62</sup>

The Nova Scotia 9-1-1 service itself is governed by the *Emergency “911” Act*<sup>63</sup> and the regulations made thereunder. The principal regulation is the *Emergency 911 Cost Recovery Fee Regulations*,<sup>64</sup> which establishes the amount of the provincial CAL and the processes for managing the funds raised. The statutory structure centralizes the administration of 9-1-1 services in the province and permits the Minister to prescribe standards and recover the costs of

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<sup>62</sup> *Emergency Management Act*, SNS 1990, c.8 (as amended).

<sup>63</sup> *Emergency “911” Act*, SNS 1992, c.4.

<sup>64</sup> *Emergency 911 Cost Recovery Fee Regulations*, N.S. Reg. 8/2001.

operating the system. Section 9 of the *Emergency "911" Act* also exempts from liability the entities (including local government and emergency service agencies) which are responsible for operating the 9-1-1 system.

The Nova Scotia 9-1-1 system comprises four interconnected PSAPs. Although the service is centrally administered, each PSAP is owned and operated by a different entity:

- Halifax Regional Municipality in Dartmouth;
- the RCMP OCC in Truro;
- Cape Breton Regional Municipality in Sydney; and
- Valley Communications Inc., a privately owned communication centre located in Kentville.

The integration of the PSAPs means that overflow calls are automatically routed to another of the four centres. As of 2010, the EMO reported that they had never had a recorded instance where a caller received a "busy" signal or voice recording when attempting to call 9-1-1.<sup>65</sup>

The relationship between the province and each PSAP is governed by a standard agreement. This agreement:<sup>66</sup>

- (a) makes the province responsible for providing and maintaining the necessary telecommunication equipment (ss. 4(5) and 7(1));
- (b) makes the province responsible for establishing the training program for emergency call takers (s. 8(1)). The training curricula, however, is subject to input from the PSAPs (s. 8(9));
- (c) makes the PSAP responsible for supplying the necessary facilities infrastructure for housing the call takers and telecommunications equipment (s. 4(1)). The agreement does not, however, expressly specify any standards applicable to those buildings (e.g., post-disaster construction, NFPA 1221, etc.);
- (d) requires the PSAP to conform to standardized operating procedures ("SOPs") developed by the EMO (ss. 4(4) and 6(1)). Changes to the SOPs, however, require the consent of the PSAPs (s. 6(2)(c));
- (e) establishes a standard for call answering (90% of calls answered within 10 seconds) (s. 6(2)(a)). The agreement, however, does not establish a standard for call transfers to downstream PSAPs;<sup>67</sup>
- (f) requires the PSAP to hire sufficient trained staff as required to meet the standards and other SOPs (s. 6(2)(c));
- (g) establishes the fee for service (s. 11(2));

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<sup>65</sup> EMO, "911 Fact Sheet," (Nova Scotia, 2010), at p. 2.

<sup>66</sup> The information in this section is based on the agreement approved as to form by the Halifax Regional Municipality on 29 May 2007.

<sup>67</sup> NFPA 1221 includes a reporting metric for call transfers (within 30 seconds, 90% of the time). It is also interesting to note that the Nova Scotia EMO reports on a different call answer metric in its public communications – it reports against a 20 second, not 10 second, call answer time. See: EMO, *911 Performance Report, 2009-2010* (2010), at p. 2/4, under "Service Summary".

- (h) establishes a process for reimbursement of “extraordinary or unforeseen expenses” incurred by a PSAP in relation to the operation of the 9-1-1 service;
- (i) includes an indemnity from the province in favour of the PSAP for any liability arising out of the operation of the 9-1-1 system (s. 12(1)), which indemnity is backed by the exemption from liability for PSAPs under section 9 of the *Emergency “911” Act*; and
- (j) includes a somewhat narrower indemnity from the PSAP to the province in relation to breaches of the agreement itself (for example, if the PSAP breached the agreement by permitting the untrained personnel to act as 9-1-1 call takers, this indemnity could be invoked by the province).

The fee for service established under section 11(2) of the agreement is driven solely by the number of “qualified” 9-1-1 calls handled by the PSAP. For each qualifying 9-1-1 call, the PSAP is paid \$9.21 (adjusted annually in accordance with the Canadian CPI). There are significant limitations, however, on reimbursable 9-1-1 calls. Where the PSAP is also a dispatch agency, a 9-1-1 call which is converted to a dispatchable event at that same PSAP will not be compensated.<sup>68</sup>

The agreement also includes, as Appendix A, an annex dated “February 2007” which further specifies the roles and responsibilities of each party. This annex provides that travel and backfill costs related to the training of 9-1-1 call takers will be reimbursed by the province.

From an infrastructure perspective, there are two 9-1-1 switches in the province – one primary and one back-up – which are operated by Bell Aliant (a subsidiary of BCE, the owner of Bell). The province has a master service agreement with Bell Aliant governing the provision and maintenance of the 9-1-1 infrastructure.

**Nova Scotia Call Answer Levy.** The funding of EMO’s obligations in relation to the 9-1-1 service is obtained primarily through a province-wide call answer levy. The levy is established under the *Emergency “911” Act* and the regulations thereunder.

Paragraph 14(1)(ea) of the *Emergency “911” Act* permits the Governor in Council to make regulations “respecting any matter necessary or advisable for the establishment of fees to recover costs for any services or materials provided in the course of the administration of this Act or the regulations.”<sup>69</sup>

In 2001, the Nova Scotia government introduced the *Emergency 911 Cost Recovery Fee Regulations*, which creates a comprehensive structure for establishing and managing the CAL in the province. Under this regulation:

- (a) a CAL of \$0.43 per month was established for landlines and wireless devices (VoIP connections are not expressly mentioned);

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<sup>68</sup> See section 1 of Appendix B, “Call Counting Methodology” to the master agreement between the province and Halifax Regional Municipality.

<sup>69</sup> The *Emergency “911” Act* was amended in 2000 to add this power (see: *Financial Measures (2000) Act*, SNS 2000, c.4, section 7).

- (b) the “E911 Cost Recovery Fund” (the “Fund”) was established as a separate, special fund,<sup>70</sup> to hold and disburse the amounts received;
- (c) the objects of the Fund were specified; and
- (d) the “E911 Cost Recovery Committee” was established to advise the Minister on the administration of the Fund (including collection and disbursement of monies).

Appointments to the E911 Cost Recovery Committee are made by Minister of Justice from among “individuals who have suitable qualifications and experience and have demonstrated suitable interest.”<sup>71</sup> One member must be a representative from the Union of Nova Scotia Municipalities.

The objects of the Fund are broader than just the 9-1-1 service. Subsection 5(3) of the *Emergency 911 Cost Recovery Fee Regulations* permits the Fund to be used for the following purposes:

- the management, administration and operation of the E911 program including civic addressing, public education and training components of the E911 program;
- the acquisition, installation, maintenance and operation of PSAP equipment;
- the maintenance, support and upgrading of databases owned and managed by the Province and related to the administration of the E911 System;
- the maintenance, support and upgrading of digitized civic address mapping;
- the development, installation and maintenance of signage to assist in the reporting of, and response to, emergencies;
- support to the facilities responsible for the receipt and triage of calls reporting poison-related emergencies to the E911 System;
- support to municipalities in the administration of civic addressing programs;
- the payment of any costs, charges, audits, taxes, fees or other expenses incurred in the administration and management of the Fund; and
- the payment of such other things as the Minister may direct, in respect of the provision of E911 Services.

One issue of particular note is that the province’s poison control centre is funded through the CAL, in addition to the provision of 9-1-1 services.

The audited statements for the Fund show that, since 2008/09, it has received between \$4.5 – \$4.7 million annually, net of collection costs and bad debt costs (which together amount to

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<sup>70</sup> The E911 Cost Recovery Fund is a separate fund originally created under clause 2(1)(n) of the *Provincial Finance Act* (Nova Scotia); when the latter was repealed in 2010, the fund was continued under s. 83 of the *Finance Act*, SNS 2010, c.2.

<sup>71</sup> See *Emergency 911 Cost Recovery Fee Regulations*, ss. 6(6) and 6(8).

approximately \$950,000 annually). Overall, collection costs and bad debt represent approximately 17% of the gross fees collected.<sup>72</sup>

### iii. New Brunswick

The New Brunswick approach to its CAL and the operation of its 9-1-1 service appears similar to that of Nova Scotia's. The six regional PSAPs in the province operate under the authority of the *Emergency 911 Act*<sup>73</sup> and regulations made thereunder.<sup>74</sup>

There is less public detail about the operation of the New Brunswick system than that in Nova Scotia. Overall authority for the operation of the New Brunswick 9-1-1 system rests with the Minister of Public Safety, which operates the system through its 911 Bureau. The PSAPs themselves, however, are independently operated under contract with the province. The PSAPs are owned either by municipalities or the RCMP. The 911 Bureau oversees service provision, helps coordinate and implement technological upgrades, and develops operating standards and requirements. The 911 Bureau is also responsible for civic addressing in unincorporated areas of the province.

Like its Nova Scotia counterpart, the *Emergency 911 Act* (NB) contains a liability exemption for participants in the 9-1-1 service. Section 8 of that act exempts the province, the Minister, "a telecommunications service provider," a municipality, an "emergency service provider" and employees or volunteers of any of them, from any liability:

"for any loss or damage suffered by any person by reason of anything in good faith done or omitted to be done...under the authority of this Act or the regulations."

Under the New Brunswick legislation, the province has the right to oversee and control 9-1-1 service delivery and related PSAP operations. Under section 11 of the *Emergency 911 Act* (NB), the Minister may make regulations regarding, among other things,

- the performance and operation of PSAPs;
- the training and certification of PSAP employees;
- the services and functions to be performed by PSAPs;
- how PSAP operations are to be monitored and evaluated;
- the amount of any CAL; and
- how the CAL is to be billed, collected and remitted by telecommunication service providers.

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<sup>72</sup> See: Grant Thornton, *Financial Statements: Nova Scotia E911 Cost Recovery Fund* (31 March 2012); and Grant Thornton, *Financial Statements: Nova Scotia E911 Cost Recovery Fund* (31 March 2010), which together provides aggregated information for the period from 2008/09 – 2011/12.

<sup>73</sup> RSNB 2011, c.146 (as amended through to June 2012).

<sup>74</sup> The two principal regulations are New Brunswick Regulation 96-104, which designates the six PSAPs and deals with civic addressing, and New Brunswick Regulation 2008-23, which establishes the New Brunswick CAL.

Notwithstanding these powers, however, New Brunswick is not as active as Nova Scotia in the training and certification of 9-1-1 call takers. Training is left to the individual PSAP, though the province mandates that each operator “shall be trained on all necessary equipment to process 9-1-1 calls as per the NB 9-1-1 Operating Procedures Directive.”<sup>75</sup>

The province, through its New Brunswick 9-1-1 Bureau, has issued an “Operating Procedures Directive” (the “NB-OPD”). The NB-OPD sets out call handling procedures, PSAP responsibilities, the responsibilities of emergency service dispatch agencies and certain requirements relating to the operation of the PSAPs (e.g., records keeping, incident reporting, etc.). The NB-OPD is binding on both PSAPs and SSAPs in the province.

One difference worth noting regarding the operation of the New Brunswick 9-1-1 system is that the role of the 9-1-1 call taker is far broader than that in most other provinces. In New Brunswick, the 9-1-1 call taker is required to obtain basic information about the nature of the emergency (not just the emergency agency that is sought by the caller). This information is then relayed by the 9-1-1 operator to the SSAP operator, before the caller is handed over to the SSAP. In addition, if additional emergency service agencies are to be notified, responsibility for such notification falls to the PSAP operator.<sup>76</sup>

The New Brunswick approach contrasts sharply with the situation in British Columbia, where substantive caller interrogation is conducted by the SSAP, which then will notify additional emergency response agencies if required. The New Brunswick approach would add considerable time to the 9-1-1 call handling process (and likely require additional 9-1-1 operators). Also, the 9-1-1 operator is expected to transmit information to other emergency service providers (or to screen additional callers on the same incident), without necessarily having received the full or complete details of the incident from the caller.

**New Brunswick Call Answer Levy.** Under section 7 of the *Emergency 911 Act* (NB), a separate fund was established to hold the monies collected through the CAL. The funds may be used for:

- developing, establishing, operating and improving the “NB 911 service”; and
- paying for costs associated with administering the Fund.

The term “NB 911 service” was redefined in 2012 as:<sup>77</sup>

“a province-wide system for the coordination of emergency services and for the reporting of emergencies to emergency service providers through a public safety answering point.”

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<sup>75</sup> New Brunswick 9-1-1 Bureau, *Operating Procedures Directive*, Policy D-2 (2010).

<sup>76</sup> NB-OPD, Policies C-1, C-2 and C-4.

<sup>77</sup> The revision was made in *An Act to Amend the Emergency 911 Act*, SNB c. 25 (2012).

The original definition read:<sup>78</sup>

“a province-wide 911 emergency telephone service for the reporting of emergencies to emergency service providers through a public safety answering point.”

The new definition has the effect of expanding the range of allowable expenditures by the CAL fund, to include expenditures on efforts to develop a “system” for coordinating emergency services, in addition to 9-1-1 call answering services.

