

9-1-1 Call Answer and Fire Dispatch Options Analysis:

North Island 9-1-1 Corporation

Final Report



April 16, 2014

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I. Executive Summary

The North Island 9-1-1 Corporation contracted Pomax Consulting Inc. to undertake an feasibility analysis of 9-1-1 call taking and fire dispatch options in order to recommend sustainable delivery models¹. These services have been contracted to the RCMP and the Campbell River Fire Department (CRFD) respectively, since the creation of the corporation in 1995. This options analysis is required as due diligence to address current and predicted future cost increases; it is not related to any performance concerns with the existing contracted service providers.

A feasibility study is an evaluation and analysis of the potential of a proposed project or change in the way of doing business. It is based on extensive investigation and research to support the process of decision-making. This analysis aims to objectively assess the likelihood of success of alternative methods for call taking and dispatching provision for the Regional Districts that comprise the North Island 9-1-1 Corporation.

As directed by North Island 9-1-1: *the consultant analyzed the existing service delivery model along with other options in order to prepare a recommendation and implementation plan for the long term sustainability of 9-1-1 call answer services. A long-term sustainability of 9-1-1 call answer services would include, as a minimum, consideration of the following factors:*

- *no reduction to the high level of professional service delivery currently received;*
- *calls answered within industry standards;*
- *efficiency and effectiveness;*
- *acceptable business continuity plans;*
- *level of expertise in industry knowledge.*

Pomax was asked to review a number of North Island 9-1-1 developed options in order to determine a recommended sustainable model for the delivery of Primary 9-1-1 call answer services, including the Secondary Public Safety Answering Point (SSAP) fire dispatch services. The options requiring analysis are to:

- Continue the existing model by negotiating a new Memorandum of Understanding with the RCMP & continue the existing contract with the Campbell River Fire Department;
- Develop a stand-alone 9-1-1 Corporation Call Answer Center service delivery model that provides both the initial 9-1-1 call answer and fire dispatch;
- Contract with the Campbell River Fire Department to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm for 9-1-1 call answering services and continue a fire dispatch contract with Campbell River Fire Department;

¹ North Island 9-1-1 Corporation: Sustainable Service-Options Analysis, November 21, 2013

- Dissolve North Island 9-1-1 Corporation and allow each regional district to individually contract for 9-1-1 call answering services and fire dispatch.

There are three options that we cannot recommend. These are:

The Status Quo:

The significant challenge with this option are the increased costs from the RCMP. The RCMP has made their position clear; Primary PSAP is not a core service of the RCMP and will only be provided based on a full cost-recovery basis. North Island 9-1-1 states that the “RCMP has, since 1995, provided exceptional professional service on behalf of the North Island 9-1-1 Corporation. A challenge from the beginning has been the cost related to providing the service from the perspective of the 24/7 operations and the link to federal treasury board RCMP wages”.² Under this option, CRFD would continue to provide fire dispatch services for North Island 9-1-1.

Due solely to the increases in the RCMP’s staffing costs as well as the identification that North Island 9-1-1 needs to fund an additional full time equivalent position, this option is not recommended.

Stand-Alone Facility

Based on rough order of magnitude cost estimates for the construction and annual maintenance and operation of a newly constructed purpose-built facility as well as the recommended staffing model, the North Island 9-1-1 can conceivably construct and staff its own facility for less than the current service delivery model, based on a five-year term. However, while the anticipated costs savings are approximately \$700,000 over the five-year term, other options provide a greater cost return with much less effort and investment from North Island 9-1-1.

This option is not recommended.

Dissolution of North Island 9-1-1 Corporation

This option presents some of the greatest challenges with respect to financial and operational considerations. In depth effort is required in order to determine the value of each stakeholder’s existing capital investments into the system and a plan would have to be developed on how best and most efficiently to distribute the assets to one or more of the regional districts. In addition, detailed and technical planning would be required to determine what additional capital purchases would be required in order for each stakeholder to continue to provide these services, and service contracts would have to be established with either CRFD and/or E-Comm.

Due the complexities and the extensive effort required to work through the variation issues associated with the dissolution of the North Island 9-1-1 and that there would be minimal cost savings recognized, this option is not recommended.

² North Island 9-1-1 Corporation Scope of Work, page 1

Recommendations and Rationale

Three options remain:

- Contract with the Campbell River Fire Department to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm for 9-1-1 call answering services and continue a fire dispatch contract with Campbell River Fire Department;

As North Island 9-1-1 has acknowledged, the Campbell River Fire Department has successfully and effectively provided fire dispatch service since 1995. Under this service delivery model, North Island has direct management and ownership of the system and the ability to design the system to meet the needs of the fire departments. North Island 9-1-1 has developed and maintained a state-of-the art system, as recognized with the recent implementation of the new Avtec Scout console technology. The majority of the North island 9-1-1 fire departments are small, volunteer departments and the fire dispatch service provided by CRFD has been designed to meet the needs of these agencies. Small, volunteer departments present unique operational needs compared to larger, career departments in that volunteer departments may, at times, require an increased level of service by the dispatch centre in order to provide additional support and assistance than a career department may require. As an example, this increased service can be the result of a department having a low department turn out to an emergency incident and requiring the dispatch centre to provide additional services in resourcing, mutual aid coordination, etc. that may not be required for a career department.

E-Comm offers an extremely advanced fire dispatch service including state-of-the art technologies and a staffing model that allows flexibility to increase staffing in real time as situations dictate. E-Comm is in the preliminary stages of upgrading their fire dispatch console technology and, as a result, are not able to offer fire dispatch service until 2016. E-Comm provides a high level of service to their career fire dispatch clients but it has been noted by some of the volunteer and composite departments that the services, often tailored for urban fire response, sometimes exceed the need of the departments.

E-Comm's service delivery cost for 2016, 2017, and 2018 is \$33,936 more than CRFD. This additional cost is reflected, in part, to the initial, one-time costs necessary for the service implementation. An evaluation of the annual operating costs for this same period identifies that the E-Comm proposal provides a \$383,804 savings over the CRFD option.

Annual Operating Costs	2016	2017	2018	Total
Campbell River Fire Department	\$1,013,727	\$1,033,076	\$1,052,811	\$3,099,614
E-Comm	\$877,500	\$904,950	\$933,360	\$2,715,810
E-Comm Savings (over three years)				\$383,804

Considerations:

We have found that either E-Comm or Campbell River Fire Department are most capable of providing both 9-1-1 primary answer and fire dispatch services on a sustainable basis. There were some considerations, though, that lead us to our recommendations.

- Campbell River Fire Department flows through the cost of service provision to North Island 9-1-1 Corporation. The advantage to this model is that the corporation pays only those costs that are incurred as a result of the service being provided. The disadvantage is that the corporation is not able to budget for specific amounts since the actual costs of staffing and operation are not fully available until the end of the budget year. Additionally, staff costs are tied to International Fire Fighter Association negotiations that take place at several fire services in British Columbia. We consider this annual unknown as a significant challenge for the corporation.
- Changes to 9-1-1 systems, such as Text capable 9-1-1 and Next Generation 9-1-1 will take place rapidly and public safety answering points will eventually, if not sooner, adopt technology capable of T9-1-1 and NG 9-1-1. E-Comm is already capable of that technology while Campbell River Fire Department would have to go through an upgrade process. Even Order of Magnitude costs have been provided in this report, actual costs are not yet definable. An additional consideration is that CRFD would have to proceed through a full 9-1-1 implementation, training and start-up whereas that is not the case with E-Comm. However, we are confident that CRFD is capable of accomplishing that process.
- With respect to E-Comm, it is not able to provide information, until 2016, related to the actual cost of providing fire dispatch services. This represents an unknown for the North Island Corporation that makes it difficult to choose the E-Comm option for fire dispatching

Therefore we recommend that the North Island Corporation:

1. Enter into negotiations with E-Comm 9-1-1 to move 9-1-1 Call Answer Services from the RCMP to E-Comm by November of 2014.

E-Comm offers a purpose built world class facility and operations with turnkey delivery to meet the tight transition timelines required to move from the RCMP. It is more expensive than the CRFD 9-1-1 Call Answer proposal, however this recommendation mitigates the unknowns and logistics of moving to a new call answer service.

2. Maintain the existing Fire Dispatch Services contract with the City of Campbell River through to April 1, 2018

The E-Comm Fire Dispatch proposal is less expensive than maintaining the current CRFD contract; however this recommendation mitigates the unknowns and logistics associated with not knowing the cost of E-Comm fire dispatch. Starting in 2016 the corporation should revisit the option of contracting E-Comm for fire dispatch services.

In the meantime, the corporation should consider negotiating a fixed fee contract with Campbell River for fire dispatch.

1 INTRODUCTION

The North Island 9-1-1 Corporation contracted Pomax Consulting Inc. to undertake an analysis of 9-1-1 call taking and fire dispatch options in order to recommend sustainable delivery models³. These services have been contracted to the RCMP and the Campbell River Fire Department (CRFD) respectively, since the creation of the corporation in 1995. This options analysis is required as due diligence to address current and predicted future cost increases; it is not related to any performance concerns with the existing contracted service providers.

As directed by North Island 9-1-1: *the consultant analyzed the existing service delivery model along with other options in order to prepare a recommendation and implementation plan for the long term sustainability of 9-1-1 call answer services. A long-term sustainability of 9-1-1 call answer services would include, as a minimum, consideration of the following factors:*

- *no reduction to the high level of professional service delivery currently received;*
- *calls answered within industry standards;*
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- *acceptable business continuity plans;*
- *level of expertise in industry knowledge.*

Pomax was asked to review a number of North Island 9-1-1 developed options in order to determine a recommended sustainable model for the delivery of Primary 9-1-1 call answer services, including the Secondary Public Safety Answering Point (SSAP) fire dispatch services. The options requiring analysis are to:

- Continue the existing model by negotiating a new Memorandum of Understanding with the RCMP & continue the existing contract with the Campbell River Fire Department;
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- Contract with the Campbell River Fire Department to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm to provide both 9-1-1 call answering and fire dispatch services;
- Contract with E-Comm for 9-1-1 call answering services and continue a fire dispatch contract with Campbell River Fire Department;
- Dissolve North Island 9-1-1 Corporation and allow each regional district to individually contract for 9-1-1 call answering services and fire dispatch.

The North Island 9-1-1 business model for the provision of Primary PSAP services is currently formalized in a Memorandum of Understanding (MOU) with the RCMP. In 2013, the RCMP advised all British Columbia 9-1-1 services providers, including North Island 9-1-1, that an internal review determined that

³ North Island 9-1-1 Corporation: Sustainable Service-Options Analysis, November 21, 2013

PSAP services are not a core police function. Therefore, in future, the service would be available on a full cost recovery basis only. Subsequently, the RCMP calculated all inclusive costs, from its perspective, of providing 9-1-1 service and notified their clients. The notification offered the option of transition to an alternate provider with the full cooperation and participation of the RCMP.

In 2009, North Island 9-1-1 and the RCMP entered into a revised MOU that transferred North Island 9-1-1 staff to RCMP personnel and recognized that the resources required for 9-1-1 call answer service was four (4.0) FTEs⁴. From 2009 to 2012, North Island 9-1-1 notes that the budgeted cost per FTE per year was \$99,823⁵ that did not include management, supervision, or other related costs.

Under the new RCMP cost-recovery model, the per full-time equivalent (FTE) position increased significantly as the RCMP now include what they refer to as direct and indirect costs, which include costs the RCMP associate to pay and benefits, operating and maintenance, and accommodation. Under the new MOU, the 2014 FTE rate is \$115,976.

The net result for North Island 9-1-1 is an increase of 16% in the first year of the new MOU with annual FTE cost increases in each of the subsequent years. In addition to the FTE cost increase, the RCMP has advised North Island 9-1-1 an increase to 6.0 FTEs from the current 4.0 FTEs will be effective January 1, 2015.⁶

Table 1 illustrates the net effective of the FTE costs increases under the new MOU.

Table 1 - Illustration of FTE Increases

Year	Annual FTE Cost	No. of FTEs	Total FTE Cost	Increase over Previous Year
2009-2012	\$99,823*	4	\$399,292	N/A
2014	\$115,976	4	\$463,904	16%
2015	\$120,449	6	\$722,694	56%
2016	\$122,485	6	\$734,910	1.7%
2017	\$124,625	6	\$747,750	1.7%
2018	\$126,686	6	\$760,116	1.7%

*Annual amount as per North Island 9-1-1 budget figures

1.1 Work Undertaken

In order to assess the viability of the various options presented by North Island 9-1-1 for analysis, the following key steps were undertaken:

- Background and technical documentation was reviewed;
- Meetings with possible service providers were conducted;

⁴ North Island 9-1-1 Corporation Board Meeting Agenda information package, p. 47

⁵ North Island 9-1-1 Corporation Board Meeting Agenda information package, p. 48

⁶ February 12, 2014 letter from Insp. Rick Greenwood to Debra Oakman regarding 9-1-1 PSAP Service Delivery

- An order of operating cost assessment was conducted for viable options.

1.2 Report Structure

This report includes:

- A review of the current and future state of technology used by the Royal Canadian Mounted Police (RCMP) for the receipt of 9-1-1 calls;
- A review of the current and future state of technology used by the City of Campbell River Fire Department for fire department alerting and communications;
- A proposed cost for construction and operation of a purpose-built facility and recommended staffing level model for a stand-alone North Island 9-1-1 centre;
- A complete evaluation of the six North Island 9-1-1 developed service delivery options;
- Estimated costs of viable service delivery models; *and*
- Recommendation of a sustainable model for 9-1-1 call answer services; and fire dispatch.

1.3 Glossary

A glossary can be found in APPENDIX A – Glossary of Terms

2 EXISTING / PROPOSED TECHNOLOGY OVERVIEW

This section provides an overview of:

- a. The technology in use within the Courtenay RCMP Operational Communications Center for Primary PSAP services
- b. Radio dispatch and communications systems and technologies used by the Campbell River Fire Department

2.1 Current Primary Public Safety Answering Point Services

All British Columbia Primary and Secondary Public Safety Answering Points (PSAP) connect to the 9-1-1 platform which is provisioned⁷ by TELUS Communications Company as approved in the Canadian Radio-television Telecommunications Commission (CRTC) TELUS General Tariff Item 203 Provincial 9-1-1 Service⁸. As TELUS is responsible for the delivery of 9-1-1 voice and data services to an appropriate building demarcation point, the Primary PSAP service provider is only responsible for the distribution of the 9-1-1 calls from the demarcation point to the emergency call takers/dispatchers as well as any agency specific systems or technologies used as part of their operations (e.g. computer aided dispatch application, computer integrated telephony, etc.).

2.2 Campbell River Fire Dispatch Radio (CRFD) System Interface

The North Island 9-1-1 business model for the provision of centralized fire dispatch service is formalized in an agreement between the North Island 9-1-1 Corporation and the City of Campbell River. The term of the current agreement is from April 1st, 2013 to April 1st, 2018, and allows for one five year extension. The agreement can be terminated by either party prior to 2018 with not less than 18 months written notice of termination.

North Island 9-1-1 owns and is responsible for the supply and maintenance of all fire dispatch system equipment, and the corporation retains ownership of all equipment. The Campbell River Fire Department provides fire dispatch service staffing, management, and administration on behalf of the corporation.

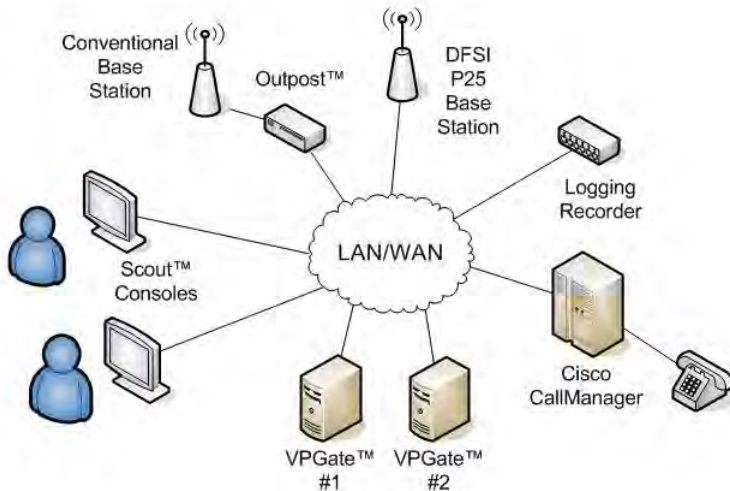
As of the writing of this report, North Island 9-1-1 is in the final stage of replacing the existing Orbacom TDM 150 series communications console system with a new Avtec Scout Voice over Internet Protocol (VoIP) console that also supports radio and telephony integration.

⁷ In telecommunications, provisioning is the process of preparing and equipping a network to allow it to provide services to its users.

⁸ [CRTC Approved TELUS General Tariff Item 203 re Provincial 9-1-1 Service](#)

The Scout console technology is true VoIP technology in that all of its components can be distributed over a Local Area Network/Wide Area Network (LAN/WAN) infrastructure using standard Ethernet (please see Figure 1).

Figure 1 - Basic Avtec Scout Configuration



Fire departments served by the North Island 9-1-1 fire dispatch service receive fire department alerting and two way communications via the North Island 9-1-1 fire radio dispatch and communications network consisting of a combination of very high frequency (VHF) and ultra-high frequency (UHF) land mobile radio, and Radio over Internet Protocol (RoIP) systems.

Campbell River Fire Dispatch Agency Alerting System

All of the departments are paged using VHF two-tone paging; there are no telephone call-out agencies. Depending on the status of the agency, career or volunteer, the two tone paging will either activate the fire departments' field paging hardware (pagers, radios, etc.) or it will activate the departments' in-hall alerting system.

2.3 E-Comm Interconnection to the North Island 9-1-1 Fire Dispatch & Radio System

One of the factors that was considered in determining the most appropriate fire dispatch option is that E-Comm will not be able to provide fire dispatch service to North Island 9-1-1 until 2016 as it is in the process of replacing the radio control system and cannot bring on any additional fire dispatch clients until the new radio system has been fully implemented.

The E-Comm proposal for fire dispatch service notes that service would commence in 2016 and, because of the console replacement, was not able to address a recommended interconnection to the North Island 9-1-1 fire dispatch and radio communication system.

3 DETAILS OF OPTIONS REVIEWED

This section of the report examines the options for a sustained service delivery model.

3.1 The Existing Service Delivery Model

Currently two agreements regulate delivery of 9-1-1 call answer and fire dispatch services for the North Island 9-1-1 Corporation: one with the RCMP for 9-1-1 services, the other with the City of Campbell River for fire dispatch services. Associated costs are summarized in Table 2.

Table 2 – Summary of Costs for Existing Service Delivery Model (2014 to 2018)

Agency	Description	Five Year Total
RCMP ⁹	9-1-1 Call Answer Service	\$3,430,466
City of Campbell River	Fire Dispatch Service	\$5,065,549
Five Year Total – Both Service Agreements		\$8,496,015

RCMP Primary PSAP 9-1-1 Service (Current Provider)

Primary PSAP services are currently provided by the RCMP’s Courtenay Operational Communication Centre. Service delivery costs are based on the RCMP’s determination of the total number of full time equivalent (FTE) positions necessary to provide 9-1-1 call answer and transfer service while achieving the appropriate industry standard.

As noted earlier, under previous MOU’s, North Island 9-1-1 provided funding for 4.0 FTEs. As a result of the RCMP’s review of their core policing responsibilities and the net effect on Operational Communications Center resources, the new MOU has identified that the RCMP’s “service model would require a minimum of six (6) full time employees (FTE’s) to sustain your 9-1-1 service delivery”.¹⁰ The RCMP has advised North Island 9-1-1 that the increase to 6.0 FTEs will not be effective until January 1, 2015.¹¹

In addition to the increased number of FTEs required, the RCMP has calculated a new FTE cost. The new cost structure includes what the RCMP refer to as direct and indirect costs associated to pay and benefits, operating and maintenance, and accommodation. Under the previous MOU, the 2012 FTE rate was \$84,369 whereas, under the new MOU, the 2013/2014 FTE rate is \$115,976, an increase of approximately 37% with a 1% increase per year over the five-year term of the MOU.

⁹ North Island 9-1-1 Corporation Board Meeting Agenda information package – 5 yr. Cost Summary total, p. 65

¹⁰ December 12, 2013 letter from Insp. Rick Greenwood to Debra Oakman regarding 9-1-1 PSAP Service Delivery

¹¹ February 12, 2014 letter from Insp. Rick Greenwood to Debra Oakman regarding 9-1-1 PSAP Service Delivery

City of Campbell River Fire Dispatch Services (Current Provider)

The agreement for fire dispatch service was renewed on April 1, 2013. The agreement identifies the responsibility of each party, the service delivery requirements to be achieved, and identifies the total staffing requirements for the service delivery and a methodology for cost responsibilities.

The City of Campbell River is responsible for the delivery of fire dispatch services, which includes qualified employees trained in fire dispatching, a fire dispatch centre manager, and delivery of the fire dispatch services in accordance with North Island 9-1-1 policies and procedures. The North Island 9-1-1 Corporation is responsible for supplying all equipment (fire dispatch system and fire dispatch centre), capital expenses, and reimbursement to the City of Campbell River for all operating expenses incurred with respect to the operation of the fire dispatch centre. North Island 9-1-1 is responsible for 8.5 FTEs as well as 80% of the fire dispatch centre manager's salary (a deputy fire chief). The current staffing model for fire dispatch service is two (2) dispatchers, 24 hours a day, seven days a week.

The reimbursement of FTE costs is structured such that the City of Campbell River provides actual costs on an annualized basis; therefore, the City of Campbell River does not make a profit nor do they incur a loss associated with the operation of the fire dispatch centre.

Fire dispatcher rates for Campbell River are historically tied to the negotiated rates for one of the four Lower Mainland fire departments Vancouver, Surrey, Richmond, or Burnaby. The City of Vancouver finalized a contract with the fire department in 2012 and based on this settlement, the City of Campbell River is in negotiations with the International Association of Fire Fighters (IAAF) Local 1668. As a result, and due to the structure of the agreement between the City of Campbell River and North Island 9-1-1, any negotiated rates increases for fire dispatchers will be passed through to North Island 9-1-1.

The City of Campbell River provides North Island 9-1-1 with a five year plan of expected costs associated with the operation of the fire dispatch service. North Island 9-1-1 makes quarterly payments throughout the year to the City of Campbell River based on the current year's estimate of costs with the final quarterly payment being made in the second quarter of the following year, once the City of Campbell River has reconciled the actual year's costs.

3.2 North Island 9-1-1 Stand-alone 9-1-1 Call Answer and Fire Dispatch Centre

Costs associated with a stand-alone centre have been evaluated from a staffing perspective as well as a high-level infrastructure perspective.