Under the *Emergency 911 Act* (NB), a telecommunications company either can enter into an agreement with the Minister to collect the prescribed CAL fee, or it must collect the fee in accordance with the terms of the regulations.<sup>79</sup>

The level of the CAL is prescribed by New Brunswick Regulation 2008-23; this regulation also contains rules which govern how those fees are to be collected and remitted to the province. We have not seen copies of any separate agreements between the carriers and the province; it is not clear, therefore, whether the terms of those agreements differ from the rules prescribed in the regulations.

The New Brunswick CAL covers landline, wireless and VoIP connections.<sup>80</sup> It prescribes a fee of \$0.53 per “exchange service” connection, and permits the telecommunication carriers to retain \$0.07 per connection as a billing and collection fee.<sup>81</sup> Each carrier is required to set out the fee in its billing to its subscribers, and must make all commercially reasonable efforts to collect the fee.

The New Brunswick system requires that the CAL be deducted from the accounts of prepaid phone subscribers, but if insufficient funds are available, “the subscriber shall not be deemed to have refused to pay the fee” and the carrier does not have to make any further efforts to collect it.<sup>82</sup> The logic behind this section is unclear. Even where a prepaid phone no longer has any time available, it can still be used to connect to 9-1-1. In principle, there is no reason why the fee should not be accrued from month to month, until the amount available in the phone’s account is replenished (or some reasonable sunset provision is reached).

The CAL fees are payable 45 days after the end of the relevant month. Each payment has to be accompanied by a statement which includes:<sup>83</sup>

- the amount of the CAL fees billed;
- the amount of the CAL fees collected;

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<sup>78</sup> See the earlier form of the act at <http://www.canlii.org/en/nb/laws/stat/rsnb-2011-c-146/96293/rsnb-2011-c-146.html#history> (accessed 20 May 2013), at section 1.

<sup>79</sup> *Emergency 911 Act* (NB), ss. 5 and 6.

<sup>80</sup> New Brunswick Regulation 2008-23, s. 2, definition of “exchange service”.

<sup>81</sup> *Ibid.*, ss. 3 and 5(1).

<sup>82</sup> *Ibid.*, ss. 10(1) and 10(2).

<sup>83</sup> *Ibid.*, s. 11

- the amount of the CAL fees remitted;
- the amount of the retained billing and collection fee; and
- the number of “exchange services” (connected lines and devices) provided by the carrier in the province during the relevant period.

The monthly statements are required to be certified annually by an accountant.<sup>84</sup>

Unlike the Nova Scotia legislation, no express allowance appears to have been made in New Brunswick for bad debt, which presumably is borne by the carriers.

#### iv. Prince Edward Island

On Prince Edward Island (“PEI”), responsibility for 9-1-1 services falls to the Minister of Environment, Labour and Justice, who oversees the 911 Administration Office which operates under the umbrella of the Office of Public Safety. Operation of the 9-1-1 system is governed by the *Emergency 911 Act*, RSPEI 1988, ch. E-5.1 (as amended through 2012), and regulations made thereunder. The operation of the CAL in PEI is specifically governed by the *911 Cost Recovery Fees Regulations*, PEI Reg EC342/06. A 2012 estimate provided to the UBCM indicates that New Brunswick’s CAL raises approximately \$3.3 million per year.<sup>85</sup>

In 2011, PEI consolidated its three 9-1-1 PSAPs into a single centre located in Charlottetown. This PSAP is a privately operated communication centre owned by Medacom Atlantic Inc.<sup>86</sup> Medacom also provides dispatching services for a number of rural PEI fire departments, two police services and the province’s EMS. There is no publicly available documentation that describes the respective responsibilities between the province and Medacom in connection with delivering 9-1-1 services. Nevertheless, under the *Emergency 911 Act* (PEI), the Minister has authority to establish and operate the 9-1-1 service, in “cooperation with” other identified stakeholders. The Minister has the power to determine how those services are operated including codes of practice, policies, standards and similar matters.<sup>87</sup>

Like its Nova Scotia and New Brunswick counterparts, the *Emergency 911 Act* (PEI) contains a liability exemption for certain participants in the 9-1-1 service. Section 4 of that act exempts the province, the Minister, “telecommunications carriers,” a municipality, an “emergency service provider” and employees or volunteers of any of them, from any liability “for any loss or damage suffered by any person by reason of anything in good faith done or omitted to be done” in connection with the 9-1-1 service.

This language is substantially identical to that of the New Brunswick statute. With the recent consolidation of 9-1-1 services into a single, privately owned PSAP, however, it is not clear that

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<sup>84</sup> *Ibid.*, s. 19.

<sup>85</sup> Document provided by K. Vance, Senior Policy Advisor, UBCM.

<sup>86</sup> See: “Centralized PSAP will be provided by Medacom Atlantic Inc.” on <http://www.gov.pe.ca/newsroom/index.php?number=news&dept=&newsnumber=7551>, accessed on 24 May 2013.

<sup>87</sup> *Emergency 911 Act* (PEI), ss. 2(1) and 2(5).

the liability exemption in the *Emergency 911 Act* (PEI) extends to Medacom Atlantic's communication centre. Although the Minister may, by order, designate a person or a service to be considered an "emergency service provider", there is no evidence that such an order has been made.

**PEI Call Answer Levy.** The PEI CAL itself is set in the act and its Schedule, although how the levy is administered is determined by the regulations. The fee is currently set at \$0.70 for each "telephone service that is subscribed to by a local subscriber."<sup>88</sup> The fee applies to landlines, wireless and VoIP connections, as well as to "any other telecommunications service that is of a type or class prescribed by the regulations."<sup>89</sup> This additional language gives PEI the flexibility to easily adapt the CAL to new types of telecommunication services as they develop.

Under the PEI legislation, the CAL may be used "for the purpose of recovering the costs of the Government in connection with the provision of the PEI 911 service".<sup>90</sup> The PEI 911 service is narrowly defined as being "a province-wide 911 emergency telephone service for the reporting of emergencies to emergency service providers through a public safety answering point" (which is essentially the same definition as that used by New Brunswick, before its 2012 revision).<sup>91</sup>

The PEI legislation does not establish a separate fund for holding the amounts raised from the CAL, and the PEI government does not appear to account for its CAL receipts and expenditures as a separate item (unlike, for example, Nova Scotia).

Under the regulations, a telecommunication carrier is permitted to deduct a "collection" allowance of \$0.07 for each CAL it bills.<sup>92</sup> The regulations also contain provisions requiring carriers to provide documentation supporting the billings and remittances (standardized forms are available for this) and permitting the Minister to reassess returns from carriers and to audit the carriers' books and records.<sup>93</sup> Any records submitted by carriers which reveal how many subscribers they have in the province are protected as confidential information under the main statute.<sup>94</sup> Depending on how a carrier elects to account for the CAL (it can be done on either a billed or collected basis), it may be permitted to deduct an amount representing bad debt.<sup>95</sup> The regulations also contain extensive provisions dealing with payment defaults by carriers as well

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<sup>88</sup> *Ibid.*, s. 2.1 and "Schedule: Cost Recovery Fee". The fee originally was \$0.50 per month per connection, but was adjusted upwards in 2012 to \$0.70.

<sup>89</sup> *Ibid.*, s. 1(i1)(vii).

<sup>90</sup> *Ibid.*, s. 2.1(1)

<sup>91</sup> *Ibid.*, s. 1(f).

<sup>92</sup> *911 Cost Recovery Fees Regulations*, PEI Reg. EC342/06, s. 5

<sup>93</sup> *Ibid.*, ss. 6,7(1), 17

<sup>94</sup> *Emergency 911 Act* (PEI), s. 4.1.

<sup>95</sup> *911 Cost Recovery Fees Regulations*, PEI Reg. EC342/06, s. 2(2). The service allowance is reduced in these circumstances.

as processes for managing any reassessment of the CAL by the Minister. PEI collects an estimated \$850,000 annually through its CAL.<sup>96</sup>

#### v. Saskatchewan

The E911 system in Saskatchewan was established in 1996 under the *The Emergency 911 System Act*, SS 1996 ch. E-7.3. Saskatchewan still has a provincial telecommunications company, SaskTel, and the E911 service utilizes SaskTel's CRTC regulated infrastructure for 9-1-1 call routing. SaskTel, CLECs and wireless service providers are made responsible for billing the CAL to their customers. Under the Saskatchewan model, the CAL funds are remitted to and held by SaskTel. Phase 2 wireless E9-1-1 has been implemented throughout the province.<sup>97</sup>

Under *The Emergency 911 System Act* (Sask.), the Sask911 system is defined as “a province-wide emergency telephone service that connects a person dialling the telephone digits 911 to emergency service providers through a public safety answering point, and includes the province-wide radio communication network to be used by emergency service providers.”<sup>98</sup>

Responsibility for managing the Sask911 system falls to the Saskatchewan Office of the Fire Commissioner, which operates under the jurisdiction of the Ministry of Corrections, Public Safety and Policing. There are four PSAPs in Saskatchewan, located in Prince Albert, Saskatoon, Lloydminster and Regina, each with defined coverage areas. Each PSAP is operated independently<sup>99</sup> under contract with the provincial government.

Under section 45.1 of *The Saskatchewan Telecommunications Act*, RSS 1978, c. S-34, SaskTel is required to establish a fund, and to collect, hold, invest and, at the direction of the Minister, disburse the CAL funds. The funds are required to be accounted for annually, and SaskTel is required to prepare a corresponding report and financial statement for the minister.

A distinctive feature of the Saskatchewan system is that a portion of the province's financial obligations for the Provincial Public Safety Telecommunications Network (the “PPSTN”) is also funded through the CAL.<sup>100</sup> The PPSTN is partnership between the province, SaskPower and the RCMP, and provides radio coverage for the partner agencies throughout most of the province. It has an annual budget of slightly under \$15 million, and each of the partners contributes capital in alignment with its responsibilities for maintaining the system. Each partner is also responsible for funding its own users of the system (e.g., in terms of providing equipment, training and meeting any interconnection requirements). The province's direct financial contribution to the PPSTN (excluding user-specific costs), amounted to some \$5.5

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<sup>96</sup> Document summarizing Canadian CALs provided by K. Vance, Senior Policy Advisor, UBCM.

<sup>97</sup> Description is based on SaskTel, *Sask911 Annual Report (April 1, 2010 – March 31, 2011)*, p. 1

<sup>98</sup> *The Emergency 911 System Act* (Sask.), s. 1. This definition reflects amendments made in 2009.

<sup>99</sup> Two PSAPs are municipally operated (City of Prince Albert and Lloydminster) and two PSAPs are operated by municipal police agencies (Regina Police Service and Saskatoon Police Service).

<sup>100</sup> The *Emergency 9-1-1 System Act* (Sask.) was amended in 2009 to broaden the scope of the CAL to include the PPSTN. See: Office of the Fire Commissioner, *Annual Report 2009-10* (2010) at p 13/24.

million in 2011-12.<sup>101</sup> The province increased the CAL specifically to cover a portion of the PPSTN costs, including subsidizing connection costs of various provincial users.<sup>102</sup>

Under *The Emergency 911 System Act* (Sask.), the minister has the power, among other things, to set the location, number and areas of coverage for PSAPs and prescribe standards, protocols, systems and procedures for communicating, equipping, mapping and addressing, as well as standards for call taking and dispatching. The province may also set requirements for training and education and set standards for civic addressing.<sup>103</sup> The legislation also requires the minister to establish an advisory committee to advise on the development, implementation and operation of the Sask911 system.<sup>104</sup> The Sask911 Advisory Committee fulfils this role in the province.

In Saskatchewan, call answer and call handling times are provided for in the standard operating guidelines developed by a working group of the Sask911 Advisory Committee. Interestingly, Saskatchewan does not expressly provide a standard for call answer (though it extensively references the NENA standard for other purposes), but does prescribe a standard for call transfers, using the NFPA 1221 standard of 95% of calls transferred to the appropriate dispatch agency within 30 seconds or less.<sup>105</sup> The Saskatchewan guidelines also establish training and proficiency requirements for staff, procedures for managing public complaints, confidentiality obligations, certain equipment requirements, staffing obligations, security requirements and the requirement for auditing compliance with guidelines and standards.<sup>106</sup>

The Sask911 Advisory Committee, in addition to developing comprehensive standard operating guidelines, also has developed contingency planning requirements for PSAPs, including business continuity and infection control/pandemic response plans.<sup>107</sup> The establishment of standards and PSAP procedures in Saskatchewan reflected input from the PSAPs, the province and SaskTel.

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<sup>101</sup> This description of the PPSTN is drawn from: Provincial Public Safety Telecommunications Network, *Operating Report, 2011-12* (Saskatchewan: 2012).

<sup>102</sup> Ministry of Corrections, Public Safety and Policing, [Untitled memorandum to users], undated [November 2009]. In the memo, which was distributed to groups such as the Saskatchewan Volunteer Firefighters Association, the ministry noted that: “The operating fee for users of the PPSTN will be \$40 per month per radio. The actual cost is \$90 per month with the difference being funded by a 24-cent increase in the Sask911 charge on consumer phone bills.” See: [www.svffa.ca/news\\_events\\_pdfs/PPSTN\\_announcement\\_2009\\_Nov.pdf](http://www.svffa.ca/news_events_pdfs/PPSTN_announcement_2009_Nov.pdf), accessed on 28 May 2013.

<sup>103</sup> See: *The Emergency 911 System Act* (Sask.), ss. 5 – 8.

<sup>104</sup> *Ibid.*, s. 8(5).

<sup>105</sup> Sask911, *Standard Operating Guidelines v. 1.5* (June 2012). The NFPA standard is used, but not expressly identified as NFPA 1221. See section 4.8, final bulleted point.

<sup>106</sup> *Ibid.*, sections 3 (training), 7 (public complaints), 12 (confidentiality), and 13 (PSAP standards).

<sup>107</sup> Sask911, *Business Continuity Planning* (April 2012); and Sask911, *Sask911 Infection Control Policy* (April 2012).

Although there is an exemption of liability provision in *The Emergency 911 System Act* (Sask.),<sup>108</sup> unlike comparable provisions in the Maritime Provinces, it does not actually exempt the PSAPs from liability. Rather, the provision applies to “a volunteer or a volunteer organization” and exempts liability on the following basis:

“by reason of anything in good faith done, caused, permitted or authorized to be done, attempted to be done or omitted to be done by any of them in carrying out or in the supposed carrying out of any responsibility, duty or power while:

- (a) responding to an emergency 911 telephone call; or
- (b) acting at the request of an emergency service provider who is responding to an emergency 911 telephone call.”

While an interesting exemption, and undoubtedly of significance to organizations such as volunteer fire departments and volunteer search and rescue organizations, it seems odd to include it in legislation dealing with 9-1-1. The exemption fails to define what constitutes a “volunteer” (which could be problematic in situations where responding emergency workers are receiving a small stipend to cover gas or similar costs, or are paid “per call”), and does not address situations where a volunteer agency responds *without* a 9-1-1 call having been received.

PSAPs, however, are not expressly exempt from liability in Saskatchewan.

**Saskatchewan Call Answer Levy.** The Saskatchewan CAL has been set at \$0.62; an administration fee of \$0.07 is charged by SaskTel and other carriers for collecting the CAL. In 2012, more than \$8.9 million was collected through the CAL. Of this amount, \$4.6 million was directly spent on “Public safety answering points”, while \$4.43 million was expended on “Central co-ordination”.<sup>109</sup> The latter line item clearly includes amounts spent on both provincial administration and related costs for managing the Sask911 system, as well as amounts expended on the PPSTN.<sup>110</sup>

## vi. Québec

Québec centrally administers and oversees the operation of its 9-1-1 PSAPs, imposing a range of provincially-established standards and requirements. It also operates a certification process which involves a provincial review of any centre operating as a PSAP. The certification process was introduced in legislative amendments in 2010, with existing facilities granted until December 2013 to qualify. Actual responsibility for the funding, staffing and operation of

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<sup>108</sup> *The Emergency 911 System Act* (Sask.), s. 9.

<sup>109</sup> SaskTel, *Sask911 Annual Report (Fiscal Year April 1, 2011 – March 31, 2012)* (2012), at p. 5/8.

<sup>110</sup> The charge for “central co-ordination” has jumped from approximately \$669,000 in 2007 to the current \$4.43 million. The increase is directly related to the change in legislation in 2009 which added the PPSTN funding to the CAL. See: SaskTel, *Financial Statements of Sask911 Account for the year ended March 31, 2007* (2007), at p. 3/8 for comparison. The central coordination fee increased as the PPSTN system came online in 2010-11.

PSAPs, however, falls to municipal governments. There are some 34 PSAPs operating in Québec. Most are operated by municipal police agencies; some, however, are separate legal entities (like E-Comm in B.C. or Medacom Atlantic in Prince Edward Island). There is a wide range of size, with the largest PSAP handling 9-1-1 services for more than 530 municipalities.<sup>111</sup>

Québec's legislative structure is more complex than that of the other provinces reviewed. Conceptually, it provides an interesting model, since although there is central regulation of the system, much of the enforcement (including allocation of the funds from the CAL) is actually devolved to an agency which is primarily controlled and operated by local governments.

The following statutes and regulations are applicable to the operation of the PSAPs and implementation of the CAL:

### **Statutes**

- 1) *An Act respecting municipal taxation* (R.S.Q., chapter F-2.1). See sections 244.68 to 244.74, subsections 13, 14 and 15 of first paragraph, section 262, and second and third paragraphs of section 262.
- 2) *Civil Protection Act* (R.S.Q., chapter S-2.3). See Sections 52.1 to 52.20, in force since December 30, 2010.
- 3) *An Act to amend various legislative provisions respecting municipal affairs* (2008, chapter 18, as modified by 2012, chapter 30, section 34). See section 135 which provides that 9-1-1 emergency centres in operation on the date of coming into force of the first regulation made under section 52.4 of the *Civil Protection Act* (i.e. December 30, 2010) have three years from that date to obtain a certificate of compliance (until December 30, 2013).
- 4) *An Act respecting pre-hospital emergency services* (R.S.Q., chapter S-6.2). See sections 7, 22, 24 and 86.
- 5) *An Act respecting the Québec sales tax* (R.S.Q., chapter T-0.1). Section 162.1 provides that a supply made to a municipality of a service of receiving and processing telephone calls through a 9-1-1 emergency centre is exempt.
- 6) *An Act respecting the exercise of certain municipal powers in certain urban agglomerations* (R.S.Q., chapter E-20.001). See paragraph b) of subsection 8 of section 19, which provide that a 9-1-1 emergency center is a matter that concerned related municipalities as a whole. See also sections 118.2., 118.27 and 118.79 which cover financing such expenditures in certain urban agglomerations.

### **Regulations**

- 7) *Regulation governing the municipal tax for 9-1-1* (R.R.Q., c. F-2.1, r. 14.2)
- 8) *Regulation respecting standards, specifications and quality criteria applicable to 9-1-1 emergency centres and to certain secondary emergency call centres* (R.R.Q., c. S-2.3, r. 2). In force since December 30, 2010.

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<sup>111</sup> Email correspondence with Serge Allen, General Manager Municipal Finance and Development Agency for Emergency 9-1-1 Call Centers in Québec, dated 5 June 2013.

- 9) *Regulation respecting the police services that municipal police forces and the Sûreté du Québec must provide according to their level of jurisdiction* (R.R.Q., c. P-13.1, r. 6). See section 2, subsection 1 b).

Under the *Civil Protection Act* (Que.), each municipality or regional municipality,<sup>112</sup> other than certain northern villages, must ensure the provision of 9-1-1 services through a certified PSAP. A municipality may meet this requirement by establishing its own PSAP, contracting for the service from another municipality or contracting with a private or non-profit enterprise.<sup>113</sup>

The minister is required to establish the criteria which must be met by PSAPs to obtain certification; he or she may also set the criteria applicable to any other dispatch agencies, other than “health communication centres.”<sup>114</sup> The minister may also set binding guidelines governing PSAPs and secondary dispatch agencies (other than health communication centres).<sup>115</sup> The legislation also permits the minister to appoint inspectors to ensure that PSAPs (and other dispatch agencies, if relevant) are meeting the prescribed standards and guidelines. Certification may be revoked if agencies do not meet the specified requirements.<sup>116</sup>

The regulations governing the establishment and operation of PSAPs and emergency dispatch centres cover a wide range of issues, from location and infrastructure to equipment, call handling and training. Some of the regulatory provisions apply only to PSAPs, while others apply to both PSAPs and emergency dispatch centres.<sup>117</sup> The Québec Dispatch Centre Regulations prescribe that PSAPs:<sup>118</sup>

- (a) must not be located in an “industrial zone” or in an area with known “disaster risks”; (s. 2)
- (b) must provide physical security to prevent intrusions by unauthorized personnel; (s. 4)
- (c) must be located in a building which complies with standards applicable to post-disaster buildings, as at the time the PSAP was installed (and, if being materially renovated, upgraded to current standards); (ss. 5 (1) and (2))

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<sup>112</sup> In Québec, it appears that “regional municipalities” provide services to unincorporated areas of the province, and in that regard are similar to B.C.’s regional districts. (Email correspondence with Serge Allen, General Manager Municipal Finance and Development Agency for Emergency 9-1-1 Call Centers in Québec, dated 5 June 2013).

<sup>113</sup> *Civil Protection Act* (Que.), ss. 52.1 and 52.2.

<sup>114</sup> *Ibid.*, s. 52.3. In Québec, the relevant emergency dispatch centres are referred to as “secondary emergency call centres”.

<sup>115</sup> *Ibid.*, ss. 52.3 and 52.4.

<sup>116</sup> *Ibid.*, see sections 52.12, 52.15, 52.16.

<sup>117</sup> Regulation respecting standards, specifications and quality criteria applicable to 9-1-1 emergency centres and to certain secondary emergency call centres, (R.R.Q., c. S-2.3, r. 2), s. 1 (hereafter, the “Québec Dispatch Centre Regulations”).

<sup>118</sup> Certain of these standards are also applicable to emergency dispatch centres, particularly those relating to quality of service. In many respects, the requirements in these regulations are similar to (though less detailed or comprehensive than) those set out in NFPA 1221.

- (d) must have appropriate fire alarm and detection systems, as well as fire extinguishing equipment;(s. 5(3))
- (e) must have a means for shutting off external air intakes from the heating, ventilation and air conditioning systems; (s. 5(4))
- (f) must have the dispatching equipment and call takers located above the first (ground) floor of the building; (s. 6)
- (g) must have appropriate back up and uninterruptible power supplies, which systems are tested every three months; (s. 6(1))
- (h) meet certain requirements with respect to telephone infrastructure, including the ability to process E911 calls and at least two work stations capable of handling TTY/TDD calls; (ss. 7 – 8 )
- (i) meet certain specified staffing requirements and call handling / quality of service obligations (ss 9 – 11). Calls must be answered within 10 seconds, 90% of the time and landline calls must be transferred to the relevant emergency dispatch centre within 60 seconds or less;
- (j) must create and maintain certain records about each call, and keep information relating to their records confidential (ss. 12 -14, 16);
- (k) must develop, maintain and exercise business continuity and backup plans (ss. 17 – 20). The backup plans have to include the identification of a functional backup centre and procedures for dealing with call overflows; and
- (l) must ensure that their staff meet certain requirements when hired, and certain minimum initial and on-going training standards. (ss. 21-22).

These detailed regulatory provisions regarding PSAP facilities, equipment and operations set Québec apart from other Canadian jurisdictions which have implemented a province-wide CAL. Oversight of the system is provided by the Agence municipale de financement et de développement des centres d'urgence 9-1-1 du Québec (the “Agency”),<sup>119</sup> which is responsible for managing the certification processes, as well as distributing the CAL funds.

Notwithstanding the over-arching nature of the provincial regulatory structure, responsibility for 9-1-1 services (including funding and operations) remains with municipal governments. Accordingly, the Agency is governed by a board of directors comprising representatives of the Union of Municipalities of the Province of Québec, the Fédération québécoise des municipalités and the Ville de Montréal, in equal numbers. The province is entitled to appoint an observer to the Agency, and one has been designated by the Minister of Municipal Affairs, Regions and Land Occupancy.<sup>120</sup>

In accordance with its mandate, the Agency also operates a Technological and Regulatory Monitoring Committee, which stays abreast of issues impacting 9-1-1 services, and develops

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<sup>119</sup> The Agency was established by the Minister pursuant to section 244.73 of *An Act Respecting Municipal Taxation*, RSQ, c. F-2.1.

<sup>120</sup> This description was extracted from the Agency’s website, <http://www.agence911.org/en/theagency> , accessed on 2 June 2013.

forward planning to address those issues. It also has a responsibility for public education regarding 9-1-1 services.<sup>121</sup>

The operation of the Agency is funded through the CAL. The Agency may retain a maximum of 3% of the CAL funds remitted to it by Revenu Québec for its administrative costs.

**Québec Call Answer Levy.** The Québec CAL is implemented as a municipal tax, albeit one required by provincial legislation. Under the senior legislation, each municipal government was required to pass a bylaw implementing the CAL. The CAL is set at \$0.40 per connection per month;<sup>122</sup> telecoms companies are permitted to retain \$0.04 of that amount as an administration fee. The Québec government established the fee after reviewing the operational costs of the 9-1-1 services before the legislation was implemented.

Carriers are required to remit the amounts raised to Revenu Québec, which in turn remits the CAL to the Agency for distribution amongst its municipal members. In 2012, the CAL raised gross revenue of \$42.5 million. From that amount, some \$4.25 million was paid to telecoms carriers for administration fees, and a further \$400,000 was retained by Revenu Québec for its own administration costs. Of the remaining approximately \$37.85 million, some \$37.1 million was distributed to municipal members to cover 9-1-1 costs, while approximately \$750,000 was retained by the Agency for its overhead and the cost of fulfilling its mandate, including certifying PSAPs.<sup>123</sup>

As noted above, the Agency comprises solely municipal representatives, with a provincial representative acting as an observer. Its members have developed a formula for distributing the funds available based on two principal metrics:<sup>124</sup>

1. An amount calculated based on historic revenues received from previous landline CALs (and where no such revenues existed, on the basis of an estimated amount for same);<sup>125</sup> plus
2. The remainder distributed *pro rata* based on population.