Staffing Considerations

Two main factors affect the costs associated with a North Island 9-1-1 stand-alone centre; the staffing model and the employee wage rates. In order to determine a reasonable estimate of annualized staffing

costs, a staffing model has been assumed based on 9-1-1 and fire dispatch statistical data and comparisons of other combined 9-1-1 call answer and fire dispatch centres of similar scope.

Fire dispatcher wage rates are based on an average of rates for fire dispatchers for E-Comm and the Fraser Valley Regional District (FVRD). As part of the options analysis for a stand-alone centre, it has been assumed that it would be staffed by non-IAFF fire dispatchers; as E-Comm and the FRVD are the only two fire dispatch centres in British Columbia that are non IAFF, an average of wage comparison was determined. The issue of staffing representation may ultimately be determined by an arbitrator if the IAFF were to challenge this.

Table 3 provides a recommended staffing model and associated cost for a stand-alone 9-1-1 Public Safety Answering Point and fire dispatch facility staffed by North Island 9-1-1 employees.

Table 3 Proposed Stand-Alone Staffing Model

Description	No. Of FTEs	Estimated Cost
Full time dispatchers (two dispatchers per shift x four shifts)	8	\$638,712
Full time equivalents for additional staffing, training coverage, holidays, etc.	4	\$319,356
Full time supervisors	2	\$175,646
Full time manager	1	\$125,000
Estimated Total Annual Staffing Cost	15	\$1,258,714

**The Manager of System Technology position currently exists as part of the current North Island 9-1-1 business model and would still be required as part of the stand-alone model.*

Infrastructure

A comprehensive evaluation and determination of an appropriate new facility for a stand-alone 9-1-1 call answer and fire dispatch centre is beyond the scope of work for this project. However, a high level evaluation of spatial and physical requirements was completed in order to determine a rough order of magnitude estimate of a newly constructed, purpose built facility. To determine a more accurate cost for a new building and all other related infrastructure costs, a detailed planning analysis and budget development involving architects and professionals engineers may be necessary.

Table 4 provides an estimated cost for a new building that has been determined based on best-practices cost per square foot including land acquisition and site completion

Table 4 - Estimated Costs for New Building

Description	Cost
Building and Land	\$892,800
Implementation and Transitioning	\$125,000
Estimated Total Construction	\$1,017,800
Estimated Annual Operating Costs	\$9,000 (first year only)

Table 5 provides the estimated five-year staffing and infrastructure costs for a stand-alone facility.

Table 5 - Estimate Five Year Costs for Stand Alone Facility Operation

Annual Costs	2014	2015	2016	2017	2018
Staffing*	\$1,258,712	\$1,283,886	\$1,309,564	\$1,335,755	\$1,3762,470
Building Operation**	\$9,000	\$9,180	\$9,364	\$9,550	\$9,742
One Time Costs					
Implementation***	\$125,000				
Estimated Five-Year Costs	\$6,722,222				

**Cost for the Manager of System Technology has not been included as this is required as part of the current operating model*

***Building operation costs assume a 2% annual increase each year*

****Implementation costs include the estimated costs for 9-1-1 specific hardware and technology and to transition existing equipment and technology to the new stand-alone facility*

Refer to APPENDIX E – Detailed Staffing and Building Costs for Stand-Alone Centre for specific details on costs associated with the proposed staffing model and the building construction costs.

3.3 One Contract Model for 9-1-1 Call Answer and Fire Dispatch Services with CRFD

The City of Campbell River Fire Department has provided a preliminary proposal to provide 9-1-1 call answer and fire dispatch services for North Island 9-1-1 (APPENDIX B – City of Campbell River Fire Department 9-1-1 Call Answer Services Proposal).

The City of Campbell River proposal to provide Primary PSAP services is based on an historical analysis of 2012 and 2013 annual 9-1-1 calls volumes. Based on this analysis, they have determined that one additional dispatcher is required between the hours of 9:00 AM and 11:00 PM seven days a week and have calculated an additional 2.8 FTEs will be required to meet this staffing objective.

Following the current service agreement with North Island 9-1-1, Campbell River is proposing to cost recover for these additional staff positions on an annual basis. In addition to staffing costs, Campbell River has included the necessary one time capital costs as well as an increase to the annual facility lease costs required for the increased area within the existing dispatch centre.

Table 6 summarizes the additional costs to the existing service agreement with 9-1-1 Call Answer services added:

Table 6 – Current and Additional Costs for CRFD to Provide 9-1-1 Call Answer Services

Existing Annual Costs	2014	2015	2016	2017	2018
Administration, staffing, benefits training, facility lease, and support services ¹²	\$971,161	\$994,759	\$1,013,727	\$1,033,076	\$1,052,811
Additional Annual Costs*	2014	2015	2016	2017	2018
Staffing, benefits, training, and increased facility lease	\$232,824	\$275,821	\$301,324	\$310,426	\$331,907
Software Maintenance	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
One Time Costs					
Add 3 rd Workstation	\$40,000				
CAD license	\$10,000				
TELUS	\$31,500				
Total Additional Costs	\$1,556,312 (estimate only – responsible for actual costs)				

*Additional staffing costs account for the increase of 2.8 FTEs as per Campbell River Fire Department’s proposal

3.4 One Contract Model for 9-1-1 Call Answer and Fire Dispatch Services with E-Comm

E-Comm has operated a 9-1-1 primary public-safety answering point (PPSAP) and secondary public safety answer point (SPSAP) for 14 years. The company also owns and manages the wide-area radio network, used by police, fire and ambulance personnel throughout Metro Vancouver and Abbotsford. E-Comm is a not-for-profit organization owned by its shareholders and established under the provincial Emergency Communications Corporations Act. E-Comm’s sole purpose is to deliver emergency communication services to public-safety agencies and governments. Currently managing almost 900,000 9-1-1 calls each year, E-Comm also provides emergency and non-emergency call-taking and dispatch services for 32 police and fire departments.

E-Comm 9-1-1 Call Answer Services Proposal

E-Comm has provided a comprehensive proposal to contract for 9-1-1 call answer services for North Island 9-1-1 (see APPENDIX C – E-Comm 9-1-1 Call Answer Services Proposal for full details).

E-Comm Fire Dispatch Services Proposal

E-Comm has provided a comprehensive proposal to contract for 9-1-1 call answer services for North Island 9-1-1 (see APPENDIX D – E-Comm Fire Dispatch Services Proposal for full details).

¹² North Island 9-1-1 Corporation Board Meeting Agenda information package – E911 Cost Summary for NI911 Corporation, p. 125;

Summary of E-Comm Costs for a One Contract Model

Table 7 and Table 8 summarize the proposed costs for E-Comm to provide both 9-1-1 Call Answer and Fire Dispatch services:

Table 7 – Summary of E-Comm Costs to Provide 9-1-1 Call Answer Services (Scenario 1 & 2 included)

Annual Costs	2014	2015	2016	2017	2018	5-Year Total
9-1-1 Call Answer (Scenario 1)	\$368,480	\$379,530	\$390,920	\$402,650	\$414,730	\$1,956,310
9-1-1 Call Answer (Scenario 2*)	\$405,830	\$418,000	\$430,540	\$443,460	\$456,760	\$2,154,590
Difference						\$198,280
One Time Costs						
Project Management (Scenarios 1 and 2)	\$21,000					
5-Year Total Cost	\$1,977,310 (\$2,175,590 for a fixed-price contract)					

* See Abandoned Call Handling Considerations, page 24 for details about Scenario 2

The annual costs for Primary PSAP service include a one-time capital cost for equipment and implementation of \$175,000. These costs have been amortized over the five year term at a 4% interest rate (NOTE: the one-time upfront capital payment offer was not used for comparison purposes).

As part of the E-Comm option, it must be considered that E-Comm is in the process of upgrading their radio dispatch infrastructure, referred to as E-Comm’s Next Generation Radio Program (NGRP). This technology will connect all fire departments using Radio over Internet Protocol (RoIP) architecture but the new system will not be available until the mid-2016 timeframe.¹³ As such, E-Comm is not in a position to offer fire dispatch services to North Island 9-1-1 until at least the second quarter of 2016.

Furthermore, in addition to costs for the fire dispatch operational services there will be costs associated with the interconnection of the North Island 9-1-1 dispatched fire departments to E-Comm. In order for E-Comm to be able to dispatch the North Island 9-1-1 fire departments using the new RoIP system, all of the North Island 9-1-1 fire departments are required to upgrade to RoIP connectivity. This upgrade is a prerequisite¹⁴ of the E-Comm proposal and the associated costs are outside of E-Comm’s proposal and are the responsibility of North Island 9-1-1.

As E-Comm has not selected a technology vendor, they were not able to provide definitive costs associated with the interconnection of the North Island 9-1-1 fire departments; however, they have provided rough order of magnitude cost estimates. E-Comm has qualified the rough order of magnitude costs estimates by stating that as they have “not yet selected the specific equipment for its next generation dispatch infrastructure, these costs are subject to change and will need to be reassessed and finalized once equipment selection has been made”.¹⁵

¹³ NI911 – Sustainable Service Options Analysis – Proposal for Fire Dispatch Services, p. 27

¹⁴ *ibid*

¹⁵ *ibid*, p.29

With respect to operational services (call answer, dispatching, etc.) the E-Comm proposal for Fire Dispatch service provides two scenarios; Scenario 1 is based on Primary PSAP service not being at E-Comm and Scenario 2 is based on Primary PSAP at E-Comm.

Table 8 provides a summary of the operational and technical costs.

Table 8 – Summary of E-Comm Costs to Provide Fire Dispatch Services

Annual Costs (Dispatch and CAD)	2016	2017	2018
Fire Dispatch Services (Scenario 1)	\$881,400	\$910,350	\$940,260
Fire Dispatch Services (Scenario 2)	\$832,500	\$859,950	\$888,360
One Time Costs (Dispatch and CAD)			
Capital and Implementation	\$197,740 (Applicable to both scenarios)		
Annual Costs (Radio System)**	2016	2017	2018
Software License Maintenance	\$30,000	\$30,000	\$30,000
Equipment Maintenance, and Support	\$15,000	\$15,000	\$15,000
One Time Costs (Radio System)**			
Equipment, Licensing, Support, and Engineering	\$220,000		
3-Year Total Cost – Scenario 1	\$3,284,750		
3-Year Total Cost – Scenario 2*	\$3,133,550		

**Scenario 2 offers an approximate 5% annual cost savings over Scenario 1*

***Rough order of magnitude cost estimates*

The annual costs for dispatch and CAD services include a one-time capital cost of equipment and implementation of \$152,340 for Scenario 1 and \$122,380 for Scenario 2. These costs have been amortized over the five year term at a 4% interest rate (NOTE: the one-time upfront capital payment offer was not used for comparison purposes).

In addition to the identified annual costs and the rough order of magnitude one-time cost estimates, E-Comm has noted in their proposal that “E-Comm and NI-911 staff develop initial plan, costs and schedules for upgrades to fire radio network infrastructure to enable relocation of dispatch; this would include an assessment of which locations and methods are optimal for interfacing between E-Comm’s next-generation infrastructure and that of the NI-911 based on cost, reliability and operational performance (time to dispatch, staffing efficiency, etc.).”¹⁶ Due to the fact that E-Comm has not yet selected a technology vendor for their new radio system, at this time they identified that there may be additional work, planning, and technology costs necessary for E-Comm to remotely interconnect to the North Island 9-1-1 fire dispatch system.

Estimating the possible costs of a full RoIP upgrade and interconnection to E-Comm for the purpose of this report would take a substantial effort and require a radio system engineer. However, a previous assignment with another client, completed in 2013, included a similar assessment. In that case, remote

¹⁶ NI911 – Sustainable Service Options Analysis – Proposal for Fire Dispatch Services, p. 29

connection for fire dispatch services were estimated at a capital cost of \$778,000 using what is referred to as an Inter-Subsystem Interface, with annual operating costs of \$54,000. There isn't enough information at this time to determine what – or whether – the costs will be to the corporation for full ROIP upgrades or E-Comm dispatch connectivity; we simply offer the costs associated with another project for the purpose of awareness.

3.5 Two Contract Model: 9-1-1 Call Answer with E-Comm & Fire Dispatch Services with CRFD

E-Comm has provided a proposal to contract for 9-1-1 call answer services for North Island 9-1-1 as covered above and fully detailed in *APPENDIX C – E-Comm 9-1-1 Call Answer Services Proposal*. Table 7, above, provides a breakdown of the costs from 2014 to 2018.

The CRFD has confirmed that there would be no change to their current agreement for fire dispatch services if E-Comm were to be the Primary PSAP instead of the Courtenay RCMP Operational Communications Center. As such, costs for fire dispatch services would be as per the existing terms and conditions of the current service agreement and the associated five year financial plan.

Table 9 summarizes the costs associated with a two contract model for 9-1-1 Call Answer with E-Comm and Fire Dispatch Services with CRFD:

Table 9 – Summary of Costs for Separate 9-1-1 Call Answer and Fire Dispatch Service Contracts

Agency	Description	Five Year Total
E-Comm	9-1-1 Call Answer Service	\$1,977,310
City of Campbell River	Fire Dispatch Service	\$5,065,549
Five Year Total – Both Service Agreements		\$7,042,859

3.6 Dissolution of North Island 9-1-1 Corporation

The option to dissolve the North Island 9-1-1 Corporation and have each of the participating regional districts contract directly with E-Comm or some other service provider presents a number of financial and operational challenges and issues that require careful consideration.

All infrastructure of the existing fire dispatch system, including the fire dispatch and communication infrastructure (radios, repeaters, towers, etc.), as well as all of the related equipment and technology used in the fire dispatch centre is owned by the corporation.

Financial Considerations

System related equipment purchases consist of equipment and technology required for each participating regional district used to provide fire dispatch and communication services to their respective fire departments, as well as common system equipment (i.e. control console) required for the delivery of the service to all participants. Dissolution of the corporation would require a determination

of not only the equipment specific to each participating regional district but a valuation of the common system related equipment as well.

As these capital purchases have been made over the years since the implementation of the corporation, a detailed financial evaluation of the current asset values would have to be completed. In addition, a calculation of the contribution of each participating regional district based on their annual respective percentage contributions as assessed by the corporation would have to be determined.

For purposes of this report, a basic analysis of North Island 9-1-1's assets as well as each participating stakeholder's contribution has been completed using the data available from the 2013 unaudited financial statements. Table 10 provides a summary of the audited value of the corporation's assets broken down by shareholder contribution.

Table 10 - Tangible Capital Assets by Stakeholder Contribution¹⁷

Net Book Value of Tangible Capital Assets					
Office Furniture & Equipment	Vehicles	IT Infrastructure	Communication Infrastructure	Work In Progress	Total (Dec. 31, 2013)
\$16,687	\$31,227	\$324,446	\$543,959	\$255,729	\$1,172,048
Shareholder Value by Percentage Contribution					
Comox Valley (31.22%)	Nanaimo (27.07%)	Strathcona (17.12%)	Alberni-Clayoquot (12.92%)	Powell River (8.42%)	Mount Waddington (3.25%)
\$365,913.39	\$317,273.39	\$200,654.62	\$151,428.60	\$98,686.44	38,091.56

While the unaudited financial statement identifies the tangible capital assets of the corporation as well as the 2013 shareholder contributions, it doesn't identify those assets that are both specific to each regional district and those that are common to the corporation. While the assets are identified by function, such as communication infrastructure, this include all of the hardware and of the necessary equipment required for fire department communications yet it does not identify the equipment that is specific to each shareholder.

It is also necessary to consider the value of the assets with respect to the business market. From a business market perspective, if there are agencies in North America or elsewhere that see the equipment as valuable, and there is a market, North Island 9-1-1 could obtain a certain dollar amount for them and the proceeds of the sale distributed to the shareholders based on their respective contribution. However, if there is no viable business market, the book value may be one amount yet the practical value is a different amount. In addition, the value of the assets may have to be decreased due to decommissioning costs or increased by site rental recovery.

¹⁷ Draft North Island 9-1-1 Corporation Financial Statements Year Ended December 31, 2013, Schedules A and B

In order to complete a proper valuation of the North Island 9-1-1 assets, a detailed audit of all of the equipment would be required and assets specific to each shareholder categorized accordingly. This would then leave those assets that are common to the corporation (i.e. dispatch consoles, vehicles). Based on the market valuation of the assets, a total asset amount would then be determined for each shareholder based on their specific equipment as well as their proportional share of the common assets.

Operational Considerations

Dissolution of the corporation provides a number of possible service delivery options for the participating regional districts. The options include, but are not limited to:

1. One regional district purchase all of the assets of North Island 9-1-1 and acts as the lead in the delivery of Primary and/or Secondary PSAP services.
2. One regional district purchase all of the assets of North Island 9-1-1 and establish a facility for Primary and/or Secondary PSAP services.
3. Each regional district maintain their own assets and enter into service contracts for Primary and/or Secondary PSAP services.
4. The City of Campbell River purchase all of the assets of North Island 9-1-1 and offer Primary and/or Secondary PSAP services.

In addition each regional district determining the most appropriate service delivery model and obtaining the annual costs for these services, a detailed technical and operational analysis would be required regarding the most effective way to use their respective assets and determine what additional equipment is required and the associated costs. Once a determination had been made on the additional equipment required, budgetary costs would be required for the purchase and installation of the equipment in order to allow each local government to budget for the expenditures. As part of this, technical expertise and engineering design would be required to ensure that the newly acquired equipment and technology properly integrated into the existing system.

Further to the costs, additional time would be required to complete all of the necessary work required to dissolve the corporation and allow each regional district to efficiently and safety transition to their own service delivery model(s). Not only would this require an extensive amount of time and effort for the individual regional districts, a comprehensive and coordinated transition plan would be required among all of the participants and potential new service providers.

For those regional districts that have contributed a relatively small percentage into the system, based on their assessed contribution, they may find that they are faced with significant capital expenditures in order to obtain all of the necessary equipment and technology required to continue to provide 9-1-1 call answer and fire dispatch services at the same level that has been provided.

4 RECOMMENDED 9-1-1 STAFFING MODEL FROM THE 2013 POMAX STUDY

As detailed in the August 14, 2013 Pomax – Study of 9-1-1 Call Taking Services Report, Table 11 shows the 2012 workload for the primary RCMP 9-1-1 Call Answer Services in BC, and the recommended total FTEs of staffing for each.

Table 11 – Estimated total FTEs Recommended for Current Workload

RCMP Operational Communications Center	2012 Annual Call Volume	Minimum Staffing Level	Minimum Staffing Level based on four shifts	Relief Factor	Recommended Total FTEs
Courtenay	61,585	0.9	3.6	1.4	5.0
Nanaimo	54,348	0.9	3.6	1.4	5.0
North District	75,190	1.1	4.4	1.4	6.2
Southeast District	194,436	1.6	6.4	1.4	9.0
Westshore	33,138	0.6	2.4	1.4	3.4

A review of the 2013 Study, with the small 2013 workload increase for the Courtenay Operational Communications Center, and a future incremental increase in workload demand over the next several years, does not change the 5.0 FTE staffing recommendation now or in the next 4 years. The February 12, 2014 letter from Inspector Rick Greenwood to Debra Oakman regarding 9-1-1 PSAP Service Delivery advises that 6.0 FTEs are required from 2015 onward; with the basis of the calculation being the APCO Retains Project, however no indication of how this comprehensive tool was actually utilized to arrive at the new RCMP staffing number was included. Therefore, the Pomax recommendation of 5.0 FTEs remains unchanged.

5 ROUGH ORDER OF MAGNITUDE (ROM) COSTS ESTIMATES

5.1 Assumptions

Due to the number of options evaluated and the detail available for each option, a number of areas in this report use rough order of magnitude (ROM) cost estimates only.

5.2 Future Cost Factors for 9-1-1 Call Answer Services (next 5 years)

It is important to note that during the five year comparison period (2014 to 2018) two additional cost factors will need to be considered in addition to the baseline estimates for continuing with the RCMP MOU or moving to the E-Comm or Campbell River Fire Department proposals for providing 9-1-1 Call Answer Services.

CRTC Mandated 9-1-1 Updates / NG9-1-1 Known Impacts (Estimate)

As noted in the original Study of 9-1-1 Call Taking Services Report (August 14, 2013) PSAPs have to be aware of the following national 9-1-1 system upgrades that were mandated by the CRTC for TELUS service launch in late 2013 and early 2014:

- Text with 9-1-1 (T9-1-1) for the deaf, hard of hearing, and speech impaired individuals – TELUS was mandated by the CRTC to deliver this service by January 2014. In order to receive Text with 9-1-1 messages, primary PSAPs would have to change to IP interconnection and install the T9-1-1 text messaging software in order to handle T9-1-1 by late 2014 / early 2015. There is a school of thought that T9-1-1 call volumes will be much higher than TTY calls although this will only be confirmed once the service is in place.

Although there is no legislation, at this time, that PSAPs must have the ability to receive text 9-1-1 messages, offering the safety of that facility to deaf, hard of hearing, and speech impaired individuals will probably motivate all PSAPs to upgrade technology to offer T9-1-1 service. In addition, T9-1-1 data should be electronically transferred to the secondary PSAPs, especially medical calls to the BC Ambulance Service.

- Wireless Phase II Stage 2 In-Call Location Update (ICLU) – TELUS was mandated by the CRTC to deliver this in September 2013. However PSAPs will not be able to implement this important tool until they complete IP interconnection (described next). The PSAP will need to update to a 2-way ANI/ALI data connection, have telephones that can handle IP, and have a CAD system that can issue the command and receive the updated location information.
- IP Interconnection – T9-1-1 and ICLU will require a change to interconnection with TELUS. Detailed specifications (available from TELUS), including a secure local area data network, and telephones / computers that can handle IP data and the T9-1-1 software are required at the PSAP.

In addition, the CRTC will be providing direction in 2015/2016 with respect to implementation of Next Generation (NG) 9-1-1. The NG9-1-1 technology requirements for IP interconnection, secure Local Area Networks, Multiprotocol Label Switching (MPLS) line connection to PSAPs, phone number and location data being processed using session initiated protocol (SIP), Automatic Location Information (ALI) Query Server (AQS), computer-aided dispatch (CAD) interface upgrades, and voice over IP (VoIP) logging recorders are still being developed. However it is known that this will impact all of the noted technical areas with ROM cost estimates as detailed below. The impact on workflows, call handling times, and training may also impact staffing demands.