An arbitrary amount was also established for certain unorganized areas within the province which are not within municipal or regional municipal boundaries.<sup>126</sup>

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<sup>121</sup> Agence municipale de financement et de développement des centres d'urgence 9-1-1 du Québec, *Rapport d'activité*, at p.4/41 (hereafter: "Agency 2012 Annual Report").

<sup>122</sup> The tax applies to any device or connection which permits connection to 9-1-1 services. See: Agency 2012 Annual Report, at p. 10/41.

<sup>123</sup> Agency 2012 Annual Report, at pp. 8-9/41. Decisions by the Agency about how to distribute CAL funds must be unanimous; see: *An Act Respecting Municipal Taxation*, RSQ, c. F-2.1, s. 244.73(2).

<sup>124</sup> Agency 2012 Annual Report, at p. 40/41

<sup>125</sup> The amount for each municipality is 1/12 of the amount raised in either 2007 or 2008 (whichever year had the most revenue).

<sup>126</sup> Email correspondence with Serge Allen, General Manager Municipal Finance and Development Agency for Emergency 9-1-1 Call Centers in Québec, dated 5 June 2013.

With the Québec approach, the funds are distributed without regard to actual cost of operation of the underlying PSAPs and delivery of 9-1-1 services. If the revenue is insufficient, municipalities would be required to cover the deficit through normal funding channels. If there is a surplus, there is no technical limitation on how such surplus is spent. In general, there was an recognized funding shortfall before the introduction of the uniform CAL. With the new certification requirements, moreover, PSAPs had to invest in upgraded equipment, training and, potentially, staffing. As such, it was felt that there were unlikely to be any significant surpluses available. Indeed, the vast majority of municipalities (96%) reportedly direct the Agency to make the payments to the relevant PSAP, rather than to the municipality itself.<sup>127</sup> The amount of the CAL is expected to be revisited in 2014.<sup>128</sup>

The Agency itself does not retain any significant funds for special projects, system expansion or upgrades, or similar matters.

It should be noted that the CAL appears to have been set at a level that would result in significantly more funds being available than had been the case with the comparable landline levy. On its website, the Agency estimated that the new CAL would raise approximately \$13.5 million more than the previous landline CAL. The 2012 figures are actually \$16.5 million higher.<sup>129</sup> These additional funds were expected to be used to enhance the provision of 9-1-1 services, although as noted, there is nothing in the Québec statutory or regulatory structure that would require that excess funds be invested in enhancing PSAP operations.

#### **vii. Alberta**

In Alberta, PSAP operation is a municipal responsibility. Until recently, there has been little provincial oversight or involvement in the establishment or operation of PSAPs. There currently are some 25 PSAPs managing 9-1-1 services in the province. While the number of PSAPs has declined somewhat over the past decade as a result of consolidations, there are still more of them than is typical based on the experience in comparable Canadian jurisdictions.

At the time of writing, Alberta is in the process of introducing a province-wide CAL. Bill 15, *Emergency 911 Act* passed third reading on 6 May 2013 and received Royal Assent on 27 May 2013. It is expected to be proclaimed in force later this year. Unlike the CAL legislation in other jurisdictions, the Alberta statute is narrowly focused on wireless devices. The 9-1-1 levy is established under section 4. The amount is to be set by regulation (not yet promulgated), but applies only to a “wireless subscriber”.<sup>130</sup> It is currently anticipated that the CAL will be set at

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<sup>127</sup> There is, however, the possibility that the CAL is subsidizing the cost of dispatch services provided by the centres which offer PSAP services.

<sup>128</sup> Based on information provided in email correspondence with Serge Allen, General Manager Municipal Finance and Development Agency for Emergency 9-1-1 Call Centers in Québec, dated 5 June 2013.

<sup>129</sup> See the FAQ section on the Agency’s website, at <http://www.agence911.org/en/faq#68>, where it notes: that, after costs are deducted, it was expected that the municipalities would receive \$34.5 million, which was \$13.5 million more than under the old landline CAL. By 2012, the amount available for distribution had grown to \$37.5 million.

<sup>130</sup> Bill 15, *Emergency 911 Act* (Alta.), s. 4(2).

\$0.44 per device per month.<sup>131</sup> The Alberta government has not yet made public how much of an administration fee will be retained by telecom companies for collecting the CAL.

The focus on solely wireless devices means that the patchwork of local government landline agreements will also remain in place, which is neither particularly efficient nor does it ensure a fair sharing of the burden amongst users (as in some regions, landline users may not have to pay a fee for the ability to connect to 9-1-1 services and the amount paid may vary from jurisdiction to jurisdiction). The narrow focus also excludes static VoIP connections. In theory, the Minister may, by regulation, define “other purposes” for the Act, and “prescribe other devices as wireless devices”.<sup>132</sup> However, this seems an awkward approach and it is likely preferable to ensure that all existing forms of connection to 9-1-1 services are captured by statute.<sup>133</sup>

Under the Alberta structure, the Minister is responsible for establishing how CAL funds are to be distributed to PSAPs. Section 6 of Bill 15 provides:

“The Minister may, in accordance with the regulations, make payments or grants from the 911 levy ... for carrying out the purposes of this Act.”

Regulations regarding the distribution of CAL funds are still being drafted. The Alberta Emergency Management Agency (the “AEMA”) is leading the effort to consult with PSAPs and other stakeholders on how the funds are to be distributed, including the metrics which are to be used. Our understanding is that the proposed process will involve a grant system. Each PSAP will receive a basic grant, plus an amount based on population served. The suggested approach seem quite complex – separate grant applications from each PSAP are required every quarter in order to qualify for continued funding. This proposal, which may well change in the final form, seems overly bureaucratic and time consuming, both for the PSAPs involved and for the administration of the system. Initial estimates are that the administration costs (including amounts paid to the telecom companies for collecting the CAL) will amount to about 20% of the sums collected.<sup>134</sup> This contrasts unfavourably with, for example, Québec, where the total administration costs, including amounts expended on PSAP certification and standards setting, is only 12.7%.

The new legislation also permits the Minister to establish province-wide standards, guidelines and policies respecting 9-1-1 call taking processes and procedures. The AEMA has indicated that this new provision means that the province intends to “work with stakeholders to create

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<sup>131</sup> Alberta Emergency Management Agency, <http://www.aema.alberta.ca/911.cfm> accessed on 3 June 2013.

<sup>132</sup> Bill 15, *Emergency 911 Act* (Alta.), ss. 12(b) and 12(c).

<sup>133</sup> Even with the broad powers to add to the statute through regulation, it is unlikely the Minister would be able to extend the scope of the statute to include landline connections (which may also limit his ability to extend it to include static VoIP).

<sup>134</sup> Alberta Emergency Management Agency, “Emergency 911 Regulation and Program Guidelines: Public Safety Answering Point Meetings – Discussion Questions,” Undated [June 2013]. This document sets out the framework for discussion of issues relating to, among other things, how the CAL funds will be distributed and what constitutes eligible expenses. As at the date of writing, no definitive decisions had been made by the AEMA on how to manage the distribution of funds.

province-wide standards processes and procedures for 911 call taking. This will ensure consistent service delivery across the province.”<sup>135</sup>

Like the legislation in the Maritime Provinces, Bill 15 includes a provision which exempts liability for certain groups involved with 9-1-1 services. Section 11 of Bill 15 exempts the Government, the Minister, a “wireless telecommunications provider”, a PSAP operator and any of their respective employees or volunteers from liability in relation to providing 9-1-1 services or acting under the authority of the new Act or regulations. The caveat to this exemption is that the party in question must have been acting in good faith.

Interestingly, this section does not specifically exempt wireline carriers from liability. Telus provides wireless services through a subsidiary (Tele-Mobile Company), which is a separate legal entity from the one that provides the wireline backbone infrastructure for PSAPs in Alberta. As such, it is not entirely clear that the exemption from liability would apply to Telus’s provision of wireline services or the backbone infrastructure used to support the 9-1-1 system (though its liability in respect of such services may be limited in other ways, including through the terms of the tariffs issues by the CRTC).

### **c. Approaches in Other Jurisdictions**

The approaches of two other jurisdictions also were reviewed as part of the gathering of background information on 9-1-1 systems.

#### **i. Manitoba**

Manitoba does not currently have a province-wide call answer levy. Nevertheless, it does have legislation which governs and regulates the operation and functioning of PSAPs. Manitoba’s regulation of its PSAPs is provided for under *The Emergency 911 Public Safety Answering Point Act*, C.C.S.M. c. E85 (the “Manitoba PSAP Legislation”) and the corresponding regulations, *Emergency 9-1-1 Public Safety Answering Point Regulation*, Manitoba Regulation 60/2005 (the “Manitoba PSAP Regulation”).

Under the Manitoba system, although PSAP services are delivered by local government, they are subject to provincial regulation and oversight. The Manitoba PSAP Legislation requires that PSAPs be provincially licensed, and makes them subject to provincial inspection. The minister is given the power to control the operation of PSAPs, including functions performed, operational standards, training standards, procedures and equipment.<sup>136</sup> The Manitoba PSAP Legislation also:

- makes it an offence to connect automatic dialing devices to 9-1-1 services;
- makes it an offence to make a false, frivolous or vexatious call to 9-1-1 services; and

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<sup>135</sup> Alberta Emergency Management Agency, <http://www.aema.alberta.ca/911.cfm> accessed on 3 June 2013.

<sup>136</sup> *The Emergency 911 Public Safety Answering Point Act*, C.C.S.M. c. E85, s. 12.

- establishes the confidentiality standard applicable to 9-1-1 calls made “in good faith”.<sup>137</sup>

The Manitoba PSAP Legislation also includes a wide-ranging liability exemption for the provincial and local governments, an emergency service provider (police, fire, EMS and others prescribed by regulation), a licensed, not-for-profit PSAP, and their respective employees or volunteers, for:<sup>138</sup>

- responding to an emergency 911 telephone call;
- acting at the request of an emergency service provider who is responding to an emergency 9-1-1 telephone call;
- operating a public safety answering point; or
- carrying out any responsibility or duty or exercising any power under the legislation.

Employees and volunteers of “for-profit” PSAPs are granted comparable exemptions, but for-profit PSAPS, and their officers, directors and principals, are not.<sup>139</sup>

Under the Manitoba PSAP Regulation, a comprehensive regime covering matters ranging from facilities, infrastructure and equipment, to staffing, training and records keeping, is established for PSAPs in the province. PSAPs are mandated to have back-up locations and fail-over procedures. They also are required to have quality assurance processes and performance reviews and are subject to inspection by the province.<sup>140</sup>

Actual operating procedures appear to be established at the PSAP level, rather than New Brunswick model, where they are prescribed by the province. One approach taken by the Winnipeg Police Service in relation to 9-1-1 call handling, is that 9-1-1 operators are expected to “confirm that an emergency exists” as part of the caller interrogation.<sup>141</sup> In general, the policy in British Columbia is to pass the caller to the requested emergency service agency, without further interrogation. Interrogation as to the nature of the emergency would only occur where the caller is uncertain as to which agency he or she requires.

## ii. State of Kentucky

The manner in which PSAPs are operated and CALs managed in Kentucky stand in contrast to the more centralized approaches found in Canadian jurisdictions. It is useful to consider, if only to understand how decentralized some systems are and the problems that such decentralization can pose. It should be noted, however, that all 50 American states and the District of Columbia,

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<sup>137</sup> *Ibid.*, ss. 8(1), 8(2) and 10.

<sup>138</sup> *Ibid.*, s. 7(1).

<sup>139</sup> *Ibid.*, ss. 7(2), 7(3).

<sup>140</sup> *Emergency 9-1-1 Public Safety Answering Point Regulation*, Manitoba Regulation 60/2005, *passim*. On alternate locations, see: s. 14; quality assurance and performance reviews, see s. 20; provincial inspections are covered in s. 22.

<sup>141</sup> Information provided by Inspector Rick Greenwood, RCMP, based on the Winnipeg Police Service, *Communications Manual: 911 Policies and Procedures* (2011).

impose 9-1-1 CALs on wireless devices and all permit the imposition of CALs on landlines. The CAL fees for wireless range as high as \$3.00 per month.<sup>142</sup>

Kentucky is approximately one-third the area of British Columbia, with a smaller population.<sup>143</sup> PSAP operation is primarily a local city and county matter, and has seen very little in the way of consolidation. In 2011, it was reported that Kentucky had 109 certified PSAPs, with an unknown number of additional, unregistered PSAPs located at universities, airports and army bases.<sup>144</sup> These noncertified PSAPs are not tracked in any way by the state. 9-1-1 services are a local government responsibility, but the service is optional, as there is no federal or state law which requires it be provided.<sup>145</sup>

Local governments are authorized to impose landline call answer levies, while the state imposes a levy on wireless service providers. The landline CALs in Kentucky range from no fee to \$4.25 per month. While the legislation permitting the imposition of a landline CAL restricts the use of the funds to expenditures on the “911 emergency communications system”, it does not define what is meant by that phrase or prevent local governments from accumulating surpluses.<sup>146</sup> In general, revenues from the landline CALs have declined over recent years.<sup>147</sup>

The State plays a role in collecting and distributing the wireless CAL, which is set at \$0.70/month. The revenue from this source appeared to have plateaued. The only right that the State has to regulate PSAP operations relates to establishing standards for handling of 9-1-1 calls from wireless devices, and distributing the funds from the wireless CAL. The State use the funds to help local governments and wireless providers defray some of the costs of providing 9-1-1 services to wireless customers. It also provides funding to local governments on a grant-basis, to help upgrade PSAP equipment and encourage PSAP consolidation.