Based on previous experience with these evolving technological requirements, the following ROM cost estimates are provided for purchase, installation, and ongoing maintenance:

- Installation of an on-site IP PBX or equipment for connection to a network based PBX - \$40,000 per position
- IT equipment and support for IP Interconnection - \$10,000 per position
- Voice logging equipment upgrade for instant and long-term recorders - \$10,000 per position

Applying the above estimates to the 9-1-1 Call Answer Services being analysed will mean the following in terms of future cost factors (next 5 years) for equipment and estimated staffing demands:

- a) RCMP Upgrades (9 positions) - \$600,000 total; potential ROM future costs for equipment and staffing
- b) E-Comm Upgrades – not applicable; technology is already in place; staffing included in proposal
- c) Campbell River Fire Department – \$200,000 total; potential ROM future costs for equipment and staffing

Abandoned Call Handling Considerations

As noted in the August 14, 2013 Pomax – Study of 9-1-1 Call Taking Services Report at section 3.3 Call Determinations: *In British Columbia, there is no provincial legislation with respect to 9-1-1 and, as such, a fundamental issue i.e. the responsibility for an appropriate Call Transfer Determination for Abandoned Calls is a matter that is negotiated between the 9-1-1 service provider and the Primary Public Safety Answering Point provider. As well, there is no standard business model for 9-1-1 call taking and as this matter ultimately impacts total 9-1-1 call handling times it has an effect on the staffing levels for which the 9-1-1 service providers are financially responsible.*

The RCMP 9-1-1 PSAP Operations Manual details a split responsibility between the 9-1-1 call taker and the police dispatcher. However, currently these responsibilities belong to the same person, i.e. the call taker receives the abandoned 9-1-1 call and follows the prescribed police abandoned call procedure. The RCMP have often cited this as the reason for increased staffing requirements which they insist are the financial responsibility of the 9-1-1 Governing Authority.

If North Island 9-1-1 determines that 9-1-1 Call Answer Services will be moved to an alternative provider i.e. CRFD or E-Comm, the responsibility for abandoned call handling should be clearly delineated within the contract.

The financial implications of this decision can be clearly seen in E-Comm's proposal (see Appendix C – page 12, item 'b' for full details), where they have provided a quote for two scenarios:

2014 total annual levy for PSAP Services is:

- 1. Excluding initial call determination for abandoned calls is \$368,480**
- 2. Including initial call determination for abandoned calls is \$405,830**

For the purposes of this Report, we have followed the previous direction from North Island 9-1-1 which clearly states abandoned calls are the responsibility of the police (Courtenay RCMP in this case). Therefore all comparisons have been done using Scenario 1 only. However it is worth noting the five year difference between these two scenarios is \$198,280 (please see Table 7).

5.3 Cost Analysis for the Requested Service Delivery Options

Table 12 provides a summary of the costs associated with each of the potential service delivery options based on a five year term from 2014 to 2018 for the identified 9-1-1 Call Answer and Fire Dispatch Services and the respective variances with respect to the current service delivery model.

Table 12 – Summary of Costs for the Requested Service Delivery Options

Option No.	Description	Services / Other Considerations	MOU / Quoted Cost	Variance from current service delivery model
1	RCMP MOU (Status Quo)	9-1-1 Call Answer	\$3,430,466	Status Quo <i>[does not include Future 9-1-1 Costs]</i>
	Campbell River Service Agreement (Status Quo)	Fire Dispatch	\$5,065,549	
	Total		\$8,496,015	
2	New stand-alone 9-1-1 Call Answer and Fire Dispatch Centre	Building (one time)	\$820,800	(\$1,077,993) <i>[includes capital cost for construction of new building]</i>
		Building Operations	\$46,836	
		9-1-1 Call Answer and Fire Dispatch	\$6,550,386	
	Total		\$7,418,022	
3	One Contract with Campbell River for 9-1-1 and Fire Dispatch	9-1-1 Call Answer	\$1,554,353	(\$1,876,113) <i>[does not include Future 9-1-1 Costs]</i>
		Fire Dispatch	\$5,065,549	
	Total		\$6,619,902	
4	One contract with E-Comm for 9-1-1 and Fire Dispatch	9-1-1 Call Answer	\$1,977,310	(\$1,419,235) <i>[includes Future 9-1-1 Costs detailed in Section 5.2]</i>
		Fire Dispatch	\$5,099,470	
	Total		\$7,076,780*	
5	E-Comm contract for 9-1-1 Call Answer and Campbell River contract for Fire Dispatch	9-1-1 Call Answer	\$1,977,310	(\$1,453,156) <i>[includes Future 9-1-1 Costs detailed in Section 5.2]</i>
		Fire Dispatch	\$5,065,549	
	Total		\$7,042,859	
6	Dissolve North Island 9-1-1 Corp	Transfer assets to participating regional districts and determine new service delivery options.	Determination of costs relative to the existing service delivery model are beyond the scope of this project.	

*As E-Comm cannot offer fire dispatch service until 2016, this figure was estimated by using Campbell River Fire Department's dispatch costs for 2014 and 2015 combined with E-Comm's estimated fire dispatch rates for 2016, 2017, and 2018.

6 Key Factors Analysis for Each Option

Table 13, below, highlights the options analysed and how they rate in terms of the focus of this review:

- the various services options as identified by North Island 9-1-1
- proposal cost comparisons (i.e. between the current service providers and viable alternatives)
- technology considerations (i.e. present, next 5 years, business continuity)
- proposal value (i.e. from 2014 to 2018)

Table 13 – Key Factors Analysis

Option Description		Proposal Costs	Technology Considerations	Achieves Important Initial Criteria	Comments and Considerations
1	Existing model (Status Quo) – North Island 9-1-1 contracts with RCMP for 9-1-1 Call Answer and CRFD for Fire Dispatch	9-1-1 Call Answer - 5 yr. total: \$3,430,466 <i>plus potential \$600,000 for future cost equals \$4,030,466 (see section Error! Reference source not found. for details)</i>	Some RCMP technology is near end of life. Future capital expenses are not included in the MOU, which would add an estimated \$600,000 to the total (see section Error! Reference source not found.).	Yes	Costs are 51% or more than the other proposals mostly due to RCMP fee structure; Near end of life technology and tools; 600K potential future costs not factored in.
		Fire Dispatch Services - 5 yr. total: \$5,065,528	North Island has just implemented state-of-the art communications console technology at the Campbell River Fire Dispatch centre	Yes	The new console technology is expected to well-serve North Island over the next minimum of ten years for fire dispatch operations. North Island has shown that it is very proactive and leading in technology upgrades and replacements for fire dispatch technology.
2	New stand-alone 9-1-1 Call Answer & Fire Dispatch centre	Infrastructure – estimated capital cost for land acquisition, construction costs, and 5 yr. operating costs: \$945,800	Provides North Island 9-1-1 Corporation the opportunity to construct a purpose-built, state of the art facility and incorporate the recently implemented new console technology. Does not consider the costs associated with the established of a back-up facility	Yes	A stand-alone facility, while offering a cost savings the current service delivery model requires lead time required (one year) to construct the new facility as well as maintain the facility. As other options offer a greater cost saving with less initial and ongoing effort from the North Island 9-1-1 Corporation, a stand-alone facility is not considered to be in the best interests of the corporation.
		9-1-1 Call Answer and Fire Dispatch - 5 yr. total: \$6,550,386	North Island 9-1-1 Corporation currently uses state-of-the art dispatch and communications technology that can be transitioned to the new stand-alone facility		
3	One contract for 9-1-1 Call Answer and Fire Dispatch with CRFD	9-1-1 Call Answer – 5 yr. total: \$1,544,353 <i>plus potential \$200,000 for future cost equals \$1,754,353</i>	Good technology readiness, limited tools. Plans in place for future capital expenses; which would add an estimated \$200,000 to the total (not including new facility in 2018)	Yes	56% lower than the RCMP; Staff expenses only; Experienced in call taking and dispatching; Current and anticipated operational changes make this a difficult time to start in 9-1-1.
		Fire Dispatch Services - 5 yr. total: \$5,065,528	North Island has just implemented state-of-the art communications console technology at the Campbell River Fire Dispatch centre	Yes	The new console technology is expected to well-serve North Island over the next minimum of ten years for fire dispatch operations. North Island has shown that it is very proactive and leading in technology upgrades and replacements for fire dispatch technology.
4	One contract for 9-1-1 Call Answer and Fire Dispatch with E-Comm	9-1-1 Call Answer – 5yr. total: \$1,977,310 (future cost included in quote)	State of the art technology and tools. Majority of the 5-year known future costs are included with the base pricing for this proposal.	Yes	51% less than the RCMP; Proven leader in the 9-1-1 business; latest technology; world class system and long-term viability.
		Fire Dispatch Services - 5 yr. total: \$5,099,470 (based on first to years of CRFD fire dispatch service)	<i>Not determined until 2016</i>	N/A	As E-Comm is in the preliminary stage of a dispatch console system upgrade, they have not elected a technology vendor therefore it cannot be determined if the technology and fire dispatch service meets the necessary requirements.
5	Contract with E-Comm for 9-1-1 Call Answer & CRFD for Fire Dispatch	9-1-1 Call Answer – 5-yr. total: \$1,977,310 (future cost included in quote)	State of the art technology and tools. Majority of the 5-year known future costs are included with the base pricing for this proposal.	Yes	51% less than the RCMP; Proven leader in the 9-1-1 business; latest technology; world class system and long-term viability.
		Fire Dispatch Services - 5 yr. total: \$5,065,528	<i>Not determined until 2016</i>	N/A	Due to an ongoing fire dispatch console system upgrade, E-Comm is not able to offer fire dispatch service until 2016.
6	Dissolve North Island 9-1-1 Corp	Costing scenarios for this option are varied and ultimately are beyond the scope of this project. Each regional district would be required to obtain proposals for 9-1-1 Call Answer and Fire Dispatch services independently, or as a group, from possible service providers.		No	Due to the effort and complexity with asset distribution involved with the dissolution of North Island 9-1-1 as well as the additional work required to secure service contracts for 9-1-1 Call Answer and Fire Dispatch services as well as the fact that Options 3, 4, and 5 provide significant cost savings compared to the status quo, this option is not recommended for North Island 9-1-1.

7 CONCLUSIONS

A feasibility study (options analysis) is an evaluation and analysis of the potential of a proposed project or change in the way of doing business. It is based on extensive investigation and research to support the process of decision-making.

North Island 9-1-1's scope of work for this project stated, in part, that the project outcome was to "analyze options and develop a recommendation for 9-1-1 call answer sustainable service delivery".¹⁸ Included in the options related to the Primary PSAP function (9-1-1 call answer) that were to be evaluated, North Island 9-1-1 also required an analysis of the current fire dispatch service as provided by Campbell River Fire Department.

The identified metrics of this analysis, at a minimum, were:

- no reduction to the high level of professional service delivery currently received
- call answered within industry standards
- most efficient
- most cost effective
- business continuity plans
- expertise in industry knowledge

After detailed analyses of the various options as presented by North Island 9-1-1, Pomax has determined that an alternative service delivery to the current model meets the identified project analysis metrics.

¹⁸ North Island 9-1-1 Corporation Scope of Work, page 1

8 CONCLUSIONS AND RECOMMENDATIONS

The options to be assessed, as presented by North Island 9-1-1 were:

- Existing model - North Island 9-1-1 contracts with RCMP & Campbell River Fire Department
- New stand-alone 9-1-1 call answer and fire dispatch centre
- One contract for 9-1-1 call answer and fire dispatch with Campbell River Fire Department
- One contract for 9-1-1 call answer and fire dispatch with E-Comm
- Separate contracts for 9-1-1 call answer with E-Comm and fire dispatch with Campbell River Fire Department
- Dissolve North Island 9-1-1 Corporation and each regional district contracts for 9-1-1 call answer and fire dispatch individually

Following are Pomax's summary of the option and our recommendations.

8.1 Existing Model

8.2 9-1-1 Call Answer – Conclusions and Recommendation

We examined the current RCMP 9-1-1 Call Answer Service along with the CRFD and E-Comm Call Answer proposals from a technical and financial perspective and based on the information that we have to this point we have come to the conclusion that all three 9-1-1 Call Answer options appear to be acceptable.

Based on the review, we have concluded that the current service provided by the Courtenay RCMP Operational Communications Center works quite well; the drawbacks to this option are cost and future technology requirements.

Campbell River Fire Department 9-1-1 Call Answer Proposal

The 9-1-1 Call Answer proposal put forward by Campbell River Fire Department should readily meet the important Initial Criteria with respect to having: *no reduction to the high level of professional service delivery currently received; and call answered within industry standards*. The estimated costs put forward are very *cost effective* in comparison to the RCMP; however this is not a fixed price proposal, therefore actual costs including future contract settlements and expenses towards the transition to a new facility in 2018 need to be considered as well. Analysis with respect to *efficiency, business continuity, and expertise in industry knowledge* are inconclusive because this is a newly proposed line of business for CRFD. Nevertheless, we understand that the Campbell River Fire Department has ably acted in the role of a secondary PSAP and fire dispatch service for many years.

E-Comm 9-1-1 Call Answer Proposal

The 9-1-1 Call Answer proposal put forward by E-Comm should readily meet the important Initial Criteria with respect to having: *no reduction to the high level of professional service delivery currently received; and call answered within industry standards.* The estimated costs put forward are very *cost effective* in comparison to the RCMP, with a fixed price and known future costs included. Analysis with respect to *efficiency, business continuity, and expertise in industry knowledge* support E-Comm.

8.3 Fire Dispatch – Conclusions and Recommendations

A detailed evaluation of the CRFD and E-Comm fire dispatch proposal has been conducted, considering the technical and financial merits of each proposal. For the purposes of recommending sustainable Fire Dispatch service delivery that ensures sustainable service delivery for the shareholders of the North Island 9-1-1 Corporation, this analysis has been focused on CRFD and E-Comm only.

Campbell River Fire Department Fire Dispatch Proposal

In consideration of the CRFD proposal, CRFD has been the fire dispatch service provider to North Island 9-1-1 since the inception of the corporation in 1995 and the corporation has stated that since that time the CRFD has “provided exceptional professional service on behalf of the North Island 9-1-1 Corporation”.¹⁹

The current Fire Dispatch service model is not a typical fee-for-service agreement between North Island 9-1-1 and CRFD; rather the agreement requires CRFD to provide staffing, supervision, and management of the fire dispatch centre. Costs for these services are presented to the North Island 9-1-1 board of directors as cost projections over a fire-year term. However, the agreement is structured such that CRFD recovers actual costs expended on an annual basis by way of an annual reconciliation report that is presented to the board. The North Island 9-1-1 is responsible for all other costs associated with the operation of the fire dispatch service including all capital expenditures including equipment and technology used in the fire dispatch centre, system maintenance, etc. North Island 9-1-1 also has direct corporate employee, the Manager of System Technology, who is responsible for the management of the fire dispatch system.

North Island 9-1-1 has been proactive in ensuring that its system related equipment and technologies are maintained and upgraded. Recent upgrades by North Island 9-1-1 to the fire dispatch centre equipment and technologies has ensure that CRFD is using state-of-the art systems.

The CRFD proposal offers:

- Industry leading computer aided dispatch (CAD) software
- State-of-the art control console technology

¹⁹ North Island 9-1-1 Corporation Scope of Work, page 1

- adherence to applicable industry standards related to fire dispatch
- an effective quality assurance program
- a staffing model that meets the applicable standards and metrics for fire dispatch delivery

E-Comm Fire Dispatch Service Proposal

E-Comm very successfully provides fire dispatch and call-taking services for 18 fire departments in three regional districts, is one of the largest dispatch centres in Western Canada, and currently provides emergency call-taking & dispatch services for a complete range of fire departments totaling more than 90,000 CAD events per year.²⁰ In addition to their extensive experience in providing this service, they offer:

- a state-of-the art communications
- computer aided dispatch (CAD) and other technologies
- adherence to all industry standards applicable to fire dispatch
- a significant quality assurance and monitoring program
- a staffing model that allows dispatchers to be reassigned as operations dictate
- 24/7 operational management
- a structured internal reporting structure with executive oversight

Due to a proposed fire dispatch system technology upgrade, E-Comm is not able to offer fire dispatch service until sometime in 2016. Given the fact that CRFD requires 18 months' notice to terminate the existing contract, this delayed availability would not be a factor if this choice was pursued.

8.4 Other Options – Conclusions and Recommendations

In addition to the review and analyses of the 9-1-1 call answer proposals from CRFD and E-Comm, the following options have also been considered:

- Status quo; RCMP providing 9-1-1 Call Answer service and CRFD providing Fire Dispatch service
- newly constructed North Island 9-1-1 stand-alone facility; 9-1-1 Call Answer and Fire Dispatch services provided by North Island 9-1-1 employees
- dissolution of North Island 9-1-1; each participating regional district would be responsible for entering into their own 9-1-1 Call Answer and Fire Dispatch service agreements

Status Quo

The significant challenge with this option are the increased costs from the RCMP. The RCMP has made their position clear; Primary PSAP is not a core service of the RCMP and will only be provided based on a full cost-recovery basis. North Island 9-1-1 states that the “RCMP has, since 1995, provided exceptional professional service on behalf of the North Island 9-1-1 Corporation. A challenge from the beginning has

²⁰ E-Comm proposal: NI911 – Sustainable Service Options Analysis – Proposal for Fire Dispatch Services, page 3

been the cost related to providing the service from the perspective of the 24/7 operations and the link to federal treasury board RCMP wages”.²¹

Under this option, CRFD would continue to provide fire dispatch services for North Island 9-1-1.

Due solely to the increases in the RCMP’s staffing costs as well as the identification that North Island 9-1-1 needs to fund an additional full time equivalent position, this option is not recommended.

Stand-Alone Facility

Based on rough order of magnitude cost estimates for the construction and annual maintenance and operation of a newly constructed purpose-built facility as well as the recommended staffing model, the North Island 9-1-1 can conceivably construct and staff its own facility for less than the current service delivery model, based on a five-year term.

However, while the anticipated costs savings are approximately \$700,000 over the five-year term, other options provide a greater cost return with much less effort and investment from North Island 9-1-1.

This option is not recommended.

Dissolution of North Island 9-1-1 Corporation

This option presents some of the greatest challenges with respect to financial and operational considerations. In depth effort is required in order to determine the value of each stakeholder’s existing capital investments into the system. A plan would have to be developed on how best and most efficiently distribute the assets to one or more of the regional districts. In addition, detailed and technical planning would be required to determine what additional capital purchases would be required in order for each stakeholder to continue to provide these services and service contracts would have to be established with either CRFD and/or E-Comm.

With respect to E-Comm service delivery, they have advised that their preference is not to establish service agreement with each individual regional district and that their proposal “is based on a single point of contact at either the North Island 9-1-1 Corporation or one of the Regional Districts acting on behalf of the total group. If alternate solutions are desired they can be investigated and provided but additional costs are anticipated”.²² In this regards, CRFD has advised that they “would be interested in exploring providing PSAP and SSAP services as required by each regional district in the event that North Island 9-1-1 Corp is dissolved”.²³

²¹ North Island 9-1-1 Corporation Scope of Work, page 1

²² E-Comm proposal: 9-1-1 Public Safety Point Services for the North Island 9-1-1 Corporation, page 10

²³ Email from Deputy Chief Chris Vrabel, January 15, 2014

Due the complexities and the extensive effort required to work through the variation issues associated with the dissolution of the North Island 9-1-1 and that there would be minimal cost savings recognized, this option is not recommended.

8.5 Recommendations and Rationale:

As North Island 9-1-1 has acknowledged, the Campbell River Fire Department has successfully and effectively provided fire dispatch service since 1995. Under this service delivery model, North Island has direct management and ownership of the system and the ability to design the system to meet the needs of the fire departments. North Island 9-1-1 has developed and maintained a state-of-the art system, as recognized with the recent implementation of the new Avtec Scout console technology. The majority of the North island 9-1-1 fire departments are small, volunteer departments and the fire dispatch service provided by CRFD has been designed to meet the needs of these agencies. Small, volunteer departments present unique operational needs compared to larger, career departments in that volunteer departments may, at times, require an increased level of service by the dispatch centre in order to provide additional support and assistance than a career department may require. As an example, this increased service can be the result of a department having a low department turn out to an emergency incident and requiring the dispatch centre to provide additional services in resourcing, mutual aid coordination, etc. that may not be required for a career department.

E-Comm offers an extremely advanced fire dispatch service including state-of-the art technologies and a staffing model that allows flexibility to increase staffing in real time as situations dictate. E-Comm is in the preliminary stages of upgrading their fire dispatch console technology and, as a result, are not able to offer fire dispatch service until 2016. E-Comm provides a high level of service to their career fire dispatch clients but it has been noted by some of the volunteer and composite departments that the services, often tailored for urban fire response, sometimes exceed the need of the departments.

E-Comm’s service delivery cost for 2016, 2017, and 2018 is \$33,936 more than CRFD. This additional cost is reflected, in part, to the initial, one-time costs necessary for the service implementation. An evaluation of the annual operating costs for this same period identifies that the E-Comm proposal provides a \$383,804 savings over the CRFD option.

Annual Operating Costs	2016	2017	2018	Total
Campbell River Fire Department	\$1,013,727	\$1,033,076	\$1,052,811	\$3,099,614
E-Comm	\$877,500	\$904,950	\$933,360	\$2,715,810
E-Comm Savings (over three years)				\$383,804

Considerations:

We have found that either E-Comm or Campbell River Fire Department are most capable of providing both 9-1-1 primary answer and fire dispatch services on a sustainable basis. There were some considerations, though, that lead us to our recommendations.

- Campbell River Fire Department flows through the cost of service provision to North Island 9-1-1 Corporation. The advantage to this model is that the corporation pays only those costs that are incurred as a result of the service being provided. The disadvantage is that the corporation is not able to budget for specific amounts since the actual costs of staffing and operation are not fully available until the end of the budget year. Additionally, staff costs are tied to International Fire Fighter Association negotiations that take place at several fire services in British Columbia. We consider this annual unknown as a significant challenge for the corporation.
- Changes to 9-1-1 systems, such as Text capable 9-1-1 and Next Generation 9-1-1 will take place rapidly and public safety answering points will eventually, if not sooner, adopt technology capable of T9-1-1 and NG 9-1-1. E-Comm is already capable of that technology while Campbell River Fire Department would have to go through an upgrade process. Even Order of Magnitude costs have been provided in this report, actual costs are not yet definable. An additional consideration is that CRFD would have to proceed through a full 9-1-1 implementation, training and start-up whereas that is not the case with E-Comm. However, we are confident that CRFD is capable of accomplishing that process.
- With respect to E-Comm, it is not able to provide information, until 2016, related to the actual cost of providing fire dispatch services. This represents an unknown for the North Island Corporation that makes it difficult to choose the E-Comm option for fire dispatching

Therefore we recommend that the North Island Corporation:

3. Enter into negotiations with E-Comm 9-1-1 to move 9-1-1 Call Answer Services from the RCMP to E-Comm by November of 2014.