The fragmented nature of PSAP operation, and separation of local government – which is responsible for the service – from the most readily available source of funding for that service

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<sup>142</sup> Information from the NENA website: <http://www.nena.org/?page=911RateByState>, accessed on 6 July 2013. Alaska permits local counties to determine whether to charge a fee on wireless connections. Some states (e.g., California), have established a tax rate based on phone usage. Wisconsin does not have a wireless charge for 9-1-1 services *per se*, but they do charge \$0.75/month per connection as a “police and fire protection fee”, which is used to fund state aid to municipalities and counties for emergency services. See: Wisconsin Legislative Council, *Staff Brief: 911 Communications*, SB-2012-04 (12 July 2012), at p. 10; [http://legis.wisconsin.gov/lc/publications/sb/sb\\_2012\\_04.pdf](http://legis.wisconsin.gov/lc/publications/sb/sb_2012_04.pdf).

<sup>143</sup> The population of Kentucky is approximately 4.0 million, while B.C.’s population is approximately 4.4 million.

<sup>144</sup> Legislative Research Commission, *9-1-1 Services and Funding: Accountability and Financial Information Should be Improved* (2011) at pp. 5, 9. There are also some unregistered PSAPs operated by local governments. The Federal Communications Commission lists more than 190 PSAPs for the State of Kentucky, which is almost as many as exist in all of Canada. See: FCC Master PSAP Registry, downloadable at: <http://transition.fcc.gov/pshs/services/911-services/enhanced911/psapregistry.html> accessed on 6 July 2013.

<sup>145</sup> Legislative Research Commission, *9-1-1 Services*, at p. 13.

<sup>146</sup> *Ibid.*, at p. 10 and 61.

<sup>147</sup> *Ibid.*, at p. 10.

(wireless CALs), has led to significant financial challenges. These problems also have been exacerbated by the failure at the local level to manage PSAP and related dispatch functions efficiently. The number of PSAPs and dispatch centres greatly exceed the number required to provide efficient and effective services to the public, and necessarily increases the overall cost of the operation of the system. As noted in a 2013 report by Kenton County, Kentucky, examining the financial problems facing its 9-1-1 system:<sup>148</sup>

“...the Committee unanimously supports the further consolidation of the ... dispatch systems. Lives would be saved through improved response times while creating efficiencies that would save tax dollars. *It was surprising to many on the Committee to see the amount of time and energy that has been invested in this process over the past 15 years with the taxpayers still not able to enjoy the benefits of county-wide dispatch.*” **[emphasis added]**

The Kenton County report noted that traditional landline levies were declining significantly. To keep pace, local municipal governments had increased the amount of the levy, in some cases to as much as \$4.25 per line, per month. Funding from wireless levy raised by the State was limited, and the county was facing a deficit of more than \$2 million per year for its 9-1-1 operations.<sup>149</sup> The solution proposed by the report was to add an additional levy to electricity meters, to once again broaden the tax base.<sup>150</sup>

The issues in Kentucky highlight several matters. First, the failure of local governments to manage the delivery of 9-1-1 services efficiently greatly impacts the cost of delivering such services and, ultimately, negatively impacts public safety.

Second, separating the government with responsibility for the service from the most relevant source of funding is problematic. By creating a wireless levy at the state level, but not providing a mechanism either for local government to ensure that the funds were distributed as required or (alternatively) giving the State authority to drive greater efficiency in the system, means that the levy does not necessarily translate into better service to the public. The State itself noted the problem: while jurisdictions like Kenton County struggle financially, other counties (which are acquiring PSAP services in a more efficient fashion, by contracting for them through the State police), were able to claim wireless funding and were accumulating large surpluses.<sup>151</sup>

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<sup>148</sup> Funding Review Panel, *Funding 911 Services: A Report and Recommendation by the Kenton County 911 Funding Review Panel* (May 2013), at p. 6. The report noted that even greater benefits could be enjoyed if they moved to a three-county 9-1-1 service and dispatch function.

<sup>149</sup> The report somewhat blurred the distinction between 9-1-1 services narrowly defined and the broader issue of emergency dispatch and emergency communications, and the committee reported problems separating out how much was spent on 911. Nevertheless, it had three dispatch centres serving approximately 160,000 people and they estimated that the service was costing some \$5 million annually to deliver. *Ibid.*, at p. 7; on the “breadth” of the services covered, see p. 8. Notwithstanding the committee’s “surprise” at what was funded, only one item noted seemed broader than usual: the provision of mobile display terminals in police vehicles.

<sup>150</sup> *Ibid.*, at p. 12

<sup>151</sup> Legislative Research Commission, *9-1-1 Services*, at pp. ix, 27, 42-43.

## **8. Issues, Challenges and Options for Introduction of a Provincial CAL Legislative Responsibility**

### **a. Legislative Approach and Issues**

#### **i. Legislation/Regulation**

The introduction of a CAL, along with any corresponding system for managing and allocating funds and regulating the operation of PSAPs (and possibly other elements of the emergency communication system) will require senior legislation and regulations. There are no obvious statutory structures into which these types of provisions easily could be inserted, and the legislation is sufficiently particular and potentially complex, that it will be better to have a standalone statute. That is the approach taken in each of the other Canadian jurisdictions examined (with the possible exception of Québec, which has a very different legislative structure to that of the common law provinces).

The legislation and related regulations will need to deal with a range of issues. Based on the legislation implemented in other Canadian jurisdictions, the following non-exhaustive list of matters will need to be considered as part of the legislative drafting process:<sup>152</sup>

- The scope of the CAL, including:
  - Defining what the CAL covers (i.e., the devices/connections against which the CAL is charged) and providing a process for updating the list of covered devices and connections. In general, it is recommended that all services (and attendant devices) which connect to 9-1-1 services should be subject to a CAL, including landlines, wireless devices and VoIP connections; and
  - Defining the scope of permissible services and costs which may be funded by the CAL.
- The amount of the CAL (which should be set in the regulations) and the process for amending or reviewing same.
- The process for collecting and remitting the CAL, including:
  - Frequency of remittance;
  - Issue of bad debt (note that not all Canadian jurisdictions permit telecommunication companies to make allowances for bad debt);
  - Amount of the administration fee to be permitted;
  - Telecommunication companies' reporting requirements; and
  - Confidentiality of sensitive economic information.
- Level and extent of regulation of the system (and definition of what can be regulated) in terms of PSAP operations (including standards, training, equipment, infrastructure, etc.). This will also require a specified process for developing, overseeing and implementing such regulation.
- The system/process for holding, managing and allocating the CAL funds, and managing any regulation of the system, including:

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<sup>152</sup> Other issues include penalties for misusing the 9-1-1 system, requirements for civic addressing,

- Appropriate metrics / formula for allocation and a process for revising same;
  - Note that the complexity of the allocation will vary materially depending on the scope of the CAL (in general, the broader the CAL scope, the more complex the allocation system);
- A process for allocating funds not covered by any set formula (i.e., if the distribution process includes a granting component);
- The system for managing this allocation should be intrinsically connected to any regulation of the operation / function of PSAPs;
- A clear definition of the roles and responsibilities of the various stakeholders, including a well-defined process for obtaining technical and operational guidance to inform decision-making; and
- Responsibility for undertaking educational initiatives in relation to 9-1-1 services.

The principal issues which need to be addressed are closely interconnected. The scope of the CAL (what devices are covered, and what the funds may be used for) impacts the amount of the CAL. The scope also impacts the complexity of the allocation process and system needed to manage and distribute the funds: the broader the range of activities which are permissibly financed or subsidized through the levy, the more complex the approach required for allocating the funds.

Similarly, the broader the scope of the CAL (in term of what can permissibly be funded), the more important it will be to ensure that there is centralized oversight and control of the operation of the relevant aspects of the emergency communication system, to ensure that its public safety objectives are being met in a manner which is both effective and efficient. These interconnected issues are considered in greater detail in sections 8(b), (c) and (d) below.

For the purposes of this paper, based on discussions with the project sponsors it is assumed that the legislation would seek to impose a CAL on all devices which can connect to 9-1-1 services.

## **ii. Managing Liability**

Five of the seven Canadian jurisdictions surveyed established some form of statutory liability protection for the operation of the 9-1-1 system in their jurisdictions. No such general protection exists in British Columbia, with the exception that E-Comm, as an “emergency communications corporation,” enjoys a broad immunity from liability under section 10 of the *Emergency Communications Corporation Act* (B.C). The exemption enjoyed by E-Comm provides as follows:

- 10      (1) In this section, "protected person" means the following:
- (a) an emergency communications corporation;
  - (b) a current or former member of an emergency communications corporation;

(c) a current or former director, employee or agent of an emergency communications corporation.

(2) No action lies and no proceedings may be brought against a protected person, and a protected person is not liable for any loss or damages suffered by any person, in relation to anything done or omitted to be done by the protected person in relation to the provision of or failure to provide emergency communications services by an emergency communications corporation.

(3) As an exception, the immunity from legal action otherwise provided to a person by subsection (2) does not apply if the person has been guilty of malice or wilful misconduct in relation to the subject matter of the action.

If liability protection is to be extended to PSAP operations, a decision will need to be made if that protection should be more broadly cast (akin to that provided to E-Comm), or limited to the 9-1-1 call answer / transfer function. If the narrow approach is taken, then a very clear definition of the 9-1-1 function will need to be included.

If a broader approach is taken (and each PSAP's related dispatch function is also protected), then the further issue of whether such protection would also be extended to other SSAPs in the province would need to be considered.

Regardless of whether a narrow or expansive approach is taken, granting such protection raises the issue of establishing and enforcing consistent standards and procedures. In each case where other jurisdictions have granted such protection from liability, they have established a corresponding set of standards and requirements for PSAP operations. In some respects, it may almost be seen as being a trade-off: in exchange for receiving liability protection, there is a need to accept centralized standards and oversight.

This question raises a number of broad policy issues and potential concerns (not all of which are addressed here) which would require more detailed analysis than is possible in this paper. It is an issue of concern, however, both to PSAPs and local governments, and one which should be examined closely as part of this process.

#### **b. Scope of Services to be Funded by a CAL**

The scope of the services to be funded by a province-wide CAL is a policy decision to be made by local governments and the province.<sup>153</sup> Determining the scope will impact a series of other decisions, including the quantum of the CAL, the allocation methodologies required, the governance and oversight systems needed to manage the process, and the issue of establishing recognized standards of service and operational requirements for recipients of CAL funding.

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<sup>153</sup> For the purposes of this section, references to the "scope" of the CAL refers exclusively to the services which permissibly may be funded under such levy, and not to the types of devices or connections against which such a CAL would be charged.

As noted in the discussion of comparable Canadian jurisdictions, there is a range of approaches to the question of the appropriate scope for a CAL. Saskatchewan, Nova Scotia and New Brunswick permit the funding to be used for a broader range of services than what may narrowly be considered “9-1-1 services”. Conversely, Prince Edward Island and Alberta are more restrictive in how CAL funds are utilized, and define the scope using a narrow definition of 9-1-1 services. Québec utilizes an agreed formula for allocating CAL funds, but does not statutorily prescribe how those funds are to be spent.<sup>154</sup>

The options to be considered for the scope of a CAL include:

- Funding only a narrowly defined concept of 9-1-1 services; and
- Funding 9-1-1 services and funding some portions of the other components of the emergency communications continuum, such as:
  - Emergency service dispatch functions;
  - Wide-area emergency radio networks; and/or
  - Emergency service agencies’ radio connections.

In each case, the relevant capital, administrative and operational costs are assumed to be included in what potentially is being funded, though obviously distinctions could be made depending on the defined scope and related allocation model.

A caveat should be noted here. No attempt has been made to assess the aggregate cost of dispatch and radio network services in the province. The amounts, however, are substantial and, in the unlikely event that the CAL was to provide full funding for all aspects of the emergency communications continuum, the impact on the required quantum of the CAL would be significant. To put this in perspective, the cost of just E-Comm’s operation (which includes 9-1-1 services, fire and police dispatch services and a wide-area emergency radio network) is in the range of \$43.7 million per year.<sup>155</sup> The aggregate cost of operating all 9-1-1 services, dispatch and emergency radio systems in the province would likely be at least several times that figure. It is assumed, therefore, that if a decision is made to provide any funding to other aspects of the emergency communications system, that funding would only be partial.

Within the context of what would need to be funded to provide 9-1-1 services (narrowly conceived), based on other Canadian jurisdictions’ legislation, the following matters are generally considered directly “in scope”:<sup>156</sup>

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<sup>154</sup> Though, as noted in section 7(b)(vi) above, in practice the money is directed to the PSAPs. What is not clear is whether the CAL monies are also being used to fund or subsidize dispatch operations by those centres.

<sup>155</sup> E-Comm, *2011 Annual Report to the Community* (2012), at p.12. The cost of the BCAS dispatch system, with its four inter-connected SSAPs, is a further approximately \$23 million per year. There are more than 70 dispatch centres in the province.