E-Comm offers a purpose built world class facility and operations with turnkey delivery to meet the tight transition timelines required to move from the RCMP. It is more expensive than the CRFD 9-1-1 Call Answer proposal, however this recommendation mitigates the unknowns and logistics of moving to a new call answer service.

4. Maintain the existing Fire Dispatch Services contract with the City of Campbell River through to April 1, 2018

The E-Comm Fire Dispatch proposal is less expensive than maintaining the current CRFD contract; however this recommendation mitigates the unknowns and logistics associated with not knowing the cost of E-Comm fire dispatch. Starting in 2016 the corporation should revisit the option of contracting E-Comm for fire dispatch services.

In the meantime, the corporation should consider negotiating a fixed fee contract with Campbell River for fire dispatch.

APPENDIX A – Glossary of Terms

Acronyms used in this report are presented below for references purposes.

ALI	Automatic Location Identification
ANI	Automatic Number Identification
AQS	Automatic Location Information (ALI) Query Server
APCO	Association of Public-Safety Communications Officials
CAD	Computer-Aided Dispatch
CRTC	Canadian Radio-television Telecommunications Commission
ESWG	Emergency Services Working Group (which reports to the CRTC)
FTE	Full Time Equivalent
MPLS	Multiprotocol Label Switching
NENA	National Emergency Number Association
NG9-1-1	Next generation 9-1-1
Operational Communications Center	Operational Communication Centre
PSAP	Public Safety Answering Point
RCMP	Royal Canadian Mounted Police
SIP	Session Initiated Protocol
VoIP	Voice over Internet Protocol (IP)

APPENDIX B – City of Campbell River Fire Department 9-1-1 Call Answer Services Proposal



February 7, 2014

Pomax Consulting Inc

Sent via email only

Dear Keith Meldrum:

Re: Expression of Interest to provide 9-1-1 Public Safety Answering Point (PSAP) Services for the North Island 9-1-1 Corporation in Campbell River

Attached is an Expression of Interest from the City of Campbell River regarding the opportunity to provide 9-1-1 PSAP services on behalf of the North Island 9-1-1 Corporation.

This document is solely intended to provide high level information only pertaining to the City's desire to participate in the delivery of 9-1-1 PSAP services, the current capabilities of staff, the proposed service delivery model, and the associated costs over and above the existing costs of providing fire dispatch services.

This expression of interest is not binding in any way and any offers received by the City in response to this Expression of Interest are subject to the approval of City of Campbell River Council.

Yours truly,

A handwritten signature in black ink, appearing to read "Ian Baikie", written in a cursive style.

Ian Baikie, ENP,
Fire Chief

Fire Department

675 13th Avenue, Campbell River, B.C. V9W 6C1
Telephone: 250.286.6266; Fax: 250.286.6741

Scope – The intent of this document is to convey to the North Island 9-1-1 Corporation that the City of Campbell River is the most appropriate agency to deliver PSAP services on behalf of the North Island 9-1-1 Corporation.

Advantages – Enabling the City of Campbell River to provide both primary (call answer) and secondary (fire) dispatch services creates the following advantages for the North Island 9-1-1 Corporation:

1. The City of Campbell River provides dispatch services on behalf of NI 911 Corp on a non-profit basis. The agreement between the City and NI 911 Corp is based on “actual” costs of the service.
2. NI 911 Corp maintains the ability to control service levels. With PSAP and Fire SSAP services being managed by the City, NI 9-1-1 Corp can provide service level direction to the City to ensure that 9-1-1 information from callers to 9-1-1 is conveyed to fire departments in a timely and efficient manner.

Management Team – The Chief and Deputy Chief have a combined 11 years experience in dispatching fire services on the North Island. The Fire Chief is an Emergency Number Professional (ENP) as recognized by the National Emergency Number Association. The management team has a proven track record for positive performance in the areas of risk management and service delivery.

Dispatch Staff – There are currently ten dispatchers on staff who are certified by APCO International in the areas of Public Safety Telecommunicator 1 and Fire Service Communications. The dispatchers also meet or exceed the professional requirements listed by the National Fire Protection Association Standard 1061 “Professional Qualifications for Public Safety Telecommunicators”

Staffing Model – Currently there are two dispatchers working on a 24/7 operational basis. The proposal is that a third dispatcher position be created to work the hours between 0900 and 2100 seven days a week. To accomplish this an additional 2.8 FTE’s will be hired with impacts to the budget outlined below. This model has been chosen based on a review of the 2012 and 2013 9-1-1 Call statistics supplied by Telus and are included in the attachments 1 & 2 of this document.

As a reference the City of Grand Prairie, AB currently operates a 9-1-1 Call Answer and fire dispatch center and would be an appropriate comparable to illustrate that the proposed model is appropriate.

Budget – The following increase are required to schedule C “operating expenses” in agreement between the City of Campbell River and the North Island 9-1-1 Corporation:

Additional costs to NI 911 Corp for provision of PSAP services by the City of Campbell River	2015	2016	2017	2018	2019
	250,940	284,227	310,426	319,804	353,884

Note:

- These costs include, wages, benefits, training for the additional 2.8 FTE and increased lease costs
- Included in these annual costs is a provision for 3% wage increases for 2012 to 2019.

Technical considerations

CAD – One additional CAD license is required at a cost of \$10,000 plus annual maintenance. The Trittech CAD system is state of the art and fully configurable to perform call taking for primary, fire, medical and law enforcement.

Telus – There will be a requirement to move the primary service from Courtenay to Campbell River. Currently there are three 9-1-1 lines in Campbell River and the number would be increased to six. The costs from Telus are estimated at \$31, 375 to complete the work and one consideration is that the North Island 9-1-1 Corporation will have to pay these costs no matter where the primary service is re-located to. See attachment #3

Phone system No changes are required to the current Meridian phone system as it has the capacity for the number of 9-1-1 lines to be increased from three to six lines.

Workstation additions – There is a 2014 capital project plan to replace the two existing work stations. One of the current workstations will have to remain in addition to the two new workstations for a total of three fully functional (radio/CAD/telephone) consoles. In addition there are two existing call taking (CAD/telephone) consoles. The total number of call taker positions will be five.

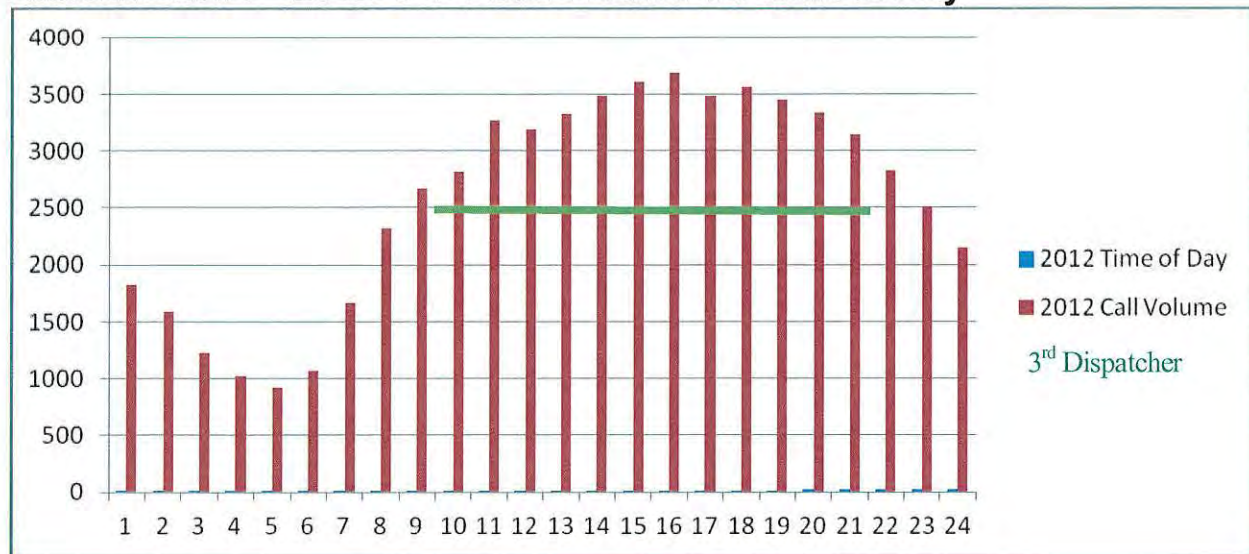
Facility considerations – The total leased space for dispatch services will increase in size from 775 sq ft to approximately 900 sq ft as illustrated in attachment 4. The lease rate charges for 2015 will increase by a total of approximately \$1,556 based on the scheduled 2015 charge of \$12.48 per square foot.

There will be a one time (lease hold improvement) capital cost of \$40,000 to the North Island 9-1-1 Corporation to complete the necessary renovations to the dispatch center to accommodate a third workstation.

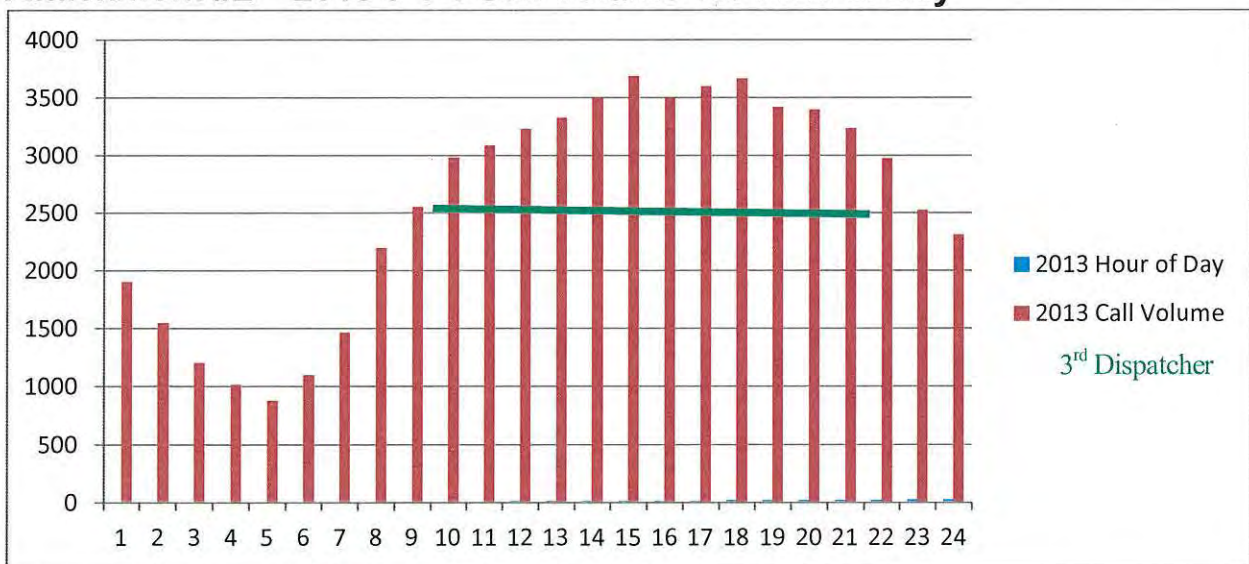
In 2018 a new post disaster facility will be constructed in Campbell River to house fire station #1 operations which will include appropriate spaces for a 9-1-1 communication center with six console positions including 9-1-1 support services.

Service levels – Service levels will be based on the City of Grand Prairie model and maintained in accordance the section on PSAP operations as outlined in section 3 of the RCMP “E” Division 9-1-1 PSAP Operations Manual.

Attachment #1 – 2012 9-1-1 Call Volume vs. Time of Day



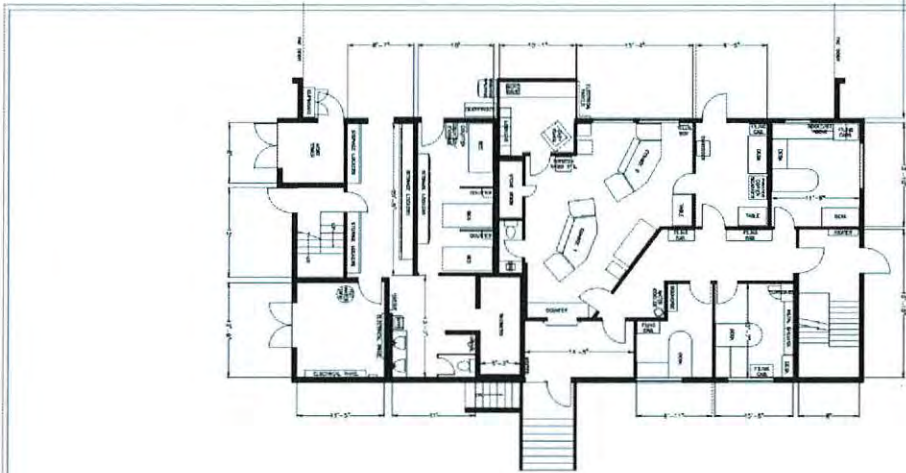
Attachment #2 – 2013 9-1-1 Call Volume vs. Time of Day



Attachment #3 – Quote from Telus re: relocate primary 9-1-1 service

Contract Group	ESN/RD	ESN Group/RD - Migration Fee	ESN Testing Hours	ESN Testing Cost	Centrex Primary ACD	Centrex Secondary ACD	Project Management	Summary Items	Total RD/Project Costs
North Island Regional District	1	\$2,000.00	2	\$200.00	\$2,100.00	\$2,100.00	75 hrs		
Powell River Regional District	1	\$2,000.00	2	\$200.00	\$2,100.00	\$2,100.00			
		\$4,000.00		\$200.00	\$2,100.00	\$2,100.00	\$18,875.00	\$6,100.00	\$31,375.00
DVACS circuit move	1	\$500.00							
Coordination	6	\$900.00							
Line Testing	4	\$600.00							
Establish New PSAP (Prim & Sec)	2	\$2,600.00							
911 Data Reconfiguration	2	\$1,500.00							
Summary Items		\$6,100.00							

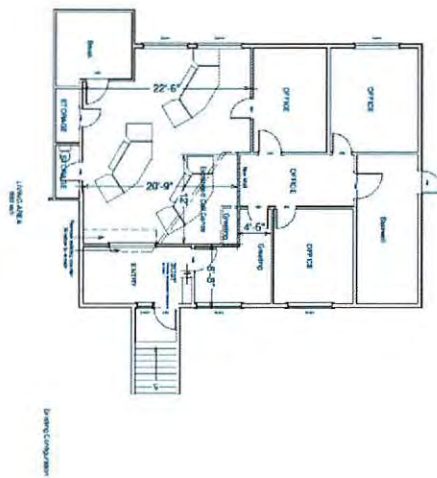
Attachment #4 – Proposed new layout for Dispatch Center



EXISTING LAYOUT

1st Floor

11:49pm 8/26/2014 11:49:00 AM



PROPOSED LAYOUT

A-1	SHEET:	SCALE: 1/4" = 1'-0"	DATE: 1/31/2014	DRAWING PROVIDED BY: Denise Mitchell Interiors 1423C 16th Avenue Campbell River, British Columbia V9W2E4 250-830-4933	PROJECT DESCRIPTION: Campbell River Fire/Police Emergency Response Renovation	SHEET TITLE:		NO.	DESCRIPTION	BY	DATE

APPENDIX C – E-Comm 9-1-1 Call Answer Services Proposal

February 20, 2014

POMAX Consulting Inc.

468 – 663 Denali Court,

Kelowna, B.C.,

V1V 2R3

Attention: Chris Kellett

File Ref: 9-MOU

RE: NI911 – Sustainable Service Options Analysis – E-Comm 9-1-1 PSAP Proposal - Updated

Dear Chris:

Please find enclosed E-Comm's updated 9-1-1 PSAP proposal to the North Island 9-1-1 Corporation (NI9-1-1) who contracts for the primary PSAP services on behalf of the regional districts of Alberni-Clayoquot, Comox Valley, Mt. Waddington, Nanaimo(School District #69), Powell River and Strathcona. Our proposal has been updated to include pricing options for including or excluding call determination for abandoned calls.

We are confident that E-Comm can provide your primary 9-1-1 Public Safety Answer Point (PSAP) services professionally and cost effectively with high reliability based on our extensive experience in providing 9-1-1 call-answer service for the past 14 years. The consistently high service level provided to the Greater Vancouver Regional District, District of Squamish and the Squamish Lillooet Regional District demonstrates that E-Comm is well-positioned to provide this critical service to the North Island 9-1-1 Corporation and the regional districts you serve. Recent changes in 9-1-1 service delivery policy by TELUS have now made the technical ability for regional districts in other parts of the province to leverage the service capabilities and cost efficiencies of E-Comm in communities located outside of southwestern B.C.

E-Comm has operated a 9-1-1 primary public-safety answering point (PPSAP) and secondary public safety answer point (SPSAP) for 14 years. The company also owns and manages the wide-area radio network, used by police, fire and ambulance personnel throughout Metro Vancouver and Abbotsford. E-Comm is a not-for-profit organization owned by its shareholders and established under the provincial Emergency Communications Corporations Act. E-Comm's sole purpose is to deliver emergency communication services to public-safety agencies and governments.



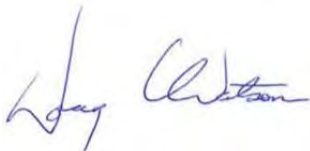
Currently managing almost 900,000 9-1-1 calls each year, E-Comm also provides emergency and non-emergency call-taking and dispatch services for 32 police and fire departments.

E-Comm has earned a reputation as a leading emergency communications centre in North America and enjoys an 88% confidence rating among residents of our service area. One reason for this is our ability to prepare for and respond to the demands of high 9-1-1 call volume.

Looking forward, E-Comm is also taking a leadership role in the development of a long-term vision of 9-1-1 through the development of the “Next Generation 9-1-1” (NG911) system for B.C. As we outlined in our recent public consultation paper submitted to the CRTC, NG911 represents a significant evolution for 9-1-1 systems and E-Comm intends to continue to contribute to this progression at both the provincial and national levels over the coming years.

It has been our privilege to provide 9-1-1 call-answer service to residents of our current service areas and we are anxious to provide that same high-level of service to your communities. We look forward to answering any questions you might have and to discussing our proposal at your convenience.

Respectfully submitted,



Doug Watson, Vice-President of Operations
E-Comm 9-1-1 Emergency Communications for Southwest British Columbia
Direct line: 604-215-5006

Cc: Jon Ambler, President NI9-1-1 Corporation
D. Oakman, CMA, Secretary NI 9-1-1 Corporation



February 20, 2014

proposal for

9-1-1 Public Safety Point Services

for the

North Island 9-1-1 Corporation



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I. Proposal Summary

E-Comm has provided 9-1-1 call answer services to communities for the past 14 years and can expand to also provide 9-1-1 Public Safety Answer Point (PSAP) services to the communities within your Regional Districts professionally, reliably and cost effectively as demonstrated by our extensive experience. Our consistently high service level provided to the Greater Vancouver Regional District, District of Squamish and the Squamish Lillooet Regional District demonstrates that E-Comm is well-positioned to provide this critical service to the North Island 9-1-1 Corporation (NI9-1-1) who provides the Primary PSAP services to the regional districts of Alberni-Clayoquot, Comox Valley, Mt. Waddington, Nanaimo (School District #69), Powell River and Strathcona. Recent changes in 9-1-1 service delivery policy by TELUS have now made the technical ability for Cities and Regional Districts in other parts of the province to leverage the service capabilities and cost efficiencies of E-Comm in communities located outside of southwestern B.C. Contained in this proposal is a summary of our organizations capabilities and our proposed approach to provide 9-1-1 Public Safety Answer Point services to the NI9-1-1 and your partner Regional Districts.

II. Overview of E-Comm

E-Comm is the emergency communications centre providing communication services and support systems to emergency responders and the more than two-million residents of southwest B.C. they serve. Currently managing almost 900,000 9-1-1 calls each year, E-Comm operates a 9-1-1 Public Safety Answer Point (PSAP) and provides 9-1-1 services to 3 regional districts as well as emergency and non-emergency call-taking and dispatch services for 32 police and fire departments. E-Comm also owns and operates the region's Wide-Area Radio Network.

E-Comm was created to improve emergency communications in the Lower Mainland following the 1994 Stanley Cup Riot and became operational in 1999. As an essential-service provider, E-Comm is governed in part under the British Columbia Emergency Communications Corporations Act.

Our Vision:

Safer communities in British Columbia through excellence in public-safety communication.

Our Mission:

To deliver exceptional emergency communication services that help save lives and protect property, and to advance public-safety partnerships.

Our Values:

Respect, Accountability, Integrity, Service, Collaboration.

Our emergency dispatch centre is located at 3301 East Pender Street in Vancouver in a three-level, 60,000 square-foot reinforced concrete post-disaster facility that is securely separated from other structures and designed for our needs. Our facility is nationally acclaimed and specifically designed to facilitate and maintain critical communication links during emergencies.

III. Relevant Company Experience

Southwest British Columbia's 9-1-1 business, operated by E-Comm, provides a highly-reliable, life-saving emergency service with a breadth of built-in redundancies.

E-Comm provides the public with a single point-of-contact for police, fire and ambulance when immediate action is required. As the 9-1-1 PSAP for three regional districts and other communities, with a combined population base of more than two million, E-Comm is able to receive 9-1-1 calls from landlines, cellular and Voice-over Internet Protocol (VoIP) phones. E-Comm has operated a 9-1-1 primary PSAP and a secondary PSAP for 14 years and has earned a reputation as a leading emergency communications centre in North America, enjoying a 88% confidence rating among residents of our service area.

E-Comm is contractually required to answer 95% of the almost 900,000 9-1-1 calls we receive each year in five-seconds or less. This is a very rigorous call-answer standard and one we consistently meet or exceed. In 2010, 2011, 2012, and 2013 the service levels achieved in these years were 96%, 97 %, 98% and 98% respectively consistently exceeding our contractual target of 95% of calls are to be answered in five seconds or less.

In our 14 years as a Primary and Secondary PSAP, E-Comm has been recognized as a leader in emergency communications. Recent examples include:

- Chosen by the CRTC as one of the three national trial sites for Wireless Phase II and as one of only four national trial sites for "Text with 9-1-1" services for the hearing and speech impaired.
- Awarded the 2011 *Community Safety Partner Agency Award* (Richmond Chamber of Commerce) for our handling of a major plane crash in 2010.
- Awarded the 2011 Association of Public-Safety Communication Officials (Canada) Excellence in Teamwork Award for our handling of the civic unrest on the first day of the 2010 Winter Olympics.