<sup>156</sup> This is based on a review of the Nova Scotia, New Brunswick and Saskatchewan legislation and regulations. It omits reference to services – such as poison control in Nova Scotia and the wide-area radio network in Saskatchewan – that falls outside of the narrow conception of 9-1-1 services. PEI does

- the capital and operating costs directly attributable to providing 9-1-1 services, including, staffing, training, equipment, IT systems and related software, and allocations for infrastructure;
- the costs of establishing and operating any committees formed to advise on the operation of the 9-1-1 system or any aspect of it (including participation as required at the federal level, with the relevant CRTC committees);
- the costs related to the development of any standards, guidelines or operational procedures related to 9-1-1 services, and of providing oversight of the operation of the system;
- the costs of public education initiatives in relation to the 9-1-1 system (e.g., to address the problem of Abandoned Calls, etc.);
- some or all of the costs related to civic addressing; and
- some or all of the costs related to developing and maintaining accurate digital maps.

It is worth observing that the Province has looked at the issue around developing a resilient, interoperable provincial emergency radio network, to replace the patchwork of provincial, federal and local government networks currently in place. Similar radio systems have been established in both Saskatchewan and Alberta. When this issue was considered within Emergency Management British Columbia, the possibility of funding some or all of this undertaking through a CAL was raised at that time.<sup>157</sup>

If a decision is made to broaden the scope of the CAL, the range of permissible undertakings will need to be carefully considered and properly identified. Care also should be taken to ensure that, when such new source of funding is made available, any new expenditures represent efficient use of the funds.

### **c. Allocation and Management of CAL funding**

The process for allocating and managing the funds raised from a province-wide CAL will require careful consideration. Clearly, the broader the scope of the CAL, the more complex the allocation process will become as there will be more considerations in determining an appropriate allocation.

As a precursor to this discussion, however, it should be noted that some concerns were expressed during the information gathering process that the CAL funding should not become an undirected source of revenue for any level of government. In other words, that it should remain focused on its defined intent. Concerns were also expressed that primary control of the funds should remain with local government, which is principally responsible for the provision of the service.

There are a number of different approaches that can be taken to distributing CAL funds, including:

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not provide a detailed description of what can permissibly be funded from its CAL, outside of saying that it relates to “E911 services” for which the province is responsible.

<sup>157</sup> Based on discussions with Mike Webb, Vice-President Technology Services, E-Comm.

1. A metric-driven formula, where relevant cost drivers and other factors are used to divide the available funding amongst either the various PSAPs or the local governments (e.g., as in Québec);
2. A grant-based system (e.g., as in Alberta);
3. A negotiated amount, based on either arm's length negotiation with private parties (PEI), or negotiations between government entities (e.g., as in New Brunswick, Nova Scotia<sup>158</sup> and Saskatchewan).
4. A hybrid model that blends two or more of the above approaches.

Given the situation in British Columbia, a hybrid model, combining a metric-driven formula and grant based system, is probably most appropriate for distributing the CAL. There will still be negotiated arrangements between local governments and PSAP service providers (e.g. with the RCMP OCCs, or with E-Comm), but the numbers generated through those negotiations could become one of the metrics in the allocation formula.

**Use of a Fixed, Metric-driven Formula.** The PSAPs in British Columbia vary in size and relative cost efficiency. On a per call or *per capita* basis, larger centres generally tend to be financially more efficient. The largest PSAP in the province provides service to nearly 2.4 million people, handling between 900,000 – 1,000,000 9-1-1 calls per year. It costs approximately \$1.55 *per capita* or a little over \$4.00 per 9-1-1 call, to operate E-Comm's PSAP function. Operations in smaller centres do not match this cost profile. Costs for other centres varied widely (and the numbers which were generated need to be treated with caution, given the uncertainty about how some centres reported the total number of calls, and the difficulty in separating out the cost of 9-1-1 services from dispatch). Still, E-Comm's 9-1-1 services cost approximately 1/3 less on a *per capita* or per call basis, than the operation of the second least costly PSAP. The unweighted average "cost per call" across all 12 PSAPs was approximately \$10; the unweighted average cost *per capita* for delivering 9-1-1 services was approximately \$3.50.<sup>159</sup> The median cost for 9-1-1 services was \$9.08 per call and about \$3.55 *per capita*.

The difference in cost structures makes it challenging to develop a fixed, metric-driven formula that covers each PSAP's current cost of operations, without creating a significant surplus in some centres. At the same time, a fair argument can be made that cost efficiencies should be sought, which will reduce the relative cost gap. It needs to be recognized, however, that this gap will never entirely be eliminated. As noted above, regional district governments have already worked to aggregate service delivery to increase efficiency. This process should be further encouraged and supported through any system that emerges from this process.

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<sup>158</sup> Nova Scotia actually operates a hybrid system, since they have an allocation process for covering or subsidizing certain local government costs related to municipal addressing, and for funding poison control services. The primary PSAP funding, however, is based on a contract with the province, which establishes a "cost per qualified 9-1-1 call" and makes the province responsible for training PSAP operators.

<sup>159</sup> The "unweighted average" here means the sum of the average cost *per capita*, or average cost per call, for each centre, divided by the number of centres. Where more than one PSAP served the same regional district (i.e., in the Capital Regional District and the Fraser Valley Regional District), the results for the PSAPs were aggregated before the calculation was made. This calculation does not include any figures for the City of Nelson.

While a system based solely on a metrics-driven formula may not be the entire answer, it could provide the cornerstone for the bulk of the funding of the 9-1-1 service itself. The metrics that should be considered include:

1. Call volumes. Call volumes are one of the principal drivers of staffing requirements and therefore the cost of operating a PSAP. Call volumes are largely a function of population, though it is probably a better measure than permanent population, as a number of regional districts have sizeable summer and holiday population booms that impact service delivery requirements. Even use of this metric, however, needs to be carefully considered. The Kelowna OCC, which handles calls for nine regional districts in the province's central interior, sees 60% more calls during August (its peak month) than it does in February.<sup>160</sup> The realities of PSAP operation make it challenging to staff up only for one or two months, which means that the overall costs for the Kelowna OCC are impacted by having to maintain somewhat higher staffing levels year round.
2. Historical Amounts Raised from Landline CALs.<sup>161</sup> One criterion established by local governments when undertaking this process was that a province-wide CAL should provide net "new" revenues. Given the disparity in populations, call volumes and resulting cost structures, some allowance will therefore need to be made to ensure that, at a minimum, the funding received is not less than currently is obtained by those jurisdictions which use a landline CAL. A similar approach was used in Québec when its allocation model was established – historical amounts raised through each municipality's landline CAL forms part of the formula used to distribute funds from Québec's province-wide CAL.
3. Actual Cost of Operation. If there is a disparity between the actual cost of operating the PSAP function, and the amount raised from a metric such as call volume (or population, or the number of devices in a region) or historical CALs, there may need to be method of adjusting for such additional costs. This does flag the cost efficiency issue noted earlier and it may be advisable to put upper limits on this type of adjustment.
4. Cost of Improvements. The cost of improvements to the PSAP system, particularly if these are mandated through any process established by the CAL legislation, might be treated as a separate item.

**Grant-based System.** The model used by Alberta for its grants-based system appears overly complex. Nevertheless, blending an appropriately designed granting system with a metric-driven formula would offer great flexibility. It would allow adjustments to be made on an individual case basis in relation to 9-1-1 services. It also would provide an appropriate methodology for using some of the CAL funding for broader support of the emergency communications system, if it is decided that such an extended scope is appropriate for the CAL.

A grant system will require that appropriate parameters be developed regarding the basis on which grants will be made. For matters which fall outside of the narrow conception of "9-1-1

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<sup>160</sup> Based on call answer statistics supplied by the Kelowna RCMP OCC: Email from B. Figgitt, SE District Deputy Leader, 13 June 2013.

<sup>161</sup> In the case of Prince Rupert, this would also have to take into account that city's wireless CAL.

services”, for most undertakings it should probably be approached on a “cost-sharing” basis with the relevant local jurisdiction(s).

Some of the undertakings that could be considered for funding assistance through a grants process would include:

- upgrading of dispatch centres to manage NG911;
- upgrading the emergency radio communication system in the province;
- improving interoperability between different PSAPs and SSAPs and emergency response agencies;
- developing appropriate connections between the Provincial Regional Emergency Operations Centres and local government Emergency Operations Centres to the 9-1-1 system;
- assisting with the cost of consolidating PSAP or SSAP operations to improve overall system efficiencies; and
- assisting with the costs associated with improving the overall resilience and robustness of emergency communications centres and related systems in the province.

### **Managing CAL Funds.**

The management and allocation of CAL funds will require some form of regular and consistent oversight. If a grants-based allocation system is included as part of the structure, a process for reviewing and approving grants will also be required.

As noted in the introduction to this section, the composition of this entity should reflect the predominant responsibility that local governments have in delivering the services. Care also should be taken to ensure that the monies raised through the CAL can only be used to fund the objects defined by the legislation.

Conceptually, the approach taken by Québec is worth consideration. In that province, a separate agency, the board of which comprises local government representatives and a non-voting provincial appointee, is responsible for overseeing allocation of the CAL funds and certifying the operation of PSAPs. The province acts as agent for this organization when collecting the CAL funds (so, such funds do not form a part of the provincial revenues).

A comparable structure could be considered for British Columbia. It may be that a new organization should be created; alternatively, some success in the past has been enjoyed using the UBCM as a mechanism through which such structures have been created in the past (e.g., as in the original creation of the Municipal Insurance Association). One important limitation imposed on the Québec agency, is that its administration costs are limited to 3% of the net funds collected. Again, this is a good concept, which will inhibit the creation of a large bureaucracy which can so often attract negative attention.

To ensure that overall administration costs remain low, a single point of remittance should be created for the CAL. To the extent that this can be done inexpensively through an existing function of the provincial government, as is done in Québec, that approach would likely be the

most straightforward. In this case, the Province would collect the funds as agent on behalf of the entity established to, or charged with, managing the allocation of the CAL and overseeing the operation of the PSAPs.

#### **d. Governance and Oversight Issues**

This section examines the need for appropriate governance and oversight of the emergency communications system in the province, and roles that should be considered for each of the principal stakeholders, including the province, local government, the PSAPs, SSAPs and the emergency services.

##### **i. National Participation Issues**

The introduction of NG911 will substantially affect how the emergency communications system operates. It will significantly impact capital and operating costs for PSAPs, SSAPs and front line emergency services. There is still great uncertainty surrounding the specification of NG911 and how it will be rolled out. At a recent CITIG conference in Ottawa,<sup>162</sup> the issue of governance in relation to the development and introduction of NG911 was discussed extensively, though no ready solution or approach appears to have been adopted.<sup>163</sup> It was suggested at the conference that governance issues relating to NG911 might best be managed at the SOREM<sup>164</sup> level.

There is a need for the provincial government to take an active and leading role at the SOREM level, to ensure that the province's interests are properly represented and protected in relation to the introduction of NG911.

##### **ii. PSAP Regulation, Standards and PSAP Operational Role**

Every Canadian jurisdiction that has introduced a province-wide CAL has also introduced (or established a process for creating) standards applicable to PSAP and related SSAP operations. While the extent of regulation varies, in some cases it extends to detailed requirements relating to infrastructure, equipment, staffing levels and operational procedures. Standards and procedures are enforced principally through regulation and the development of binding standard operating guidelines and procedures.

As noted at the outset of this paper, appropriate standards are essential to the safe, effective and efficient operation of emergency services. The introduction of a province-wide CAL offers the opportunity to establish a process for setting standards for PSAP operation in the province. Ideally, that process would be consensual, based on input from affected stakeholders, including the province, local government, PSAP and SSAP personnel and the telecommunications

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<sup>162</sup> CITIG is the Canadian Interoperability Technology Interest Group. The conference was entitled, "NG9-1-1 National Governance and Coordination Workshop", held on 10-11 June 2013.

<sup>163</sup> Based on discussions with Mike Webb of E-Comm, who attended the conference, and highlighted the need for there to be active provincial involvement at a senior level.

<sup>164</sup> SOREM means "Senior Officers Responsible for Emergency Management" and is a cooperative federal-provincial body that considers emergency management issues.

industry. Such standards should be based on those developed by organizations such as NENA and NFPA, and which are widely used throughout North America. Any standards established should reflect minimum requirements.

Operational issues – such as the challenge of dealing with Abandoned Calls, appropriate quality assurance and quality improvement processes, the definition of the role of 9-1-1 call takers, and addressing problems arising from unregistered cell phones – also would be within the purview of this committee’s consideration. As new developments emerge which impact PSAP operations specifically or the operation of the emergency communication system generally, this group also could advise on appropriate policies for dealing with such issues (including whether any required changes should be funded, in whole or in part, from the CAL).

At present, the Association of 911 Providers of British Columbia offers the principal forum through which issues affecting British Columbia PSAPs and SSAPs are considered.<sup>165</sup> Any user/stakeholder committee established under or through the CAL legislation would have a similar role, but also would be responsible for developing recommendations that potentially would be translated into binding requirements. This user committee should report to and advise the entity established to manage and allocate CAL funds. The operation of this user committee should be supported by funding from the CAL.