E-COMM Advantage

- The experience of answering more than 13 million 9-1-1 calls since 1999
- The knowledge and ability to forecast and implement staffing levels for anticipated call volumes
- The unique flexibility to seamlessly increase resources for answering 9-1-1 calls during unplanned events (major fire, plane crash etc.,) due to the size and scope of our centre
- A purpose-built facility with extremely resilient operational technologies and electronic security, with back-up power and many other communication and facility redundancies
- Call-answer equipment and voice recording systems that are fully compatible with the TELUS network including industry leading 9-1-1 automatic call-distribution routing technology
- 24-hour onsite management and oversight
- 24-hour access to interpretation service with access to interpreters in more than 170 languages
- Fully provisioned and physically separated back-up facility with regularly tested transition process capable of handling all of the dispatch services at our primary location.
- Professional in-house comprehensive training program with ongoing mentoring and staff development
- The continuous collection, monitoring and reporting of service level performance against rigorous standards (95% of 9-1-1 calls answered in five seconds or less)
- Annual public confidence and 9-1-1 education/awareness campaigns
- In-house voice records and quality assurance departments
- In-house 24/7 information technology service desk with the depth and breadth of experience to support mission-critical software across a variety of platforms to ensure continuity of service

Current E-Comm 9-1-1 Customers

Urban	<ul style="list-style-type: none"> ○ Metro Vancouver (Greater Vancouver Regional District – GVRD)
Composite	<ul style="list-style-type: none"> ○ District of Squamish ○ Resort Municipality of Whistler (under GVRD)
Rural	<ul style="list-style-type: none"> ○ Sunshine Coast Regional District (under GVRD) ○ Squamish Lillooet Regional District (SLRD - South)

Current E-Comm Fire Dispatch Customers

Urban	<ul style="list-style-type: none"> ○ Vancouver Fire & Rescue Services ○ Richmond Fire-Rescue Services ○ Delta Fire & Emergency Services ○ Port Moody Fire-Rescue ○ New Westminster Fire & Rescue Service
Composite	<ul style="list-style-type: none"> ○ Squamish Fire-Rescue ○ Whistler Fire Department
Rural	<ul style="list-style-type: none"> ○ Gibsons & District Volunteer Fire Department ○ Roberts Creek Fire Department ○ Sechelt Volunteer Fire Department ○ Halfmoon Bay Fire Department ○ Pender Harbour Fire Department ○ Egmont & District Fire Department ○ Garibaldi Fire Department ○ Pemberton Fire Department ○ Birken Fire Department ○ D’Arcy Fire Department ○ East Howe Sound Fire Protection District (under SLRD South): <ul style="list-style-type: none"> ○ Britannia Beach, Porteau Cove, Furry Creek

Current E-Comm Police Dispatch Customers

Urban	<ul style="list-style-type: none"> ○ Vancouver Police Department ○ Burnaby RCMP ○ New Westminster Police Department ○ Richmond RCMP ○ Ridge Meadows RCMP ○ UBC RCMP ○ West Vancouver Police Department
Freeways	<ul style="list-style-type: none"> ○ Deas Island Freeway Patrol (RCMP) ○ Port Mann Freeway Patrol (RCMP)
Rural	<ul style="list-style-type: none"> ○ Squamish RCMP ○ Whistler RCMP ○ Pemberton RCMP ○ Sunshine Coast RCMP ○ Mt. Currie Tribal Police ○ Bowen Island RCMP

IV. Service Delivery and Back-Up

E-Comm uses a variety of technologies to support 9-1-1 call-answer and has worked very closely with TELUS over the past 14 years to optimize the 9-1-1 call-handling system to ensure that our emergency dispatch centre provides 9-1-1 call answering with the highest levels of service and reliability. E-Comm maintains an ongoing maintenance and upgrade strategy for all critical systems to ensure they are all kept up-to-date.

We have also identified a number of other critical requirements of providing 9-1-1 service.

- E-Comm's primary infrastructure asset is a 60,000 square-foot purpose-built reinforced concrete facility complete with multiple power sources: Hydro power, UPS and diesel generators, and multiple communication redundancies from TELUS to ensure continuous service for its mission-critical operations.
- Off-site back-up capability for all PSAP, call-taking and dispatch operations.
- E-Comm is connected to the TELUS 9-1-1 network through 15 primary 9-1-1 trunks with the ability to queue an additional 85 callers at the Primary Tandem. There are also 15 additional back-up 9-1-1 trunks delivered via an alternate Secondary Tandem. With the addition of your PSAP, TELUS will assess and install the number of trunks required to ensure the Grade of Service standard is achieved.
- E-Comm also leverages Automatic Call Distribution (ACD) to improve service levels, and utilizes a variety of functions:
 - "Call Force," which eliminates ringing for incoming 9-1-1 calls to increase the speed at which calls are answered.
 - Automatic queuing and prioritization of incoming 9-1-1 calls during periods of high traffic.
 - An integrated contact centre management application (Avaya Aura Contact Centre), to enable on-duty managers to optimize the assignment of call agents to queues.
 - Continuous exporting of call-related data to a variety of other systems in order to track, analyze and optimize service levels.

E-Comm has worked very closely with TELUS to optimize the 9-1-1 call handling system. For example, we have the ability to communicate call answer information (position identifier) seamlessly from our Avaya CS-1000E PBX to the TELUS 9-1-1 network. This is a key benefit of using the Avaya ACD and PBX technology in a 9-1-1 environment. TELUS has established this architecture as the baseline for its 9-1-1 network evolution and E-Comm is the first PSAP in B.C. to implement this industry leading practice.

E-Comm also utilizes the Versaterm Computer-Aided Dispatch (CAD) application, provided by PRIME-BC, within its 9-1-1 Primary PSAP and police Secondary PSAP operations. In addition, E-Comm operates an Intergraph CAD system for its 9-1-1 PSAP and fire Secondary PSAP operations. Both systems utilize the same mapping database, which is developed and maintained by E-Comm GIS staff.

Backup

In addition to the redundancies of the infrastructure in place at our building serving our communication centre, E-Comm has a complete, warm backup centre at British Columbia Ambulance Service (BCAS) with functionality for 9-1-1; call taking, dispatch and radio management in the unlikely event that an evacuation of the building is required.

Our target time to have 9-1-1 PSAP service, Police and Fire call taking and dispatch restored on backup capabilities is 5 minutes or less.

During transit from the E-Comm building to BCAS, 9-1-1 calls are handled by BCAS operators with Call Taking and Dispatch maintained by E-Comm staff using portable devices to ensure there is an absolute minimum of down time or lack of service if a major event were to occur.

The target time to reach full call taking and dispatch capability at the backup site in the event of a need to vacate our primary location is 30 minutes.

Network Enhancements to handle 9-1-1 Calls from the North Island Communities

In preparation of this proposal to provide your 9-1-1 PSAP service, E-Comm worked closely with TELUS to develop an optimum network design. The network design needs to enable routing of 9-1-1 calls from the six regional districts covered by the NI9-1-1 Corporation to our emergency communication centre in Vancouver safely, reliably and cost effectively. The network design developed has considered both normal situations as well as reliable back up provisions for multiple possible network impairment or failure possibilities. A short description of each of the network configurations are provided below for your information. A drawing of each is also attached for reference.

- Configuration 1 – Normal Operation (Figure 1)

9-1-1 calls will continue to route from the North Island communities into the TELUS Tandem switch in Victoria but instead of routing the calls to the RCMP dispatch centre in Courtenay as they do today, the calls will be routed to the E-Comm emergency communication centre in Vancouver through the TELUS transport network.

- Configuration 2 – Service Impairment or Failure of the TELUS Tandem Switch in Victoria (Figure 2)

If there ever was an impairment or failure of the TELUS Tandem Switch in Victoria or the TELUS network facilities connecting the central island central offices to Victoria or Victoria to the E-Comm emergency communication centre in Vancouver resulting in a service interruption to 9-1-1, calls would be routed automatically to a second, independent TELUS Tandem switch located in Vancouver. The 9-1-1 calls would then be routed automatically from the back-up tandem switch in Vancouver to the E-Comm emergency communication centre through the E-Comm backup centre facility located at BC Ambulance Service in Vancouver on fully diversified TELUS network facilities from the North Island.

- Configuration 3 – Service Impairment or Failure at E-Comm (Figure 3)

If there ever was an impairment or failure at E-Comm causing a service interruption to 9-1-1, the calls would be rerouted to the E-Comm backup facility located at the BCAS dispatch centre in Vancouver. Arrangements are in place with BCAS to answer and handle the incoming 9-1-1 calls until E-Comm staff can relocate to the BCAS centre. The target to activate the transfer of 9-1-1 calls and arrange for the temporary answer of the calls by BCAS staff is 5 minutes and the target time to relocate E-Comm staff to BCAS is 30 minutes or less.

- Configuration 4 – “Fail Safe” provision for a total loss of TELUS network service to the Lower Mainland from the North Island (Figure 4)

The final configuration is a “fail-safe” provision for the very unlikely event that there is a total loss of network connectivity from Vancouver Island to the Lower Mainland. In this case the 9-1-1 calls would be rerouted to an alternate dispatch centre on Vancouver Island. While arrangements with an alternative dispatch centre have not been finalized, BCAS is one possible choice and they are receptive to performing the 9-1-1 PSAP service from their centre in Victoria if this event were to occur.

V. Future 9-1-1 Services

Work is currently underway to develop and implement new 9-1-1 service capabilities. Next Generation 9-1-1 or NG9-1-1 is the name given to this North America wide initiative aimed to modernize the 9-1-1 network. While the NG9-1-1 initiative will take years to evolve, work is currently underway to establish the policy, technology and operational process requirements.

E-Comm is an active participant in both the technology and operations forums to help determine and guide how these new NG9-1-1 services should be defined. E-Comm has been one of the few locations in Canada to test and evaluate the first of these new services which will provide the Deaf Hard of Hearing and Speech Impaired (DHHSI) community with the ability to communicate with a 9-1-1 centre by a special text-message system. For this service to be implemented, the carriers such as TELUS, Bell, and Rogers as well as all 9-1-1 PSAPs will need to be equipped with the technology and have new operational processes in place. The carriers completed their technology implementation on January 24, 2014 and E-Comm is in the final stage of completing the testing, preparing operational procedures and staff training with an anticipated launch of this first NG9-1-1 service by the end April, 2014. E-Comm will be one of the first PSAPs to have these capabilities in place for this new service.

Other new services such as Text to 9-1-1 and Video to 9-1-1 for the general public are also in the planning stages however, there will be many implications to be considered and resolved. For example how will an operator in a 9-1-1 Centre receive, analyze and manage a live incoming video.

Implementation of these NG9-1-1 services are anticipated to have a significant positive impact on public safety. However, it is important to recognize that a substantial investment in technology to replace, upgrade and add to existing equipment will be required as well as the development of the standards and operational processes to handle and transfer the incoming, text or video in each 9-1-1 centre. It is also expected that an increase in staffing will also be required to handle the incoming calls by video or text.

Due to the involvement by E-Comm in the planning and development of NG9-1-1 services in Canada we anticipate that we will be one of the first centres to be equipped to handle and provide these new 9-1-1 services to the communities of all of our PSAP partners. Smaller standalone PSAPs may have difficulty making the technology and staffing investments required to provide these services.

VI. Personnel

Our staff and management are the foundation that ensures 9-1-1 calls are answered swiftly and effectively:

- E-Comm offers one of the most comprehensive training programs in the industry, resulting in more than 281 highly-trained, professional staff available to support emergency services 24/7. As the largest PSAP in British Columbia, our primary advantage is the size and scope of our centre:
 - 208 regular full-time (RFT) 9-1-1, call-taking and dispatch staff
 - 73 auxiliary 9-1-1, call-taking and dispatch staff
 - 32 support staff working in departments such as Workforce Management, Training, Voice Records, Standards, Policy and Implementation
 - 12 technology specialists support the emergency communication centre
- The combination of our cross-trained workforce and unique ability to quickly shift resources to effectively manage sudden and substantial influxes of 9-1-1 calls helps us to minimize and often eliminate wait times, not always possible in smaller centres.

KEY COMPANY PERSONNEL

David Guscott, President & CEO

- Joined E-Comm in 2010
- Former VANOC executive vice-president in charge of partnerships with government bodies
- Former deputy minister of Transportation, and former deputy minister of Communication, Ontario Provincial Government

Doug Watson, Vice-President of Operations

- Joined E-Comm in 2008
- Former vice-president of Field Operations - TELUS

Mike Webb, Vice-President of Technology Services

- Joined E-Comm in 2011 for the second time (Mike was also part of E-Comm from 1998 - 2000 and was responsible for the implementation of the current regional radio network)
- Former manager, Telecommunications and Specialty Systems, Emergency Management BC

Other key personnel who would support your 9-1-1 Service:

Kim Singh, Operations Manager, Emergency Communication Centre.

- Joined E-Comm in 1999
- Former 9-1-1 call-taker and police dispatcher
- Former auxiliary RCMP officer

Kim is in charge of the 9-1-1 communication centre, working closely with another senior Operations Manager responsible for standards, policies and practices and data collection/management.

There are four teams drawing from more than 281 RFT and auxiliary 9-1-1 call-taking and dispatch employees within the Operations structure that staff the communication centre 24/7. Each team has a manager, a team supervisor and a staffing coordinator.

- The team manager is responsible for creating a cohesive and effective team overall, with a significant focus on staff relations
- The team supervisor is primarily focused on the day-to-day operation of the team; and
- The staffing coordinator called an Intraday Analyst, is primarily focused on proactive queue management and call distribution and adjusting staffing requirements in real time, providing for optimal shift coverage 24/7

In addition to the strong frontline operational oversight team on duty 24/7, the communication centre is also supported by managers responsible for staffing, quality assurance, and training. These managers have a combined total of more than 50 years of 9-1-1 call-taking and dispatch experience.

Naomi Arita, Manager of Technology Service Delivery for 9-1-1, has been with E-Comm since 1999 and is an experienced 9-1-1 telephony manager who currently represents Metro Vancouver on the CRTC's Emergency Services Working Group. Naomi and her team of four technical specialists are responsible for ensuring our 9-1-1 systems are in a continued ready state-of-response.

VII. Pricing

E-Comm's pricing model is based upon being a consolidated dispatch centre (the advantages of which have been outlined in the previous pages of this document) and recovering incremental capital and operating costs in a "*Not For Profit*" model. E-Comm worked closely with TELUS to develop an optimum network design to route 9-1-1 calls from the regional districts of Alberni-Clayoquot, Comox Valley, Mt. Waddington, Nanaimo (School District #69), Powell River and Strathcona represented by the NI9-1-1 Corporation to our emergency communication centre in Vancouver safely, reliably and cost effectively. The network design developed has considered both normal situations as well as reliable back up provisions for multiple possible network impairment or failure possibilities. TELUS has confirmed that there will be no additional recurring costs billed for the delivery of 9-1-1 calls to our emergency communication centre rather than to the current Courtenay RCMP OCC.

To establish the new network routing, back-up and service delivery capabilities there will be initial “make ready” one-time costs required by both TELUS and E-Comm. These total costs have been included in this proposal and bundled into the Levies. In the attached appendix the options of either paying the start up capital cost up front or a bundled operating cost with an annualized portion of the start up capital Levy paid over the five year term have been provided.

For comparative purposes we have provided the 2014 total annual levy below which includes the annual operating cost and the annual portion of the capital costs. The anticipated levies for the next five years have been included in the attached appendix.

2014 total annual levy for PSAP Services is:

- 1. Excluding initial call determination for abandoned calls \$368,480**
- 2. Including initial call determination for abandoned calls \$405,830**

Note: 1. Additional pricing details and the related assumptions are documented in the attached appendix
2. Pricing is based on the written proposal received from TELUS
3. Based on a 5 year agreement
4. Pricing in this proposal is based on a single point of contact at either the North Island 9-1-1 Corporation or one of the Regional Districts acting on behalf of the total group. If alternate solutions are desired they can be investigated and provided but additional costs are anticipated

**Preliminary Estimate for
9-1-1 Public Safety Answer Point Services
February 20, 2014**

	Scenario 1	Scenario 2	Scenario 1 & 2
	Excludes	Includes	Estimated
	Abandon	Abandon	One-Time
	CallBacks	CallBacks	Transition
Agency: North Island 9-1-1			<i>note (d)</i>
2014 Total Annual Levy	\$ 368,480	\$ 405,830	\$ 21,000
	% Increase		
2015 Total Annual Levy Estimates	3.00%	\$ 379,530	\$ 418,000
2016 Total Annual Levy Estimates	3.00%	\$ 390,920	\$ 430,540
2017 Total Annual Levy Estimates	3.00%	\$ 402,650	\$ 443,460
2018 Total Annual Levy Estimates	3.00%	\$ 414,730	\$ 456,760

Notes:

- a) - Based on the 2014 Budget Approved by the E-Comm Board of Directors.
- % targeted average service 95%/5 seconds for 9-1-1 Call Answer.
- 2015 - 2018 Estimates expected to be 3.0% increase annually.

The above levies assumes a minimum 5 year contract term in order to account for capital recovery. A shorter contract term would result in an increase to the annual estimates noted above, and will be provided upon request.

Capital - Equipment and implementation costs	Scenario 1	Scenario 2	
One time capital costs	\$ 175,880	\$ 175,880	includes net taxes yrs interest
Amortization Rate	5.00	5.00	
	4.0%	4.0%	
Annualized Cost (Levy Recovery)	\$ 39,150	\$ 39,150	

The above capital costs are based on quotes as provided by Telus and other vendors. Should these costs change, the actual costs will be billed to the agencies.

The advantage of including the capital and related costs in the annual levy is that assuming the contract is renewed, technology refresh costs (assuming similar replacements costs) are included as part of the ongoing levy and additional funding would not be required. However, should replacement/refresh costs be less than the original investment, there would be a corresponding reduction in the annual cost and if the replacement/refresh cost is higher there would be an incremental corresponding increase in the annual cost.

The above costs are incremental and required in order to provide the increased capacity to accommodate North Island 9-1-1 calls at both E-Comm and our Backup facility at BCAS. If additional agencies were to also transition to E-Comm, some of these costs may be reduced due to the sharing of the infrastructure (effective when others requiring the same infrastructure were to join).

**Preliminary Estimate for
9-1-1 Public Safety Answer Point Services
February 20, 2014**

Alternative Option

The agencies (the regional district partners) could choose to pay for the above capital equipment and implementation costs up front, in which case the ongoing annual levy would be reduced as follows:

	Scenario 1	Scenario 2
Annual cost (including capital recovery)	\$ 368,480	\$ 405,830
Less: annualized capital recovery	\$ 39,150	\$ 39,150
Adjusted Annual Cost (1st year)	\$ 329,330	\$ 366,680
Capital - Equipment and implementation costs (1st year only)	\$ 175,880	\$ 175,880

However, in this option, at the end of the contract term, the agencies would have to consider technology life cycle refresh costs and either (1) pay up front again or (2) add to the annual levy

- b) The current E-Comm process for in-queue abandoned 9-1-1 calls is to downstream the call information to the appropriate Police agency of jurisdiction for call-back, follow-up investigation, file creation, and dispatch (if applicable.) However, as we understand, a different process is in use today where the PSAP makes the initial investigative call-back of in-queue abandoned 9-1-1 calls prior to down-streaming to the agency of jurisdiction for file creation (at the S/PSAP) and dispatch (if applicable.) we have included

Scenario 1 excludes initial call determination through abandon call backs.

Scenario 2 includes initial call determination through abandon call backs.

- c) The above estimated rates are based on agency metrics as follows:

- 62,244 inbound 9-1-1 calls per year with an average service level of 95/5

- 5,603 outbound (abandoned) calls per year with an outbound speed to dial of 90/60

(with an AHT of 300 seconds and an outbound speed to dial service level of 90/60 [meaning we would start the outbound call process within 60 seconds 90% of the time])

Should agency metrics increase by 3% or more, the 9-1-1 Call Answer Levy may be subject to increases higher than the preliminary estimated rates for 2014 to 2018 noted above.

- d) Allocation of Net Corporate and Overhead is factored into the levies.

Corporate & overhead refer to direct operations management and support costs, and company wide corporate, staffing and system support costs.

- e) Specific items related to transition that may require funding will be determined during project planning.

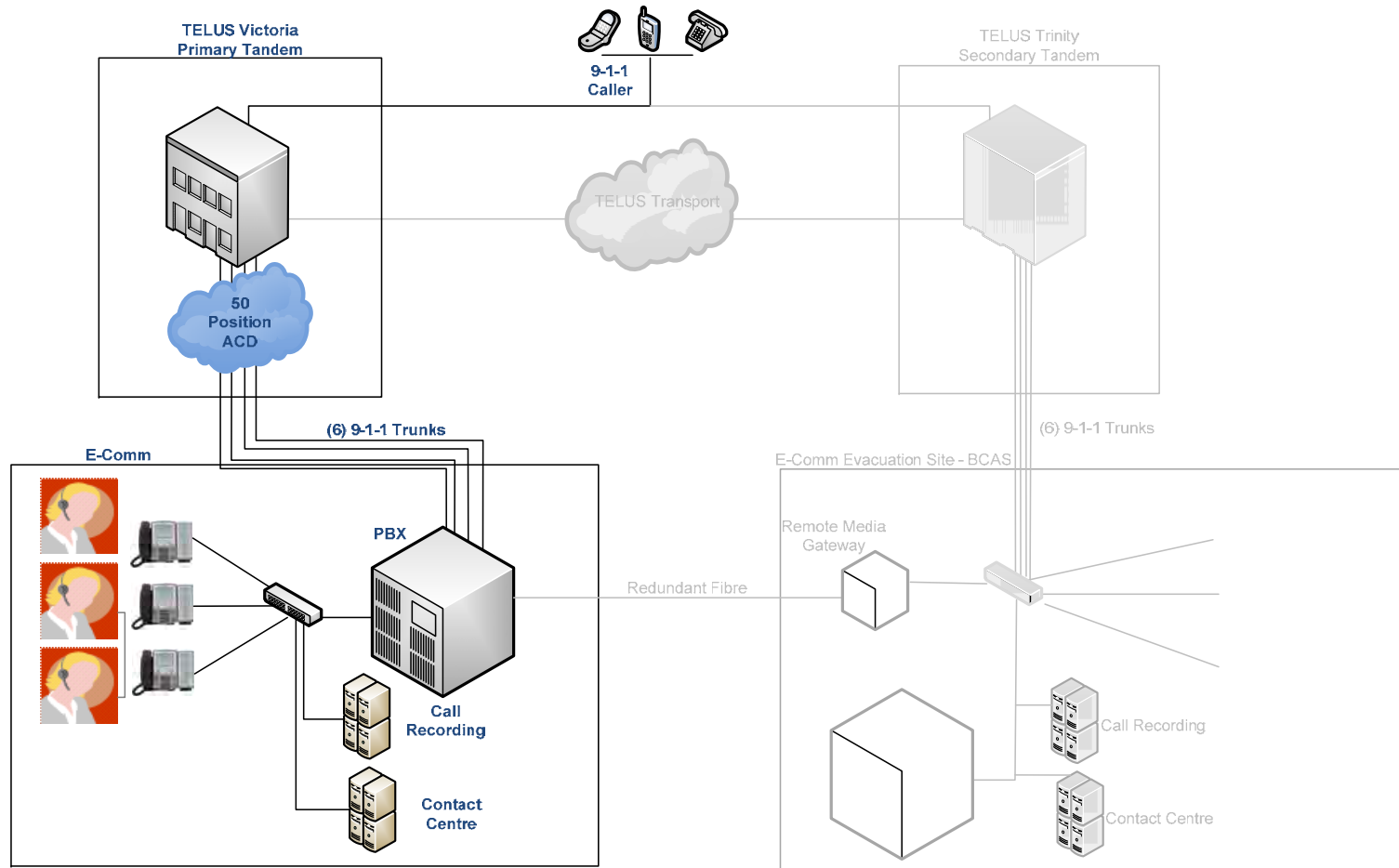
The estimate below relates to one time project management and related costs.