Where the implementation of consensus standards impacts the cost of providing PSAP services, such additional costs would need to be factored into CAL funding arrangements. In some cases, the costs may be transitional in nature and would best be handled through a grants-based process. In other cases, if the requirements changed the cost of on-going PSAPs operations, those additional costs would need to be covered through operational funding increases.

#### **e. Amount of the CAL and Administration Fee for CAL Collection**

The amount of the CAL will depend on the scope of services to be funded by it. Estimating the amount that can be raised requires knowing how many landline, wireless and other connections exist in the province. While we do not have definitive numbers for either wireless or landline connections, we can make a reasonable estimate. The UBCM was advised that there is an estimated 3.4 – 3.5 million wireless devices in the province.<sup>166</sup> The 2012 Telus annual report indicates that it has a total of 3.4 million network access lines,<sup>167</sup> the vast majority of which will be in British Columbia and Alberta (though they do provide some residential voice service in eastern Québec and business network access services nationally<sup>168</sup>). With the bulk of Telus’s

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<sup>165</sup> The Association is principally focused on bringing education and knowledge of issues to its members. It does not act as an advocacy group for its membership.

<sup>166</sup> Email from Ken Vance, UBCM Senior Policy Advisor, 14 May 2013, relaying information from the [Canadian Wireless Telecommunications Association](#).

<sup>167</sup> Telus, *2012 Annual Report*, at p. 3.

<sup>168</sup> *Ibid.*, at p. 67

landline business being in the west, it is reasonable to estimate that there are probably about 1.6 – 1.7 million landline connections in British Columbia.<sup>169</sup>

These two categories will represent the vast bulk of connections. Assuming, therefore, that there are approximately 5.1 – 5.2 million devices which would be paying a CAL, the following revenue would be generated:

Net CAL charge/month <sup>170</sup>	Net CAL charge/year	Approximate number of connections	Approximate Revenue
\$0.21	\$2.52	5.1 – 5.2 million	\$12,852,000 – \$13,104,000
\$0.25	\$3.00	5.1 – 5.2 million	\$15,300,000 – \$15,600,000
\$0.30	\$3.60	5.1 – 5.2 million	\$18,360,000 – \$18,720,000
\$0.40	\$4.80	5.1 – 5.2 million	\$24,480,000 – \$24,960,000
\$0.50	\$6.00	5.1 – 5.2 million	\$30,600,000 – \$31,200,000

These estimates should be treated as indicative. It will be necessary to determine from discussions with the telecommunication providers the number devices in the province that would be covered by the CAL.

As a reminder, the monthly CALs in other provinces, before deduction of the collection fee permitted to be charged by the carriers, range from a low of \$0.40 in Québec (less a \$0.04 collection fee) to a high of \$0.70 in PEI (less a \$0.07 collection fee). Alberta is proposing to charge a fee of \$0.44 / month per wireless device – the permitted collection fee has not yet been publicly released. Existing landline CALs in British Columbia range from \$0.47 per line per month to \$2.72 per line per month.

It should be noted that the number of landline connections can be expected to decrease over coming years. British Columbia also already has a relatively high penetration of the wireless market (approximately 82%, according to the [Canadian Wireless Telecommunications Association](#)). Individuals who currently have both types of connections may increasingly drop their landline connections, which could result in the total revenue dropping over time if landlines are dropped faster than new wireless connections are added. That may require that the CAL be adjusted in subsequent years.

The final issue that will need to be considered is the administration or collection fee that telecommunication companies will be permitted to charge for collecting and remitting the CAL. As noted earlier in this report, landline CALs were rejected by some jurisdictions – most notably

<sup>169</sup> British Columbia's population is 55% of the aggregate population of BC and Alberta (~4.4 million of ~8.0 million in total). Alberta also has a higher penetration of wireless (approximately 87% in 2010), which suggests it may have a lower overall number of landlines *per capita* than British Columbia. On the penetration of wireless in Alberta, see: <http://www.statcan.gc.ca/daily-quotidien/110405/dq110405a-eng.htm> .

<sup>170</sup> References to “net” CAL means the amount received after deduction of any administration fee by the telecommunication companies.

Metro Vancouver – on the grounds that the tariffed administration fee of \$0.07/month/landline was excessive.

As a general principle, any administration fee that is permitted to be charged should be limited to the actual cost of collecting and remitting the CAL. Under the existing system, arrangements for a landline CAL are made on a jurisdiction-by-jurisdiction basis. The amount of the CAL varies from area to area in the province, and remittance is to each relevant jurisdiction. This particularization undoubtedly increased the related administration costs of the telecommunication companies.

With a province-wide, uniform CAL, and a central point for remittance of the funds, the administration costs for telecommunication companies will be minimal. While discussion with the industry on this question should be undertaken, a significantly lower administration fee seems warranted.

## Appendix A: Glossary

The following are the principal abbreviations or acronyms used in the paper:

**Abandoned Calls** means calls received by a PSAP which have been prematurely terminated before the call can be assessed and transferred to a dispatcher or to an SSAP.

**BCAS** means the British Columbia Ambulance Service.

**CAL** means call answer levy, being a levy on devices or connections which enable a person to contact 9-1-1 services.

**Central Coast** means the Central Coast Regional District.

**CLEC** means a competitive local exchange carrier, being a Canadian carrier providing local exchange services and who fulfills all the local competition entry obligations and requirements as defined in CRTC Decision 97-8 and subsequent decisions that have modified the requirements set out in CRTC Decision 97-8.

**CRTC** means the Canadian Radio-television Telecommunications Commission.

**DND** means Department of National Defence.

**E-Comm** means Emergency Communications for Southwest British Columbia Incorporated, a corporation which manages a combined 9-1-1, dispatch and emergency radio network located in Vancouver, B.C.

**EMO** means the Nova Scotia Emergency Management Office.

**ESWG** means the Emergency Services Working Group, a committee which was formed by and reports to the CRTC.

**ILEC** means “Incumbent Local Exchange Carrier” which, in British Columbia, is Telus.

**NB-OPD** means the New Brunswick Operating Procedures Directive, which are the mandatory operational procedures established by the Province of New Brunswick in relation to the operation of that province’s PSAPs.

**NENA** means the National Emergency Number Association, an organization which examines operational, technological and procedural issues affecting emergency communications centres and which has established certain consensus standards applicable to PSAP operations.

**NFPA** means the National Fire Protection Association, a consensus-based standards-setting organization which has established standards for various aspects of the operation of fire and other emergency services.

**NFPA 1221** means *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* (2013 Edition), issued by the NFPA, which is a standard for the operation of emergency communication centres, including 9-1-1 services.

**NG911** means Next Generation 9-1-1 services, which will be an IP-based system that will permit a greater range of connections to emergency communication centres by the public, and enable the uploading of additional data types, such as text, pictures and video.

**NRRM** means the Northern Rockies Regional Municipality.

**OCCs** means the operational communication centres operated by the RCMP. There are six OCCs in British Columbia, each of which operates as a PSAP.

**PEI** means the Province of Prince Edward Island.

**PPSTN** means the Provincial Public Safety Telecommunications Network, a province-wide emergency radio system operated by a partnership comprising the Province of Saskatchewan, SaskPower and the RCMP.

**PSAP** means Public Safety Answering Point, which is the entity responsible for receiving 9-1-1 calls from the public.

**RDCK** means the Regional District of Central Kootenay.

**RDCO** means the Regional District of Central Okanagan.

**SLRD** means the Squamish-Lillooet Regional District.

**SSAP** means a Secondary Safety Answering Point, which is responsible for police, fire, ambulance or other emergency service dispatch, to which 9-1-1 calls are transferred from a PSAP.

**Steering Committee** means the steering committee comprising representatives from the province and local government formed to consider the issues regarding the implementation of a province-wide CAL.

**UBCM** means the Union of British Columbia Municipalities.

**VoIP** means Voice over Internet Protocol which is a communications protocol that allows for telephonic communication via the Internet.

## Appendix B: Forms of Survey



Union of BC Municipalities  
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### Local Government Survey

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15 May 2013

#### Local Government 9-1-1 Services Questionnaire

##### Introduction & Background

UBCM in cooperation with the Province has established a Steering Committee to examine the delivery of 9-1-1 emergency call handling services and develop a plan for implementing a call answer levy to support and improve 9-1-1 services in British Columbia.

The purpose of this survey is to collect information on where 9-1-1 services currently are being delivered and the cost of providing such services through Public Safety Answering Points ("PSAPs") from the perspective of local government. The goal is to assess how these services are being delivered throughout the province and to understand the costs and issues associated with them.

We would ask for your cooperation and assistance in providing this information. UBCM has retained Ian MacDonald, of Dave Mitchell & Associates Ltd., to collate and assess the responses.

The goal is to include the data from this survey in a background paper for the Steering Committee. To ensure that your responses can be included, please reply by 28 May 2013.

##### Directions and Contact Information

This form uses Microsoft Word. For text, simply click where the words "**Click here to enter text**" appears, and begin typing. Where a "yes" or "no" option is given, clicking in the appropriate box will insert an "X".

Please return all forms to Ian MacDonald at the email address below. If you have any trouble with this form or any questions about the survey, please contact:

Ian MacDonald

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## Questionnaire

**Note:** For the purposes of this questionnaire “9-1-1 call handling services” are defined as follows:

9-1-1 call handling services involve a central answer point – the PSAP – which handles emergency calls and, in simplest terms, determines:

- (1) The (approximate) location of the caller;
- (2) The nature of the emergency; and
- (3) The appropriate emergency service (police, fire or ambulance) required.

The PSAP then connects the caller to the relevant local emergency service or its dispatch agency for assistance.

1. Person completing this questionnaire
  - a. Name:
  - b. Position:
  - c. Contact telephone number:
  - d. Contact e-mail:
2. Name of the Local Government:
3. Type of Local Government
  - a. Regional District
  - b. Municipal Government
  - c. Other – specify
4. Does your Local Government provide or contract for 9-1-1 services in its area of jurisdiction?
  - a. Yes
  - b. No

**If you answered “NO”, you do not need to complete the rest of this questionnaire. You may add any additional comments you have in question 16.**

5. Approximate population under the direct jurisdiction of your local government served by 9-1-1 services, and date of population estimate
  - a. Population served:
  - b. Date of estimate:
6. Under what bylaws and/or supplementary Letters Patent are you authorized to provide and fund 9-1-1 services. Please list:

7. What is the approximate geographic area covered by the 9-1-1 service (in square kilometres)? [Click here to enter text.](#)
8. Does your entire jurisdiction have access to 9-1-1 services, where there is either landline or wireless coverage?
- a. Yes
  - b. No 
    - i. If no, have the areas without coverage been mapped or otherwise identified? [Click here to enter text.](#)
9. Are there any First Nations lands within your jurisdiction that do not have access to 9-1-1 services?
- a. No
  - b. Unsure
  - c. Yes 
    - i. If yes, please list the First Nations lands which are not covered (to the extent known) [Click here to enter text.](#)
10. How does your government provide the service (select from the following choices, as appropriate):
- a. Directly (i.e., through staff and equipment owned and operated by you)
  - b. Under contract to a PSAP (e.g., with the RCMP and/or E-Comm) 
    - i. If so, specify the PSAP(s) [Click here to enter text.](#)
    - ii. Does the contract include any specifications as to the standard of service to be provided (e.g., call answer by 9-1-1 staff within 15 seconds, 95% of the time, etc.)
      1. No
      2. Yes 
        - a. If yes, what are the standards? [Click here to enter text.](#)
  - c. Under contract to or through another local government (e.g., another regional district). 
    - i. If so, specify the other local government. [Click here to enter text.](#)
    - ii. Does the contract include any specifications as to the standard of service to be provided (e.g., call answer by 9-1-1 staff within 15 seconds, 95% of the time, etc.)
      1. No
      2. Yes 
        - a. If yes, what are the standards? [Click here to enter text.](#)

- d. Other arrangement (e.g., with local government staff at a facility operated by another entity)
- i. If so, specify the other arrangement. [Click here to enter text.](#)
  - ii. Does the arrangement include any specifications as to the standard of service to be provided (e.g., call answer by 9-1-1 staff within 15 seconds, 95% of the time, etc.)
    1. No
    2. Yes 
      - a. If yes, what are the standards? [Click here to enter text.](#)
11. What was your total cost of providing 9-1-1 services **for your local jurisdiction** in 2012? [Click here to enter text.](#)
12. If you are receiving 9-1-1 services from the RCMP, what is the estimated approximate price increase for coming years (as a percentage of 2012 costs)? [Click here to enter text.](#)
13. What funding sources are used to pay for 9-1-1 services?
- a. Property taxes 
    - i. if yes, at what rate [Click here to enter text.](#)
  - b. Landline phone call answer levy 
    - i. if yes, at what rate [Click here to enter text.](#)
  - c. Wireless call answer levy 
    - i. if yes, at what rate [Click here to enter text.](#)
  - d. Other sources – specify (including rate) [Click here to enter text.](#)
14. How much money was raised from each funding source for 2012, to pay for 9-1-1 services?
- a. Property taxes – [Click here to enter text.](#)
  - b. Landline call answer levy – [Click here to enter text.](#)
  - c. Wireless device call answer levy – [Click here to enter text.](#)
  - d. Other sources (specify source and amount) – [Click here to enter text.](#)
15. Do you provide, or coordinate the provision of, 9-1-1 services for other local governments which are not within the ordinary jurisdiction of your local government?
- a. No
  - b. Yes 
    - i. If yes, specify the jurisdictions involved [Click here to enter text.](#)
    - ii. Is the service provided under an agreement or an extra-territorial bylaw?
      1. Agreement
      2. Bylaw
    - iii. List any relevant authorizing bylaws and agreements by which you provide services: [Click here to enter text.](#)

16. We recognize that local governments have a variety of methods for delivering 9-1-1 services. If you wish to add any details regarding how your local government manages this service, or refine any answer given above, or comment about any issue regarding the establishment of a 9-1-1 call answer levy, please do so here. If you are refining an answer to any of the questions from above, please clearly indicate which question you are referring to. [Click here to enter text.](#)



## Form of PSAP Survey



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22 May 2013

### 9-1-1 Services Questionnaire

#### Introduction & Background

UBCM in cooperation with the Province has established a Steering Committee to examine the delivery of 9-1-1 emergency call handling services and develop a plan for implementing a call answer levy to support and improve 9-1-1 services in British Columbia.