	Scenario 1 & 2
One - Time Project Management (Operating) Costs (1st year only)	21,000

- f) If there are any agreements to provide backup service to other PSAPs, they have not been assessed and therefore are not included in the quotation above.

If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the attached estimate may change accordingly. This quote is valid for 90 days from date of issue.

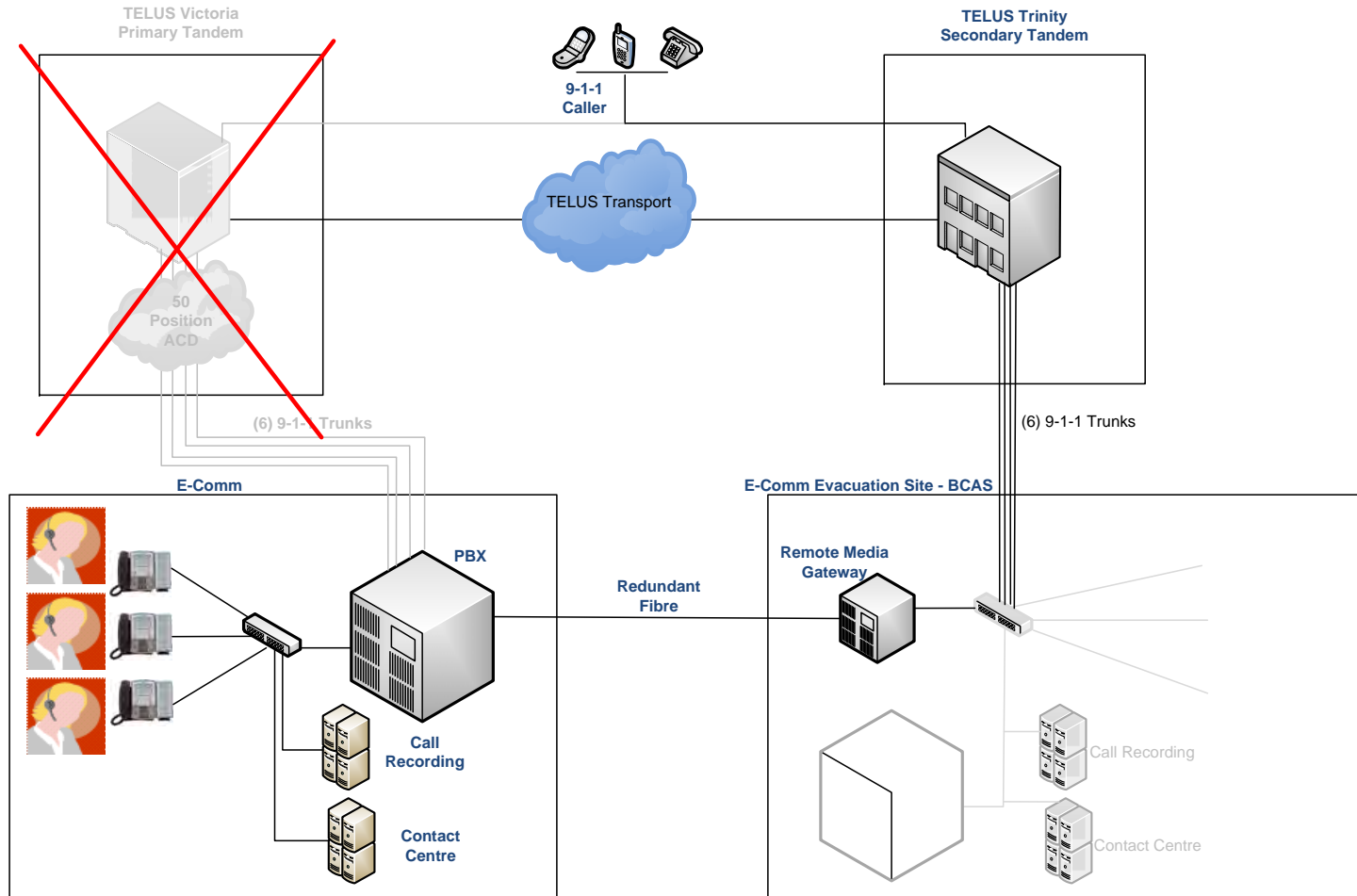
**North Island 9-1-1 Corporation – Proposed E-Comm 9-1-1 Solution
Configuration 1 - “NORMAL 9-1-1 OPERATION”**



North Island 9-1-1 Corporation, “9-1-1 Normal Operation”:

- 9-1-1 calls will continue to route from the North Island communities into the TELUS Tandem switch in Victoria but instead of routing the calls to the RCMP Courtenay dispatch centre as they do today, the calls will be routed to the E-Comm emergency communication centre in Vancouver through the TELUS transport network.

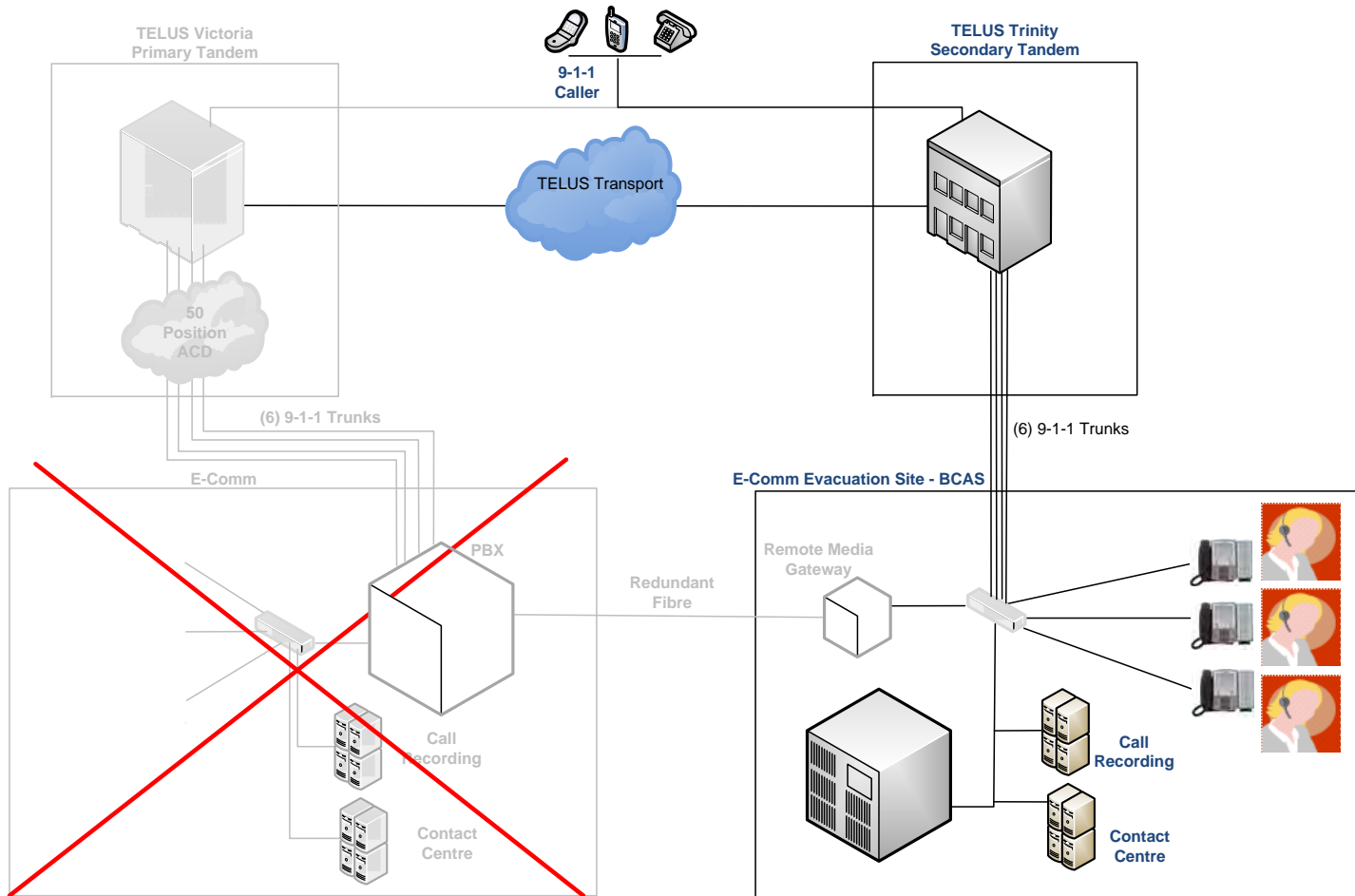
**North Island 9-1-1 Corporation – Proposed E-Comm 9-1-1 Solution
Configuration 2 - “BACKUP 9-1-1 OPERATION”**



North Island 9-1-1 Corporation, “9-1-1 Backup Operation”:

- If there ever was an impairment or failure of the TELUS Tandem Switch in Victoria or the TELUS network facilities connecting the North Island to the E-Comm emergency communication centre in Vancouver resulting in a service interruption to 9-1-1, calls would be routed automatically or manually (by logging out of the ACD Trunks) to a second, independent TELUS Tandem switch located in Vancouver (as is the situation today). The 9-1-1 calls would then be routed automatically from the Victoria Tandem to the E-Comm emergency communication centre through the E-Comm backup centre facility located at BC Ambulance Service in Vancouver on fully diversified TELUS network facilities.

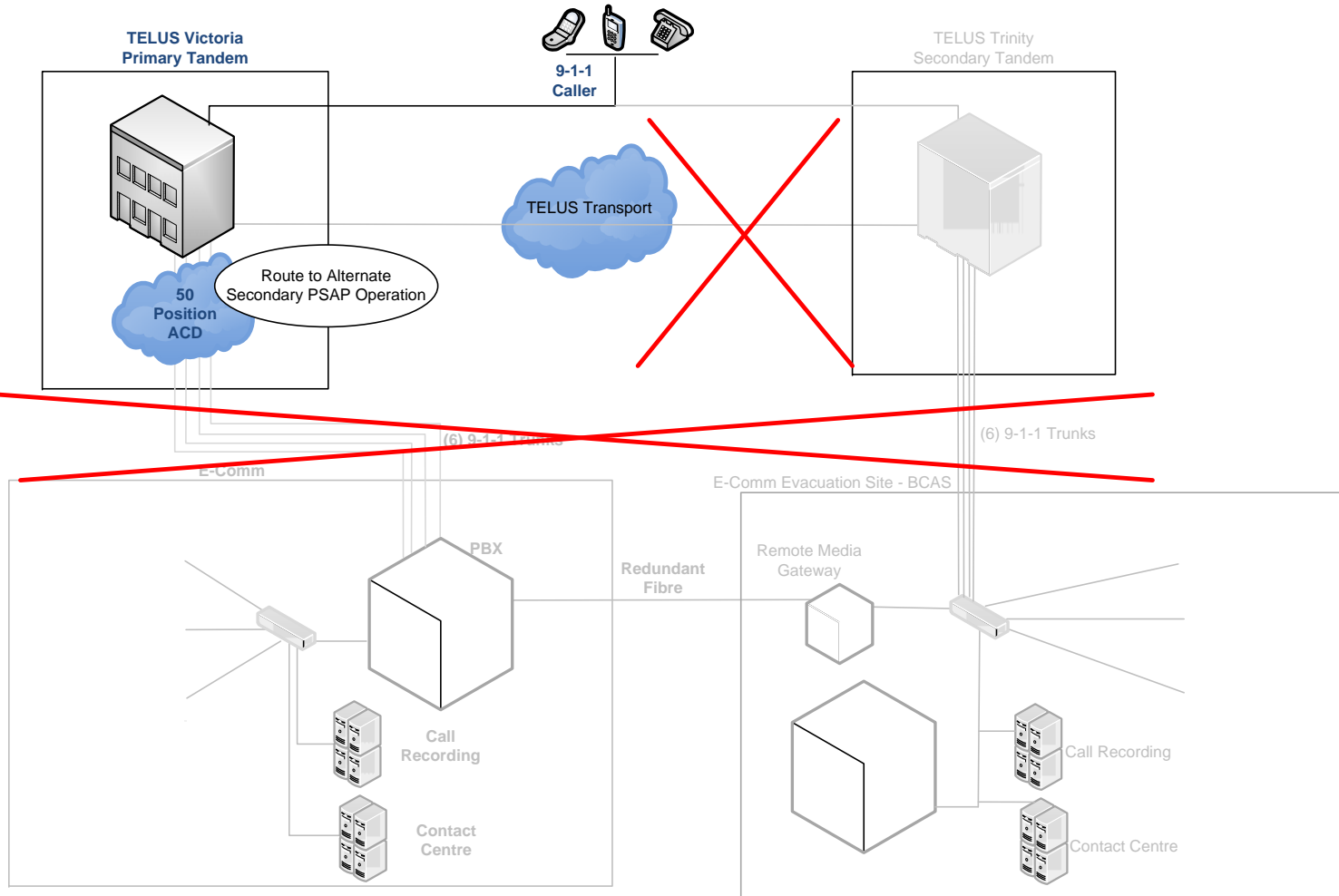
**North Island 9-1-1 Corporation – Proposed E-Comm 9-1-1 Solution
Configuration 3 - “E-COMM EVACUATION 9-1-1 OPERATION”**



North Island 9-1-1 Corporation, “9-1-1 Evacuation Operation”:

- If there ever was an impairment or failure at E-Comm causing a service interruption to 9-1-1, the calls would be rerouted to the E-Comm backup facility located at the BCAS dispatch centre in Vancouver. Arrangements are in place with BCAS to answer and handle the incoming 9-1-1 calls until E-Comm staff can relocate to the BCAS centre which is typically 30 minutes or less. The target to activate the transfer of 9-1-1 calls and arrange for the temporary answer of the calls by BCAS staff is 5 minutes and the target time to relocate E-Comm staff to BCAS is 30 minutes or less.

**North Island 9-1-1 Corporation – Proposed E-Comm 9-1-1 Solution
“ALTERNATE SECONDARY PSAP 9-1-1 OPERATION”**



North Island 9-1-1 Corporation, “9-1-1 Alternate PSAP Operation”:

- The final configuration is a “fail-safe” provision for the very unlikely event that there is a total loss of network connectivity to the Lower Mainland. In this case the 9-1-1 calls would be rerouted to an alternate dispatch centre on Vancouver Island. While arrangements with an alternative dispatch centre have not been finalized, BCAS is one possible choice and they are receptive to performing the 9-1-1 PSAP service from their centre in Victoria.

APPENDIX D – E-Comm Fire Dispatch Services Proposal

March 25, 2014

POMAX Consulting Inc.
468 – 663 Denali Court,
Kelowna, B.C.,
V1V 2R3

File Ref: 9-MOU

Attention: Chris Kellett

RE: NI911 – Sustainable Service Options Analysis – Proposal for Fire Dispatch Services

It is our pleasure to provide Pomax Consulting on behalf of the North Island 9-1-1 Corporation (NI911) with our proposal for E-Comm's consolidated fire call taking and dispatch services supported by our computer aided dispatch system. E-Comm (Emergency Communications for Southwest BC Inc.) is a leading provider of 9-1-1 PSAP, emergency call-taking and dispatch services. Our approach is to customize our service delivery to meet the unique requirements of the NI9-1-1 Corporation and we are committed to work closely with you to achieve this goal.

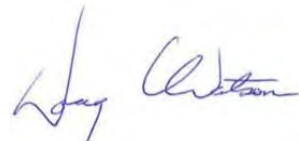
We are confident that our proposal will provide the NI9-1-1 with significant benefits. These benefits include in part the scalability of E-Comm staffing model which will ensure that additional call takers are quickly able to address multiple calls, 100% redundancy of Fire Dispatch capabilities at our Back-up facility, 7/24/365 help desk, sharing the development costs for all common technologies and training materials, a full partner in the Fire Dispatch Committee and the Fire Technology Management Committee providing input and direction on the Fire Services E-Comm provides.

The service delivery details and pricing listed in the proposal will form the basis of a Service Agreement between E-Comm and the NI9-1-1 Corporation should the attached proposal meet with your approval. While the pricing in our proposal does not include the costs for radio connectivity due to the timing of E-Comms Next Generation Radio Project, a high level outline of the implications and cost estimates for this proposal have been provided in Appendix C.

We would be pleased to discuss this proposal and clarify any details with you. As a result of our experience transitioning other Fire Departments, we are confident that a move to E-Comm could be implemented with minimal disruption. Please feel free to contact me with any questions you have regarding any information contained in this proposal or any related items that would assist in your evaluation of considering E-Comm to provide your Fire Dispatch Services.

We trust our Proposal will be of interest to you.

Regards,



Doug Watson, Vice-President of Operations
E-Comm 9-1-1 Emergency Communications for Southwest British Columbia

cc. Debra Oakman –Secretary, NI 9-1-1 Corporation
David Guscott – President & CEO, E-Comm





March 25, 2014

proposal for

- Fire Dispatch Services
(Including Fire CAD Shared Allocation)

Submitted to

North Island 911 Corporation (NI911)

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I. Background

E-Comm is the emergency communications centre for southwest British Columbia. Through a 9-1-1 public safety answering point (PSAP), wide area radio network and dispatch operations, E-Comm provides emergency communication services and support systems to emergency responders and the two-million residents of southwest BC they serve.

E-Comm currently manages almost 900,000 9-1-1 calls each year, over 2,300 calls per day, and provides emergency and non-emergency call-taking and dispatch services for 33 Police and Fire departments and is governed under the *Emergency Communications Corporation Act* (1997).

Our Vision:

Safer communities in British Columbia through excellence in public-safety communication.

Our Mission:

To deliver exceptional emergency communication services that help save lives and protect property, and to advance public-safety partnerships.

Our Values:

Respect, Accountability, Collaboration, Integrity, Service

About our Fire Dispatch Service

E-Comm provides dispatch and call-taking services for 18 fire departments in three regional districts and is one of the largest dispatch centres in Western Canada.

E-Comm currently provides emergency call-taking & dispatch services for a complete range of fire departments totaling more than 90,000 CAD events per year.

The E-Comm advantage:

- Dedicated, experienced fire call-taking and dispatch staff
- 24-hour onsite management and oversight
- Ability to increase staffing resources to manage significant events
- Professional in-house training program followed by programs for mentoring and staff development
- Standard Operating Procedures
- Adherence to NFPA Performance Targets
- Robust dispatch technology
- Facility and operational back-up processes and redundancies
- Bi-annual customer satisfaction survey
- In house voice records and professional standards
- In house quality assurance department
- 24/7 Information Technology Service desk

Current E-Comm Fire dispatch customers:

URBAN	Vancouver Richmond Delta Port Moody New Westminster Fire Departments
COMPOSITE	Squamish & Whistler Fire Departments
RURAL	Gibsons Roberts Creek Sechelt Halfmoon Bay Pender Harbor and Egmont Fire Departments Squamish Lillooet Regional District South – Garibaldi/Black Tusk, Britannia Beach, Furry Creek, Pemberton, Birken, and D’Arcy

In addition E-Comm provides its technology to agencies which choose to maintain a fire dispatch operation under an Application Service Provider (ASP) model.

Current Fire Departments utilizing the E-Comm ASP model for CAD and RMS:

URBAN	Coquitlam ¹ Saanich ² Oak Bay Esquimalt
COMPOSITE	Central Saanich Sidney North Saanich Colwood View Royal

Current Fire Departments with Backup Services at E-Comm:

URBAN	Coquitlam Saanich
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¹ Coquitlam maintains its fire dispatch but uses all E-Comm technologies under the ASP model.

² Saanich, uses the E-Comm ASP model similar to Coquitlam Fire and provides dispatch and E-Comm technologies for North Saanich, Sidney, Central Saanich, Esquimalt and Oak Bay

II. Service Delivery Details

Dispatch Model and Staffing

1. Unique and scalable horizontal fire dispatch model³ that provides for a targeted minimum of four staff at all times. This will increase to a minimum of five staff with the addition of the NI 911 Fire Dispatch function.
2. Ability to quickly reassign additional staff from within the consolidated communication centre in order to manage higher call volumes caused by significant events in any of our client jurisdictions.
3. The fire dispatch model provides increased firefighter safety as dispatchers are solely focused on responding to fire personnel en route to incidents as well those on scene. Dedicated call-takers continue to answer calls as the dispatch function is underway.
4. The fire dispatch model provides greater economies-of-scale as resources are shared. This results in a lower cost-per-call over the long term.
5. We have knowledgeable, professional and dedicated dispatchers with well over 250 years of combined dispatch experience. In addition, we have several staff who are volunteer front line Firefighters with regional departments.
6. Standard Operating Procedures (SOP's) are in place and supported through monitoring, quality assurance, and technical assessments & a charge dispatcher is on duty with each team to monitor quality compliance.
7. All Fire Dispatch Staff are required to obtain VPD Enhanced Reliability Security Status due to the sensitive nature of information they handle.
8. E-Comm staff will be trained in local geography and are able to understand and manage 'local needs' to the satisfaction of clients based on the information and documentation provided by the NI911 Corporation.
9. By virtue of handling multiple agencies Fire Dispatchers at E-Comm are exposed to a higher call volume allowing them to gain experience dealing with a broad range of call types and situations.

³ A horizontal model is one in which call taking and dispatch are separate functions with the goal being to ensure the earliest possible dispatch of fire department units.

10. Under the E-Comm model when radio traffic is busy, police and fire staff working with different agencies can communicate across the floor to relay information even though they are not on the same CAD System.
11. All E-Comm call-taking and dispatch staff are trained formally and consistently by our in-house E-Comm Training Department. All staff must successfully pass rigorous proficiency examinations.
12. Exposure to other first responder agencies leads to a greater understanding of how agencies can help and support each other.
13. E-Comm actively participates in event and exercise planning and coordination with our partner agencies.

Service Level Targets

E-Comm is committed to targeting the NFPA standard 1221⁴ of creating and dispatching all emergency events within the following parameters:

1. 80% of all events in 60 seconds or less
2. 99% of all events in 90 seconds or less

E-Comm provides metrics to support these standards and in the most recent reporting period dispatch within 60 seconds was provided 88% of the time which exceeds (better than) the NFPA 1221 standard.

Training

1. Fire call-takers and dispatchers experience a full range of training and staff development, which includes:
 - Incident Command
 - Hazmat Awareness
 - Orientation Tours including ride-alongs
 - Classroom lectures, guest speakers and exams
 - One-on-one mentoring
 - Benchmark assessments

⁴ June 2012 Edition

2. Ongoing training for dispatchers including:
 - Auto extrication awareness
 - Rescue Guide Refresher training
3. Continuing scenario training including:
 - YVR table top training
 - Translink Exercises
 - Various exercises with partner agencies where E-Comm participation is either required or desired
4. Dispatchers are also trained to provide information support, with the ability to refer to Canada's National Occupational Health and Safety Resource (CCOHS), the Holmatro Rescuers' Guide, and other databases/documents to provide detailed technical information to field personnel.
5. E-Comm training program was developed and is regularly reviewed in conjunction with local municipal fire departments.

Management and Structure

Team managers are available on site 24/7 at E-Comm to provide overall management for the call-takers and dispatchers and to provide a point of contact for client agencies. In addition, each team has an exempt Team Supervisor responsible for the moment to moment supervision of the Ops Floor. Intraday Coordinators are also utilized to perform telephony queue management so as to reduce the impacts of sudden unexpected increases in call volume. Lastly, there is a discipline specific Fire Team Manager responsible for overall performance management of Fire call-takers and dispatchers and for change management within the Fire workgroup. The Fire Team Manager reports to an Operations Manager who provides senior management leadership to the Emergency Communications Centre. The Operations Manager reports to the Vice-President of Operations who provides executive oversight and leadership to the entire Operations Division.

E-Comm has also appointed a Director of Fire Services⁵ to function as a liaison with all fire departments and this individual would work directly with the NI911 Corporation in any technology or dispatch transition.

1. On-duty supervision ensures that staff strive to meet the client agency's needs and that on-site technical and operational expertise is available at all times, minimizing risks associated with emergency response procedures.
2. Professional Fire Management team with experience in:
 - Call-taking and dispatch
 - Quality assurance
 - Training and program development
 - Maximizing work flow process
 - Adherence to International Fire Dispatch Benchmarks (NFPA 1221)
 - Development of public safety protocols
 - Member of NFPA
3. E-Comm has a complete set of Standard Operating Procedures (SOPs) that govern the day-to-day operation of the fire dispatch workgroup. This set of SOPs is comprehensive and seeks to eliminate "one off" scenarios and ensures standard service delivery.
4. E-Comm hosts quarterly Dispatch Partner Committee meetings at which service performance is reported in addition to mutually beneficial SOP adjustments, and overall Fire Dispatch performance.
5. E-Comm hosts a monthly meeting of all CAD and RMS technology users which reviews all current change requests as well as issues related to version updates for CAD and RMS, and help desk tickets. This committee also participates with broader issues related to long-term technology changes and user reviews driven by the participating fire departments.
6. The Fire Technology Management Committee which is comprised of Fire representatives (usually at the Fire Chief or Deputy Chief level) meet quarterly to discuss issues of concern and opportunities for enhancement or improvement. This working group also reviews and confirms strategic matters related to changes to reflect the needs of the participating fire departments and provides members for a finance committee that works with E-Comm to develop and manage budgets for fire specific applications

⁵ Dave Mitchell

Technology

1. E-Comm has developed and implemented the E-Comm Emergency Event Map Viewer or E²MV, an award-winning interface to virtually any Computer-Aided Dispatch (CAD) system that gives the user a complete view of all the emergency events occurring in their jurisdiction. This innovative software was used by the Integrated Security Unit, (ISU) for the 2010 Olympic Games, by the British Columbia Ambulance Service (BCAS), the Vancouver Police Department both during major events such as the Celebration of Lights as well as on a day to day basis and is available to all of our Police and Fire dispatch clients. As the developer of E²MV E-Comm 9-1-1 dispatch staff have been using this new capability with our dispatchers from testing to launching of the final product with positive response to its use and usefulness.

This software is available to our dispatch clients. It is a secured web-based service that does not require any technology at the user's end. For example, the Assistant Chief or Officer-In-Charge (or any authorized user) can log on through a secure connection and view on a map of the NI911 Service Area all active Fire and Ambulance events (approval from BCAS is required to view their data). In addition E2MV has the capability to send secure real time email notifications of events based on location and / or user determined criteria. This would provide senior staff the capability of receiving email notifications for major events such a multiple alarm fires or other events based on specifications provided by the NI911 Corporation. The E-Comm software provides the user a complete picture of where the events are located and a brief description of the event.

2. Dispatch by E-Comm includes a fully hosted and fully managed Intergraph CAD solution which presents the following advantages:
 - Mobile client software that allows for a 'mobile CAD' that includes:
 - Status keeping by function key from the mobile workstation to eliminate the need to make status changes by radio, thus increasing efficiency for first responders and making status keeping more accurate
 - The dispatch system provides map data, including hydrant information that is maintained daily and fully updated quarterly. Pre-plans can be added at any time. In addition to maintaining data for the fire dispatch system, E-Comm provides data and mapping services provincially for the police, including NI911 Corporation and BC

Ambulance. This provides the additional benefit of ensuring that all first responders utilize the same map data, ensuring an increased level of interoperability.

- A complete 'dispatch ticket' with all relevant information related to the property including hazard information, lock box location, standpipe location, etc
- Query capability for all information stored in the RMS; this includes query capability for unrelated properties for pre-plans, property usage, building information, roof construction, etc.

Participation in the Intergraph CAD solution is included with the shared allocation model proposed in the Dispatch Levy outlined in Appendix B.

3. Mobile workstations are supported on a cost per unit basis and once purchased in conjunction with a high speed wireless account can be used with the Intergraph CAD solution.
4. When interfaced to an RMS (if applicable) the ability to transfer relevant property information from the RMS to the dispatch ticket that is posted on the mobile workstation and is the source for the rip & run.
5. High speed rip & run sheets for each responding unit, with information defined by the fire agencies based on their requirements.
6. E-Comm offers an automated Fire Hall Alerting System (Locution) that operates using parallel processing for each fire hall being alerted, to support the objectives of NFPA 1221 for call taking and dispatch times as it provides virtually instantaneous notification. Participation in the Locution Fire hall Alerting System is included on a shared allocation model as proposed in Appendix B.
7. A full interface with BCAS's Intergraph CAD using an Intergraph CADLink interface will offer the opportunity to 'customize' the types of calls that are received by fire agencies. This interface is provided between complementary Intergraph CAD systems. Access to the InterCAD interface is provided as part of the Dispatch Levy with CAD included as outlined in Appendix B.
8. A CAD that is configured as a multi-jurisdictional model, allowing for local requirements to be understood and managed.

Note: that the shared Intergraph CAD is currently used by the following Agencies:

- Vancouver, Richmond, Delta, Port Moody, New Westminster, Squamish, Whistler, Gibsons, Roberts Creek, Sechelt, Halfmoon Bay, Pender Harbor and Egmont Fire Departments, Garibaldi/Black Tusk Britannia Beach, Furry Creek, Pemberton, Birken, and D'Arcy as well as
- Saanich, North Saanich, Central Saanich, Oak Bay, Esquimalt, Sidney, Colwood and View Royal Fire Departments
- Coquitlam

Technology Support

1. E-Comm has IT and wireless support in-house and available on a 24/7 basis.
2. Dedicated Voice Records Department to provide call analysis including radio and telephony information. Voice Records are requested and retrieved through a state of the art web portal. This portal supplies the end user with a package of .wav files to be utilized at the agency's discretion.
3. Voice records has a standard turnaround time of between 5 and 15 business days for non-urgent audio requests (arranged by priority). Urgent or non-standard requests will be billed to the client agency directly at the rate of \$85/hour.

E-Comm Facility

1. Dispatch, call taking and 9-1-1 along with the wide area radio system central switch are housed at E-Comm within a hardened concrete post disaster facility with the ability to withstand an earthquake measuring greater than 7 on the Richter scale.
2. An Uninterrupted Power Supply (UPS) system using multiple, redundant UPS's is in place augmented by dual back up generators that allows for continued operation in the event of a grid-wide or local power failure.
3. Complete air filtration system and food/water supply to support continued operations in the event of an emergency requiring shelter in place.
4. Any first stage alarms at E-Comm are responded to with a full first alarm assignment from Vancouver Fire & Rescue Service.

Dispatch Backup

1. E-Comm has a complete, warm backup centre at BCAS with full functionality for 911, dispatch and radio management in the unlikely event that an evacuation of the building is required.
2. Our target time to have 9-1-1 PSAP service and Police and Fire call taking and dispatch restored on backup capabilities is 5 minutes or less.
3. During transit from the E-Comm building to BCAS, 9-1-1 calls are handled by BCAS operators with call taking and dispatch maintained by E-Comm staff using portable devices to ensure there is an absolute minimum of down time or lack of service if a major event were to occur.
4. The target time to reach full call taking and dispatch capability from the backup site in the event of a need to vacate our primary location is 30 minutes.
5. Evacuation exercises are conducted regularly to ensure proficiency.

Reporting

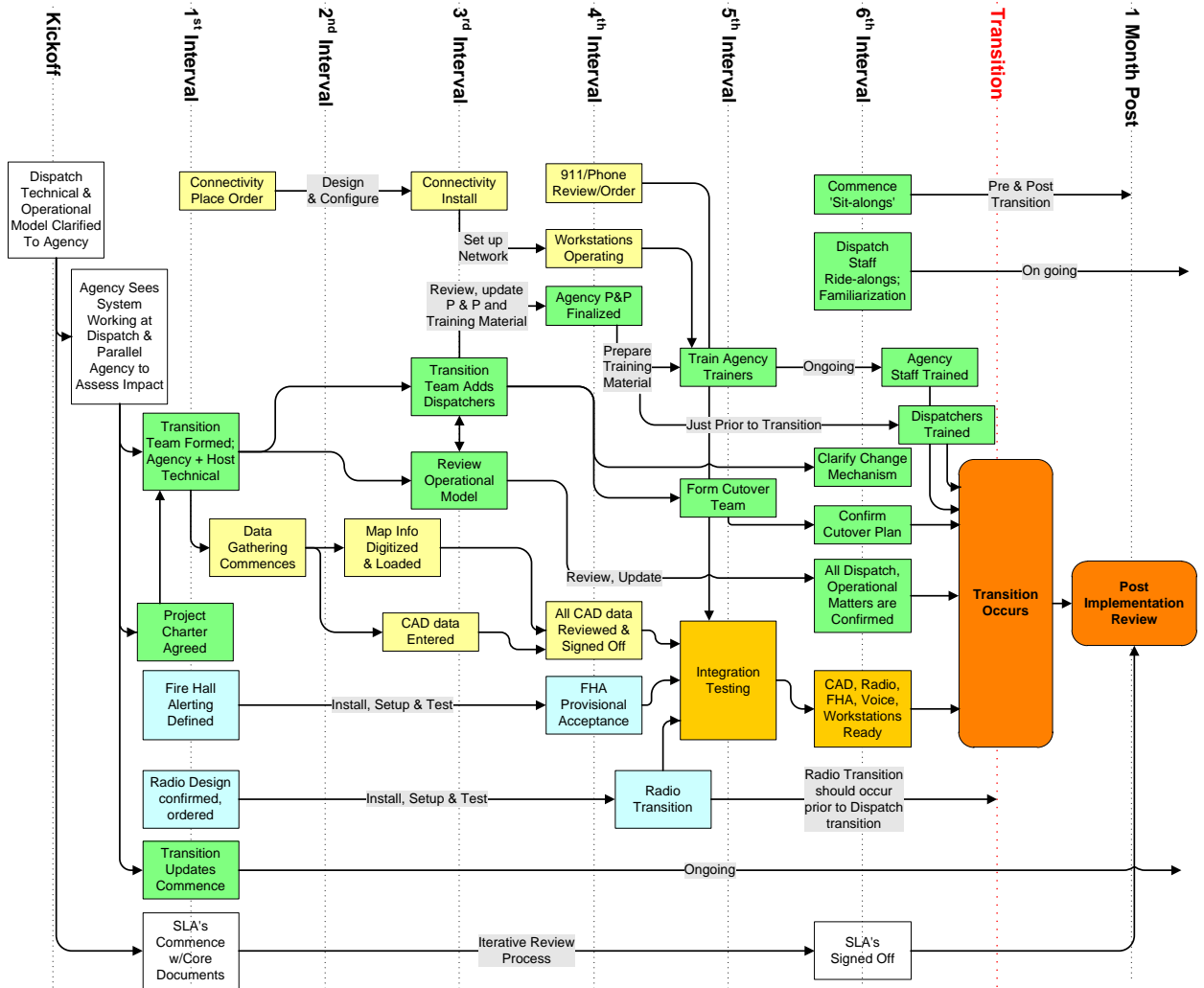
1. As stated, E-Comm understands and uses the NFPA 1221 standards in terms of the delivery of dispatch to its clients as the targets both for 9-1-1 and for fire dispatch.
2. E-Comm regularly reports its progress towards these targets to its clients.
3. E-Comm tracks the call answer downstream times and makes the data available to all downstream agencies.
4. E-Comm can provide, upon request, monthly spectrum reports covering compliance to NFPA Targets across all areas of the “response” process including: Call-Taking, Speed to Dispatch, Turnout, and Travel Time – providing an overall picture of response performance. This can be categorized by Fire/Rescue or Medical or both, and can be divided by unit type.
5. E-Comm has shift by shift measurement and exception reporting of call volume, service levels and extraordinary events.

6. E-Comm also supports Project FIRES FDM RMS which allows for a seamless transfer of CAD event data into the Records Management System.
7. Joining E-Comm's consolidated dispatch model would allow the NI911 Corporation access to Netviewer, a web browser view of the Intergraph CAD system. This contains basic incident reporting tools.

Transition

1. Once agreement to move Dispatch has been reached, the Agency and E-Comm will begin a professionally managed transition project.
2. E-Comm generally suggests three to six months of lead time to properly transition an Agency into our dispatch operation. The model for a transition that would be used for NI911 Corporation is shown in Figure 1.
3. Discussion between E-Comm and the NI911 Corporation is required to establish and finalize the appropriate transition time line and the entire process will be managed with the full participation of the Fire Department.
4. Successful Fire Department dispatch transitions include Vancouver Fire, Richmond Fire, Delta Fire, Port Moody Fire, Squamish Fire, Whistler Fire and New Westminister Fire in addition to many Rural Fire Departments.

Figure 1: Transition Model



Pricing

E-Comm's pricing model for all public safety services is based on a cost recovery model. As a consolidated dispatch centre (the advantages of which have been outlined in the previous pages of this document), and recovering operating costs in a "not for profit" basis, the addition of customers may reduce the net costs to all participants.

Pricing has been established for the NI911 Corporation on the basis of providing Dispatch Services with the support of E-Comm's Intergraph CAD System. The pricing below assumes that PSAP services for NI911 Corporation are being provided by E-Comm. An alternate pricing scenario has been provided in Appendix B if this is not the case. As agreed, the pricing in our proposal below does not include radio connectivity due to our Next Generation Radio Project(NGRP) currently underway. However, Appendix C attached provides an overview of the NGRP as it impacts this proposal including high level estimates of likely console and radio connectivity costs as well as project timing.

For evaluation purposes we have provided the levies for the NI911 Corporation for the 2014 full calendar year summarized by service even though it is understood that the first year of actual service would be 2016. Levies would be pro-rated in the year that the agency joins.

Consolidated Fire Dispatch Pricing (including CAD)

Service Type	Annual Levy	One Time Costs
Dispatch (Scenario 2)	\$460,080	\$122,380 ^{Note 5}
CAD	\$292,980	\$197,940
Total Dispatch (Includes CAD)	\$753,060	\$320,320

Notes:

1. Pricing assumes NI911 Corp PSAP services are provided by E-Comm. For details, refer to Appendix B.
2. The above Levies are based on the metrics and agency requirements for equipment and services as provided which are detailed in the attached Appendix B. Further discussion and validation of metrics may result in lower costs.
3. Please refer to Appendix B if capital recovery is preferred on an annual basis rather than upfront.
4. Levy estimates for 2014 to 2018 for E-Comm Fire Dispatch & Fire CAD along with specific Terms and Conditions are attached in Appendix B.
5. Please refer to Appendix C – Dispatch Radio Interconnection for information, assumptions and cost estimates required but not included above for consoles and radio connectivity.

III. Advantages for the North Island 911 Corporation

Transition by the NI911 Corporation to the E-Comm consolidated dispatch model and Fire CAD include the following operational and cost advantages:

1. Dispatch of NI911 Fire units would meet or exceed the NFPA standard of 60 seconds or less, 80% of the time. Achieving this standard will ensure that NI911 Fire units arrive on scene at the earliest possible time with regard to commencing rescue and fire suppression.
2. The NI911 Corporation will also have the advantage of sharing development costs for all common technologies and training materials thereby reducing agency costs and allowing for the sharing of implementation, training and operational information.
3. The Department will also benefit from the financing model that ensures predictable costs for all aspects of the dispatch and technical systems to be used by the NI911 Corporation.
4. Call taking and dispatch for all fire incidents reported in the NI911 Corporation's service area will benefit from the scalability of E-Comm's staffing model which will ensure that additional call takers are quickly able to address multiple calls. This will also ensure that a dispatcher will be able to focus directly on active fire emergencies.
5. The NI911 Corporation will gain the benefit of the 100% redundancy of the E-Comm Dispatch backup solution which allows for seamless call taking and dispatch during any transition to the fully operable backup centre. This ensures a very high level of disaster recovery for the NI911 Corporation.
6. Members of the NI911 Corporation will have the access to the 7/24/365 help desk for all technical issues that arise.
7. The NI911 Corporation will be a full partner in the Fire Technology Management Committee which is comprised of the senior leadership of the participating fire departments which advises E-Comm on all technical and other priorities for CAD, the RMS, fire hall alerting, mobile applications, etc.
8. The NI911 Corporation will also be a partner and full participant in the monthly CAD and RMS technical user committee which manages all issues related to change requests, and upgrades of

the existing technologies as well as providing advice on the future direction.

9. All upgrades for CAD, the RMS, fire hall alerting, mobile workstations etc., will be managed for the NI911 Corporation by E-Comm by technical resources which are experts in such matters with the ongoing advice of the participating fire departments.
10. By participating with the standard E-Comm technologies the NI911 Corporation will benefit from participating with the fire departments for 33% of the population of British Columbia all of whom use these technologies and report similar benchmarks.

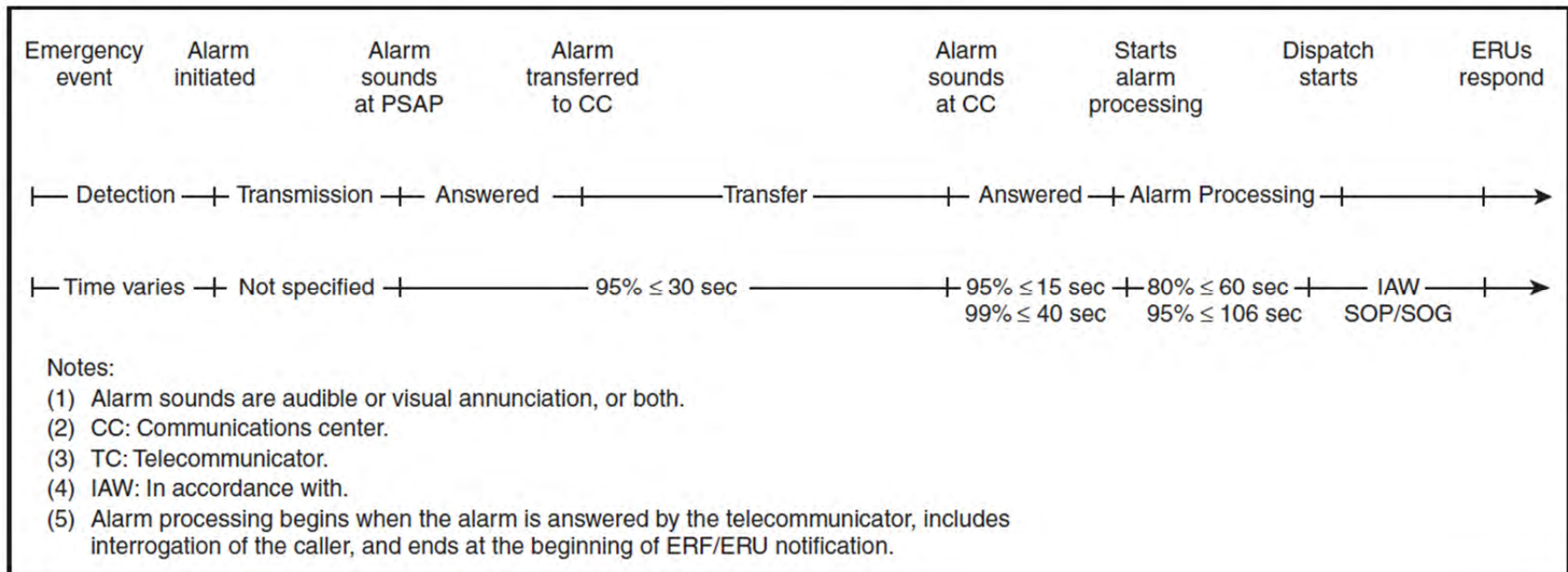
IV. Appendices

Appendix A
National Fire Protection Association (NFPA) 1221 Standards

Appendix B
2014-2018 Levy Estimates (Dispatch & Fire CAD Shared Allocation)

Appendix C
Dispatch Radio Interconnection

Appendix A: NFPA 1221 Standards



**North Island 9-1-1 Corporation
2014 E-Comm Levy Estimates
March 19, 2014**

Table of Contents

	Pages
Consolidated Summary	B-1
Dispatch Levy	B-2 to B-3
Fire CAD Levy	B-4 to B-6

Notes:

- *While it is understood that an in-service date would be in 2016, our levy estimates are based on the 2014 Budget rates as approved by the E-Comm Board of Directors.*
- *2015-2018 Estimates expected to increase by 3.0% annually for Fire Dispatch and 4.0% annually for Fire CAD.*
- *9-1-1 PSAP call answer costs are EXCLUDED from the levies above.*
- ***If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the above estimates may change accordingly. This quote is valid for 90 days from date of issue.***

North Island 9-1-1 Corporation
2014 Preliminary Levy Estimates
Consolidated Summary
Fire Dispatch and Fire CAD
March 19, 2014

Year	Scenario 1	Scenario 2	Scenario 1 and 2					Scenario 1		Scenario 2	
	9-1-1 PSAP is NOT at E-Comm	9-1-1 PSAP is at E-Comm	FireCAD					9-1-1 PSAP is NOT at E-Comm	9-1-1 PSAP is at E-Comm	9-1-1 PSAP is at E-Comm	
	Dispatch ¹	Dispatch ¹	Shared*	User Eq Agency Specific	Remote Agency & Other	FireCAD ² Total	One Time Impl'n ³	Grand Total Annual	One Time Impl'n ³	Grand Total Annual	One Time Impl'n ³
	Ongoing	Ongoing				Ongoing	CAD	Ongoing	CAD	Ongoing	CAD
2014 Levy Estimates	533,390	487,330	254,890	3,210	34,880	292,980	197,740	826,370	197,740	780,310	197,740
2015 Levy Estimates	549,400	501,900	265,080	3,340	35,600	304,020		853,420		805,920	
2016 Levy Estimates	565,900	517,000	275,680	3,470	36,350	315,500		881,400		832,500	
2017 Levy Estimates	582,900	532,500	286,710	3,610	37,130	327,450		910,350		859,950	
2018 Levy Estimates	600,400	548,500	298,170	3,750	37,940	339,860		940,260		888,360	

Notes:

While it is understood that an in-service date would be in 2016, our levy estimates are based on the 2014 Budget rates as approved by the E-Comm Board of Directors.