The purpose of this survey is to collect information from Public Safety Answering Points on how 9-1-1 services are operated, managed and delivered, including applicable standards, call handling processes, infrastructure, staffing, training and similar operational issues. A separate questionnaire is being sent to the local governments which have responsibility for the service to their residents. The overall goal of the two surveys is to assess how these services are being delivered throughout the province and to understand the costs and issues associated with them.

We would ask for your cooperation and assistance in providing this information. UBCM has retained Ian MacDonald, of Dave Mitchell & Associates Ltd., to collate and assess the responses.

The aim is to include the data from this survey in a background paper for the Steering Committee. To ensure that your responses can be included, please reply by 3 June 2013.

#### Directions and Contact Information

This form uses Microsoft Word. For text, simply click where the words “**Click here to enter text**” appears, and begin typing. Where a “yes” or “no” option is given, clicking in the appropriate box will insert an “X”.

Please return all surveys to Ian MacDonald at the email address below. If you have any trouble with this form or any questions about the survey, please contact:

Ian MacDonald

Email: [ian\\_macdonald@telus.net](mailto:ian_macdonald@telus.net)

Phone: 604 885 9588

## Questionnaire

*Note: for the purposes of this questionnaire, the 9-1-1 call taking function (and 9-1-1 call-taker role) is defined as follows:*

- (d) Call answer on the incoming 9-1-1 line.
- (e) Caller interrogation to determine: that it is an emergency; what jurisdiction it relates to; and to which emergency agency or Secondary Safety Answer Point the call should be directed.
- (f) "Transfer" of the call to the appropriate agency/dispatch centre in the indicated jurisdiction. This third step may involve any one of the following: the call taker notionally switching roles, and undertaking a caller interrogation/dispatch function for either fire or police; the call being transferred across the room to a police or fire dispatcher position; or the call being transferred to an external agency – such as to BC Ambulance, or to a fire or police dispatch agency such as Surrey Fire Dispatch or North Island 911, or to an RCMP Operational Communications Centre.

*The 9-1-1 function ends when the "transfer" is complete, either through a call hand-off to another agency or the notional transfer occurs and the call taker commence agency-specific call evaluation and/or dispatch functions.*

17. Person completing this questionnaire
- a. Name:
  - b. Position:
  - c. Contact telephone number:
  - d. Contact e-mail:
18. Name and location of the Public Safety Answering Point:
19. Nature of relationship with local governments
- a. Owned and directly operated by local government
  - b. Separate legal entity providing service under contract to local government
  - c. Other – describe
20. Approximate population served by the PSAP:
- a. Population served:
  - b. Date of estimate:
21. What is the approximate geographic area covered by the PSAP's 9-1-1 service (in square kilometres)?
22. The number of external Secondary Safety Answer Points or agencies to which you "transfer" or "downstream" calls (not including internal transfers):
- a. Fire
  - b. Police
  - c. BC Ambulance

- d. Other (specify) [Click here to enter text.](#)

### Nature and Operation of the PSAP

23. Number of 9-1-1 calls handled by the PSAP in 2012:

- a. Total of all 9-1-1 calls [Click here to enter text.](#)
  - i. Landline Calls [Click here to enter text.](#)
  - ii. Wireless or other devices [Click here to enter text.](#)
- b. Breakdown of 9-1-1 call types:
  - i. Police [Click here to enter text.](#)
  - ii. Fire [Click here to enter text.](#)
  - iii. Ambulance [Click here to enter text.](#)
  - iv. Other emergency (e.g., Coast Guard, Wildfire Management Branch, etc.) [Click here to enter text.](#)
  - v. Abandoned calls:
    - 1. Abandoned "in queue" [Click here to enter text.](#)
    - 2. Abandoned "pre-switch" (very short duration calls which are not presented to an operator) [Click here to enter text.](#)

24. Does your communication centre track the number of misdialled and prank/malicious calls?

- a. No
- b. Yes 
  - i. Number of calls categorized as misdials [Click here to enter text.](#)
  - ii. Number of calls categorized pranks/malicious [Click here to enter text.](#)

25. Does your call centre have TTY/TDD capabilities:

- a. No
- b. Yes 
  - i. If Yes, how many calls were received using a TTY and/or TDD system in over the past 3 years:
    - 1. 2010 [Click here to enter text.](#)
    - 2. 2011 [Click here to enter text.](#)
    - 3. 2012 [Click here to enter text.](#)

26. Does your communication centre have access to translation services?

- a. No
- b. Yes 
  - i. What service is used? [Click here to enter text.](#)
  - ii. Approximately how many calls annually do you direct to this service? [Click here to enter text.](#)

27. In addition to the 9-1-1 call handling function, what other services does your communications centre provide (check all that apply)
- a. Police Dispatching 
    - i. For how many jurisdictions? [Click here to enter text.](#)
  - b. Fire Dispatching 
    - i. For how many jurisdictions? [Click here to enter text.](#)
  - c. Alarm Response Monitoring 
    - i. For how many customers? [Click here to enter text.](#)
  - d. Operation of emergency services radio network
  - e. Monitoring services for “work alone” local government employees
  - f. Monitoring or other services for commercial customers 
    - i. For how many customers? [Click here to enter text.](#)
  - g. Other services (e.g., distributed records management services, etc.) (specify) [Click here to enter text.](#)
28. How many call taker positions are there for 9-1-1 call handling (please specify/describe). [Click here to enter text.](#)
29. Are the 9-1-1 call takers:
- a. Employed directly by local government
  - b. Employed by another agency (e.g., RCMP, E-Comm)
  - c. Other (specify) [Click here to enter text.](#)
30. What best describes the role of your 9-1-1 call takers:
- a. 9-1-1 call answer positions are fully dedicated to that function and do not perform agency-specific call evaluation or dispatching duties
  - b. 9-1-1 call answer positions may also handle some agency-specific call evaluation or dispatching functions, depending on workloads
  - c. Individuals in the 9-1-1 call answer position are also the regular call evaluators/dispatchers for either police or fire
  - d. Other (please specify) [Click here to enter text.](#)
  - e. If desired, please add any further explanation of the model you use. [Click here to enter text.](#)
31. Do you have a back-up centre – that is, a second communications centre to which your staff would move to continue operations – in the event that your communications centre becomes non-functional for any reason?
- a. No
  - b. Yes

32. If you have a back-up centre, how often do you test or practice its use?
- a. Not applicable (no back-up centre)
  - b. Monthly
  - c. Quarterly
  - d. Semi-annually
  - e. Annually
  - f. Less frequently than annually
33. Do you have arrangements with another communications centre to manage your 9-1-1 call handling function in the event there is a temporary loss of operations at your centre?
- a. No
  - b. Yes 
    - i. If yes, please identify the communication centre(s) you have these arrangements with. [Click here to enter text.](#)
    - ii. Are these arrangements set out in a written agreement and/or written protocols:
      - 1. No
      - 2. Yes
    - iii. How often do you test or practice its use?
      - 1. Monthly
      - 2. Quarterly
      - 3. Semi-annually
      - 4. Annually
      - 5. Less frequently than annually
  - c. If desired, please add any further description of the arrangements you have in place [Click here to enter text.](#)
34. Do you have arrangements with another communications centre to handle overflow work, in the event that your 9-1-1 call handling function is impacted by a sudden surge in call volumes?
- a. No
  - b. Yes 
    - i. If yes, please identify the communication centre(s) you have these arrangements with. [Click here to enter text.](#)
    - ii. What events will trigger the overflow (please specify). [Click here to enter text.](#)
    - iii. How often has this arrangement been activated in the period 2010 – 2012? [Click here to enter text.](#)
  - c. If desired, please add any further description of the arrangements you have in place [Click here to enter text.](#)

## Call Handling Standards

35. Does your centre have established standards for:
- a. Call answer times for 9-1-1 calls (e.g., answer 90% of calls within 10 seconds or less):
    - i. No
    - ii. Yes 
      1. If yes, what is your standard (specify – e.g., NENA, NFPA 1221 or the specific metric used) [Click here to enter text.](#)
  - b. Call handling times – being the time taken to interrogate the caller and initiate the transfer to a dispatch agency):
    - i. No
    - ii. Yes 
      1. If yes, what is your standard (specify – e.g., NFPA 1221 or the specific metric used)? [Click here to enter text.](#)
  - c. Any other call answer/handling metrics (e.g., average total length of 9-1-1 calls):
    - i. No
    - ii. Yes 
      1. If yes, please specify what is measured and what standard is applied. [Click here to enter text.](#)
36. Do you regularly report call handling metrics to local governments which use your service?
- a. No
  - b. Yes
37. Does your communication centre have express protocols addressing:
- a. How the 9-1-1 operator answers the call?
    - i. No
    - ii. Yes 
      1. If yes, please describe/specify. [Click here to enter text.](#)
  - b. How the 9-1-1 operator interrogates the caller?
    - i. No
    - ii. Yes 
      1. If yes, please describe/specify (or attach description when returning the survey). [Click here to enter text.](#)
  - c. Requiring the 9-1-1 operator to stay connected to the call until the downstream agency answers and accepts the call?
    - i. No
    - ii. Yes

38. Does your communication centre have express protocols addressing how 9-1-1 operators handle:

a. Abandoned calls?

i. No

ii. Yes

1. If yes, briefly describe the protocols, distinguishing if relevant between Abandoned “in queue”/“incomplete” calls and those abandoned “pre-switch”/“very short duration” calls. [Click here to enter text.](#)

b. Silent calls (no voice communication on interrogation)?

i. No

ii. Yes

1. If yes, briefly describe the protocol. [Click here to enter text.](#)

c. Malicious or Prank calls?

i. No

ii. Yes

1. If yes, briefly describe the protocol. [Click here to enter text.](#)

### Infrastructure and Equipment

39. Is your communication centre in a stand-alone, purpose built communication facility (as opposed to being integrated as part of an emergency service or other building):

a. No

b. Yes

i. If yes, does this facility meet current provincial standards for post-disaster construction?

a. No

b. Yes

40. Is your communication centre integrated in a larger building, which serves other purposes:

a. No

b. Yes

i. If yes, what other services are provided out of this building (check all that apply)

a. Police

b. Fire

c. Other Government services

d. Other (please specify) [Click here to enter text.](#)

- ii. Does this facility meet current provincial standards for post-disaster construction?
  - a. No
  - b. Yes
  - c. Unsure

41. Does your communication centre have a back-up power supply?

- a. No
- b. Yes 
  - i. If yes, please provide a general description of the back-up power supply.  
[Click here to enter text.](#)
  - ii. Is the switchover to the back-up power supply automatic or does it have to be initiated manually?
    - 1. Automatic
    - 2. Manual
  - iii. How often do you test the power supply unit (specify)? [Click here to enter text.](#)
  - iv. How often do you test switching over from the regular power supply to the back-up power supply (specify)? [Click here to enter text.](#)
- c. If desired, please add any further description of the back-up power supply arrangements you have in place [Click here to enter text.](#)

42. Are your critical call-handling and related IT systems equipped with uninterruptible power supply back-ups?

- a. No
- b. Yes
- c. If desired, please add any further description of the UPS arrangements you have in place [Click here to enter text.](#)

### **Training, Supervision and Quality Assurance**

43. Does your communication centre have a formal, documented training process for new 9-1-1 call takers?

- a. No
- b. Yes

44. Does your communication centre have a formal, documented program to provide 9-1-1 call takers with on-going skills training and education?

- a. No
- b. Yes

45. Does your communication centre have a minimum number of annual hours of skills training and/or education for existing 9-1-1 call takers?

a. No

b. Yes

i. If yes, how many hours per year (specify). [Click here to enter text.](#)

46. Does your communication centre have a formal, documented quality assurance program which regularly reviews the overall performance of 9-1-1 call handling (whether alone, or in combination with other call-handling functions performed by the centre)?

a. No

b. Yes

i. If yes, how frequently are these reviews conducted (specify)? [Click here to enter text.](#)

### Other

47. We recognize that there are a range of possibilities for how different centres operate and/or are equipped. If you wish to clarify or refine any of the answers given above, please do so below (or on a separate sheet). Identify clearly which question you wish to refine/clarify, and the additional detail that you believe is necessary or relevant. [Click here to enter text.](#)