2015-2018 Estimates expected to increase by 3.0% annually for Fire Dispatch and 4.0% annually for Fire CAD.

9-1-1 PSAP call answer costs are EXCLUDED from the levies above.

¹ Dispatch levies as detailed on pages B2-B3 of Appendix B.

² CAD levies as detailed on pages B4-B6 of Appendix B.

CAD levies based on E-Comm providing dispatch services only.

CAD levies include shared costs only - all user equipment (mobiles, tablets, etc and related licensing) are excluded as assumed that the agency is procuring directly. Should the agency wish, mobiles can be added to the agency specific portion of the levy.

³ One Time Implementation Charges refer to the agency direct costs associated with implementation and are not part of the ongoing levy.

Specific items related to the dispatch transition that may require funding will be determined during detail project planning.

The above levies do NOT include radio interfaces, consoles or any other radio related impacts.

For additional details, please refer to detail levy sheets and accompanying notes.

If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the above estimates may change accordingly. This quote is valid for 90 days from date of issue.

Fire Dispatch Levy (excludes 9-1-1 PSAP Levy)
North Island 9-1-1 Corp
March 19, 2014

	Scenario 1 9-1-1 PSAP is NOT at E-Comm	Scenario 2 9-1-1 PSAP is at E- Comm
	Annual Amount	Annual Amount
2014 Levy Estimates (Annual Ongoing)	\$ 533,390	\$ 487,330
% Increase		
2015 Levy Estimates	3.00% \$ 549,400	\$ 501,900
2016 Levy Estimates	3.00% \$ 565,900	\$ 517,000
2017 Levy Estimates	3.00% \$ 582,900	\$ 532,500
2018 Levy Estimates	3.00% \$ 600,400	\$ 548,500

Notes:

- a) While it is understood that an in-service date would be in 2016, our levy estimates are based on the 2014 Budget rates as approved by the E-Comm Board of Directors. 2015-2018 Estimates expected to increase by 3.0% annually. 9-1-1 PSAP call answer costs are EXCLUDED from the levies above.

The above levies assumes a minimum 5 year contract term in order to account for capital recovery. A shorter contract term would result in an increase to the annual estimates noted above, and will be provided upon request.

	Scenario 1 9-1-1 PSAP is NOT at E-Comm	Scenario 2 9-1-1 PSAP is at E- Comm
	Total	Total
Capital - Equipment and implementation costs		
One time capital costs	\$ 152,340	\$ 122,380
Amortization Rate	5.00	5.00
	4.0%	4.0%
Annualized Cost (Levy Recovery)	\$ 33,910	\$ 27,250

includes net taxes
yrs
interest

The above capital costs are based on quotes as provided by Telus and other vendors. Should these costs change, the actual costs will be billed to the agencies.

The advantage of including the capital and related costs in the annual levy is that assuming the contract is renewed, technology refresh costs (assuming similar replacements costs) are included as part of the ongoing levy and additional funding would not be required.

However, should replacement/refresh costs be less than the original investment, there would be a corresponding reduction in the annual cost and if the replacement/refresh cost is higher there would be an incremental corresponding increase in the annual cost.

The above costs are incremental and required in order to provide the increased capacity to accommodate North Island calls at both E-Comm and our Backup facility at BCAS. If additional agencies were to also transition to E-Comm, some of these costs may be reduced due to the sharing of the infrastructure (effective when others requiring the same infrastructure were to join).

Fire Dispatch Levy (excludes 9-1-1 PSAP Levy)
North Island 9-1-1 Corp
March 19, 2014

Notes (continued):

Alternative Option

The agencies (the regional district partners) could choose to pay for the above capital equipment and implementation costs up front, in which case the ongoing annual levy would be reduced as follows:

	Scenario 1	Scenario 2
	9-1-1 PSAP is NOT at E-Comm	9-1-1 PSAP is at E-Comm
	Total	Total
Annual cost (including capital recovery)	\$ 533,390	\$ 487,330
Less: annualized capital recovery	\$ 33,910	\$ 27,250
Adjusted Annual Cost (1st year)	\$ 499,480	\$ 460,080
Capital - Equipment and implementation costs (1st year only)	\$ 152,340	\$ 122,380

However, in this option, at the end of the contract term, the agencies would have to consider technology life cycle refresh costs and either (1) pay up front again or (2) add to the annual levy

- b) Allocation of Net Corporate and Overhead is factored into the levies.
 Corporate & overhead refer to direct operations management and support costs, and company wide corporate, staffing and system support costs.
- c) Specific items related to transition that may require funding will be determined during detail project planning.
 The above levies do NOT include radio interfaces, consoles or any other radio related impacts.
- e) If there are any agreements to provide backup service to other PSAPs/Fire Agencies, they have not been assessed and therefore are not included in the quotation above.
- f) The above estimated 5 year rates are based on agency metrics provided by North Island 9-1-1 Corporation including:
 - 1) Taking into account the efficiency of joining a consolidated Fire Dispatch model.
 - 2) Taking into account the more intense time-in-motion labour involved in dispatching volunteer/composite agencies via paging
 Dispatchers processing 9,595 CAD events (2013 total).
 "Processing" means both:
 - i) Dispatching Fire/Rescue Events AND;
 - ii) Concluding non-dispatchable First Responder Events
 - 4) Further evaluation of the potential positive impact of the direct Intercad (E-Comm/BCAS interface) is still required to determine if additional savings are possible.

Assuming the metrics changes do not exceed 3%, the dispatch levy will increase in conjunction with the impact of increased operating efficiencies balanced with labour collective agreement rate changes and inflation.

If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the attached estimate may change accordingly. This quote is valid for 90 days from date of issue.

2014 Estimated Fire CAD Levy
North Island 9-1-1 Corp
March 19, 2014

	Weighted Share of Total	Shared Costs			User Equipment		Agency	Remote Agency and Other Specific Costs			Grand Total Levy	One Time Impl'n
		Shared Capital Annualized	Annual Operating	Total Shared Costs	User Equip Capital Annualized	User Equip Annual Operating	Total User Equip Costs	Agency Capital Annualized	Annual Operating	Total Remote Agency		
Intergraph Fire CAD Dispatch by E-Comm 2014 Preliminary Levy Estimates	19.36%	48,310	206,580	254,890	-	3,210	3,210	16,900	17,980	34,880	292,980	197,740
2015 Preliminary Levy Estimates		50,240	214,840	265,080	-	3,340	3,340	16,900	18,700	35,600	304,020	
2016 Preliminary Levy Estimates		52,250	223,430	275,680	-	3,470	3,470	16,900	19,450	36,350	315,500	
2017 Preliminary Levy Estimates		54,340	232,370	286,710	-	3,610	3,610	16,900	20,230	37,130	327,450	
2018 Preliminary Levy Estimates		56,510	241,660	298,170	-	3,750	3,750	16,900	21,040	37,940	339,860	

Notes:

- a) While it is understood that an in-service date would be in 2016, our levy estimates are based on the 2014 Budget rates as approved by the Fire Technology Management Committee (FireCAD) and the E-Comm Board of Directors. 2015-2018 Estimates expected to increase by 4.0% annually. Should additional agencies join the E-Comm CAD, then the above would be adjusted (favourably) accordingly. Excludes user equipment capital levy as assumes no additional purchases through E-Comm. Should additional equipment be required, this levy would increase accordingly.
- b) Shared capital costs include:
 - Server & hardware
 - Startup
 - Software and licenses
 The cost of 55 Netviewer licenses for the use of North Island 9-1-1 Corporation at a total cost of \$112,400 pre-tax is also included in shared capital (software) costs; the number of licenses is an estimate only and should the number change the levy would be adjusted accordingly.
- c) Shared Annual operating costs include:
 - Annual support and maintenance from Intergraph & vendors for server/hardware
 - E-Comm support staffing (CAD, Tech Support & GIS)
 - E-Comm corporate and overhead allocation
- d) Based on annual events of 8,448 and 68 firehalls; 3 career and 65 volunteer firehalls (30% weighting factor for volunteer firehalls). Rates subject to change annually based on the number of annual events (updated on an annual basis) and number of firehalls.
- e) 40 licenses for the MPS software @ \$1,870 each for a total of \$74,800 pre-tax levied over 5 years, including financing charges; plus annual ongoing related maintenance estimated at \$16,800 pre-tax. Assumes minimum contract term of 5 years; should the agency contract term be less then the amortization period would decrease accordingly, resulting in an increase to the annual levy. The amortization period may not exceed 5 years.
- f) One-time project (labour) implementation and agency specific costs (see attached for details)
- g) All user equipment is excluded as assumes that the agency is not procuring through E-Comm. Excludes mobile workstations hardware and related software licensing (except includes SQL CAL & NetMotion licensing). Should the agency wish, mobiles can be added to the agency specific portion of the levy if purchased through E-Comm. Excludes locution and AVL monitoring for vehicles without mobiles workstation. User equipment capital levy assumes no additional purchases. Should additional equipment be required, this levy would increase accordingly. Includes user equipment operating and maintenance levy for ongoing maintenance costs for SQL, CAL and NetMotion licensing only.
- h) Excludes mobile tablets and/or any related costs.
- i) **Excluded costs are as follows:**
 - Mobile workstations
 - Hardware/software for centralized print server
 - Interfacing to NI911 agencies existing FDM Records Management Systems
 - Locution firehall alerting is presently not available outside of Metro Vancouver
 - Hosted RMS (E-Comm Project FIRES)
- j) For additional notes, please refer to the attached.

If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the attached estimate may change accordingly. This quote is valid for 90 days from date of issue

Fire CAD Levy Estimates Summary
One-Time Agency Specific Costs
North Island 9-1-1 Corp
March 19, 2014

One Time Agency Specific Costs

Description	Qty	Total Cost
		<i>includes net taxes</i>
One Time Implementation Costs (Operating)		
Computer & Related Costs		
Servers		-
Network hardware		-
VPN Tokens	25	6,690
Software (SQL CAL & NetMotion licenses)	40	16,050
Computer Hardware Costs		22,740
E-Comm Project Implementation Costs (note (g) below)		
Project Consulting	hours 2,500	175,000
E-Comm Project Implementation Costs		175,000
Total Agency Specific One Time Implementation Costs		197,740

Assumptions and Notes:

General Assumptions:

1. No customizations on i/Dispatcher or i/Mobile beyond what E-Comm gets
2. All server software is at E-Comm
3. The CAD communication interface server is in Vancouver/E-Comm RMS interface Server at agency, where applicable.
4. Connectivity will be provided to E-Comm's Fire RMS Only. Connections to other RMS systems is excluded.
5. Fire Station Printing assume network connectivity from Vancouver E-COMM to a single location at the agency.
6. The agency will provide the servers/equipment/licensing required for Fire Station Printing. Services estimates assume Agency joining E-Comm project in 2014
7. Assuming BCAS CAD TO CAD link at E-COMM
8. Project management consulting is included and provided separately in the agency one time costs
9. E-Comm GIS staff time for data and map development is included in the shared IT costs for ongoing maintenance only.
10. Locution not factored in for servers or CALs or any other costs.

Connectivity Assumptions:

11. Connection to the Firehalls is over the internet via VPN token. Other options can be explored, but are excluded from this quote.

General Notes:

- (a) Includes estimates for net PST as applicable.
Actual net PST will be charged upon final reconciliation of costs.
- (b) Interest calculated semi-annually based on E-Comm's financing arrangements with the MFA
- (c) Costs, including Intergraph, are based on quote estimates provided.
Levy is adjusted to actual costs incurred as part of the year end adjustment in the year the agency transitions.
- (d) Connectivity costs (one-time and ongoing) are excluded from this quote as to be determined in conjunction with the agency. These costs are agency specific.
- (e) **Included costs are as follows:**
-licensing, software maintenance and support of components for the exclusive use of the agency
(40 I/Mobile / MPS licenses are included under "other agency costs" and
55 NetViewer Licenses are included under "shared costs")
- (f) **Excluded costs are as follows:**
- Mobile workstations
- Hardware/software for centralized print server
- Interfacing to 911 agencies existing FDM Records Management Systems
- Locution firehall alerting is presently not available outside of Metro Vancouver
- Hosted RMS (E-Comm Project FIRES)
- (g) Initial acquisition of VPN tokens is included above; these need to be renewed every 4-5 years. Renewal costs are excluded.
- (h) Initial agency specific software is included above. Ongoing annual maintenance of approximately 20% is included in the "User Equipment Operating and Maintenance Levy".

Notes continued on next page.

Fire CAD Levy Estimates Summary
One-Time Agency Specific Costs
North Island 9-1-1 Corp
March 18, 2014

Assumptions and Notes (continued):

- (i) **E-Comm project implementation costs are detailed below:**
 Includes setup, training assistance (i.e. I/Dispatcher), testing, application documentation, and technical project coordination.

Task	Hours Required	Deliverables	Notes
GIS Data Load	800	Updated .map file, ply files, str, rte, Updated BCAS boundary delivery	
Special Address Data Load	150	Updated sp_ad, co_pl tables	
Agency Data Load	1,330	Current State / Future State, See agency data spreadsheet	Standardized data to E-Comm standards
Connectivity	200	Firehall and Mobile Workstation connectivity.	
CAD to CAD (InterCAD)	20	Add NI911 to E-Comm / BCAS CAD to CAD connection.	
Total	2,500		

If any of the above facts and assumptions are incorrect or incomplete, please advise as soon as possible as the attached estimate may change accordingly. This quote is valid for 90 days from date of issue

APPENDIX C - Dispatch Radio Interconnection

E-Comm's Radio Dispatch System

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The current radio dispatch infrastructure used by E-Comm is currently undergoing a lifecycle replacement. This is known as E-Comm's Next Generation Radio Program (NGRP). The NGRP will result in all radio dispatch consoles and the supporting switching backbone at E-Comm transitioning to a Radio over Internet Protocol (RoIP) architecture in the mid-2016 timeframe.

E-Comm's current radio console system does not have sufficient port capacity to add an estimated 30 analog VHF radio channels as would be required to interconnect the existing NI-911-dispatched fire departments and their radio and paging channels.

Therefore, completion of this upgrade is a prerequisite to E-Comm being able to provide fire dispatch services to NI-911. In addition, the completion of the upgrading of the NI-911 fire dispatch radio sites to support RoIP connectivity is also a prerequisite. E-Comm understands that this upgrade process is already underway and will likely be complete by 2016 (see note b below).

As E-Comm has not yet selected the technology vendor for the NGRP system, it cannot provide a definitive cost proposal for the interconnection of the NI-911 radio system. However, a "rough-order-of-magnitude" estimate of costs is provided below.

One-Time Equipment, Licensing and Installation Costs (dispatch centre) – Order-of-Magnitude				
<u>Item</u>	<u>Quantity</u>	<u>Cost Per</u>	<u>Total Cost</u>	<u>Note</u>
IP Dispatch Console	0.75 (allocation)	\$80,000	\$60,000	a
Radio Site License	30 (estimated)	\$3,000	\$90,000	b
Dispatch Equipment	0.75 (allocation)	\$40,000	\$30,000	c
Engineering and Installation	500 hours	\$80	\$40,000	d
TOTAL			\$220,000	e
Ongoing Annual Operating Costs (dispatch centre) – Order of Magnitude				
<u>Item</u>	<u>Quantity</u>	<u>Cost Per</u>	<u>Total Cost</u>	<u>Note</u>
Software License Maintenance	20%	\$150,000	\$30,000	f
Equipment Maintenance/Support	1	\$15,000	\$15,000	g
TOTAL			\$45,000	

APPENDIX C - Dispatch Radio Interconnection

Notes Regarding Cost Estimates

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- a) It is assumed that with the consolidated dispatch model in place, E-Comm will require the equivalent of 0.75 of a dedicated radio console on average to accommodate the NI-911 dispatch operations. Estimated costs for dispatch consoles include the hardware (workstation, keyboard, microphone, audio enclosure, etc.) but not mounting hardware or furniture.
- b) Each remote radio site that is presented at the dispatch console as an independent conventional channel will be subject to an estimated one-time software license fee of approximately \$3,000. This applies to each VHF base/control station and repeater directly interfaced using RoIP. Costs for upgrading the NI-911 radio infrastructure to support RoIP interconnection, including the supply and installation of RoIP adapters and Internet connection costs at base station and/or repeater sites are not included. It must also be noted that E-Comm cannot guarantee compatibility of NI-911's existing RoIP adapter equipment with our NGRP console equipment so it is possible that replacement of existing adapters may be required (an estimated cost of \$2,500 per site/channel can be used).
- c) Dispatch Equipment includes miscellaneous equipment required to support one radio dispatch console, including furniture and related hardware (primary and evacuation site), voice logger interface costs and an allocated cost for internal network connectivity.
- d) Estimated costs are for engineering and installation at the dispatch centre to support interconnection to a 30 remote VHF dispatch channels via RoIP. This includes configuration of the IP radio switch, development and implementation of console configuration templates and design and implementation of wide area IP network configuration to enable VPN connections over the Internet for radio channels/sites.
- e) E-Comm can recover the one-time costs over multiple years, with a reasonable interest rate, if required, up to and including the full length of the contract.
- f) Software License Maintenance is estimated at 20% (per year) of the one-time purchase cost for the corresponding software licenses (IP console and radio site licenses).
- g) Equipment maintenance cost estimate covers allocated dispatch console hardware and general support for the NI-911 configuration in the radio switch. Support will be provided via the E-Comm Service Desk.

APPENDIX C - Dispatch Radio Interconnection

APPENDIX C - pg.3

h) AS E-COMM HAS NOT YET SELECTED THE SPECIFIC EQUIPMENT FOR ITS NEXT GENERATION DISPATCH INFRASTRUCTURE, THESE COSTS ARE SUBJECT TO CHANGE AND WILL NEED TO BE REASSESSED AND FINALIZED ONCE EQUIPMENT SELECTION HAS BEEN MADE.

Timeline

An illustrative high-level timeline for the lead-up activities to enable readiness of E-Comm's infrastructure to support the interconnection of NI-911 fire dispatch radio infrastructure is provided below:

- 1Q 2015 – E-Comm executes contract for next generation radio core equipment and consoles (RoIP technology at the dispatch end is defined so further technical planning for interfacing to rural fire radio systems can begin)
- 1Q 2015 – 2Q 2015 – E-Comm and NI-911 staff develop initial plan, costs and schedules for upgrades to fire radio network infrastructure to enable relocation of dispatch; this would include an assessment of which locations and methods are optimal for interfacing between E-Comm's next-generation infrastructure and that of the NI-911 based on cost, reliability and operational performance (time to dispatch, staffing efficiency, etc.)
- 3Q 2015 - Commitment to migration of dispatch made by NI-911; contract execution; detailed design and implementation commences
- 3Q 2015 – 2Q 2016 – Radio network interface design, implementation and testing across all RD's

APPENDIX E – Detailed Staffing and Building Costs for Stand-Alone Centre

Costs for Recommended Staffing Model for Stand-Alone 9-1-1 Call Answer and Fire Dispatch Centre			
Position	No. of Full Time Equivalents	Annual Rate (includes benefits)	Five Year Extension
Call Taker/ Fire Dispatchers	12	\$958,068	\$4,985,815
Shift Supervisors	2	\$175,646	\$914,066
Centre Manager	1	\$125,000	\$650,505
Totals		\$1,258,714	\$6,550,386

Staffing Model Notes

1. Annual rates have been calculated on an average rate for at non-International Association of Fire Fighters fire dispatch centres in British Columbia.
2. Five year extensions of staffing costs include an assumed annual rate increase of 2% per year.
3. The total number of 12 FTEs consists of eight (8) regularly scheduled 9-1-1 call takers/fire dispatchers plus four (4) irregularly scheduled 9-1-1 call takers/fire dispatcher that are to be scheduled to cover holidays, sick leave, staff off for training, peak workloads, etc.
4. The Manager of System Technology has not been included in this staffing model as this is an existing North Island 9-1-1 employee.

Details and Costs for Estimated New Building Construction		
Description of Spatial Allocations		
Spatial Requirement	Estimated Area	
	Square Feet	Square Metres
Secure entrance	75	6.75
Reception and administration area	110	9.9
Washroom/locker room – female	200	18
Washroom/locker room – male	200	18
Equipment room	175	15.75
Storage area	200	18
Manager’s office	150	13.5
Dispatch room (communications centre)	600	54
Breakout room/eating area	150	13.5
Spatial Requirements Subtotal	1860	167.4
Corridors, etc. at 10%	372	334.8
Spatial Requirements Total	2232	502.2

Details and Costs for Estimated New Building Construction		
Construction and Implementation Costs		
Item Description	Cost	Extended Cost
Construction of new 2,232 ft ² (502.2m ²) purpose built stand-alone 9-1-1 call answer and fire dispatch centre	\$400/sq. ft. ¹ (\$36/m ²)	\$820,800
Implementation and transition costs ²	estimate	\$125,000
Building Construction Total		\$945,800

Building Construction Notes

1. Unit rate of \$400 per square foot includes costs for land acquisition, building construction costs, and site finishing.
2. These are the costs associated with specific hardware and technology required (e.g. TELUS, etc.) as well as the cost to transition the existing fire dispatch service from Campbell River Fire Department to the new centre. System transitioning requires duplicate fire dispatch systems to be in place to ensure continuity of service.