
Subject: Consolidation of Niagara's Emergency 911 Communication Services

Report to: Committee of the Whole

Report date: Thursday, July 8, 2021

Recommendations

1. That staff **BE DIRECTED** to proceed with a fulsome investigation into a consolidated dispatch model to include but not limited to:
 - Detailed capital budget necessary for the procurement of all assets for the complete delivery of a regional fire communications service;
 - Detailed operational budget necessary for the delivery of a regional fire communications service;
 - Detailed budget analysis on impacts, positive or negative, to the existing budgets for the 911 Public Safety Answering Point (PSAP), Niagara Regional Police Service (NRPS) and Niagara Emergency Medical Services (NEMS);
 - Governance structure to best provide effective and efficient delivery of consolidated 911 communications services;
 - Future facility review for the development of a Public Safety Communications Service primary dispatch centre for all agencies;
 - A recommendation to Council for decision on whether and how to advance the consolidation of emergency dispatch services to be operational no later than March 31, 2024 and that the aforementioned report is completed by the end of Q4 2021.
2. That staff **BE DIRECTED** to request the City of St. Catharines that should a decision to consolidate dispatch be approved by the end of 2021, that they will enter into agreements to continue to provide dispatch services to their respective Niagara jurisdictions and contract customers until such time that the consolidated dispatch is made operational, no later than March 31, 2024.

Key Facts

- The development of a consolidated emergency 911 communications service is a matter of public safety for our communities and emergency responders
- Consolidation is defined as the integration of dispatch technology, physical co-location and enhanced interoperability

- A time-limited window of opportunity exists to move to a consolidated dispatch model for Niagara
- Emergency services dispatch (police, fire, EMS) for Niagara currently involves five different agencies
- Niagara Regional Police and Niagara EMS are self-dispatched
- Of the twelve Niagara Municipal Fire Services, two are self-dispatched (St. Catharines and Niagara Falls) and the remaining ten municipalities are dispatched through contracted third-party services
- St. Catharines Fire Department (SCFD) is the primary contracted service provider for nine Niagara Region municipalities that include Grimsby, Lincoln, Niagara on the Lake, Pelham, Port Colborne, Thorold, Wainfleet, Welland and West Lincoln as well as two non-Niagara municipalities Norfolk County and Haldimand County
- Fort Erie Fire Department receives its dispatch services under contract with Tillsonburg Fire Department
- SCFD has notified its customers that they will seek City Council approval to discontinue providing fire dispatch services to the other Niagara municipalities upon the expiration of current Agreements on December 31, 2022
- In 2019, the Provincial government conducted a review of shared services and amalgamation of local municipalities. Niagara's municipal and regional leaders committed to explore all opportunities for coordination of several services including 911 dispatch
- Engagement meetings with all twelve municipal CAO's, fire chiefs, NRPS chief, Police Services Board Chair, NEMS chief and Region Acting CAO form the basis of this report
- Participants are in general agreement that dispatch consolidation is a preferred model while highlighting several caveats
- Consolidation of dispatch services need to enhance safety for both the public and the responder, provide opportunities for improved interoperability and coordination of emergency resources, and offer short/long term affordability.

Financial Considerations

A number of financial considerations exist that influence the cost associated with implementation of a consolidated dispatch. The following have been identified as contributing factors to fully understanding the financial impact of such a model of service delivery.

Technology

NG911

Report CSD 3-2021 provides further detail on the mandatory implementation of Next Generation 911 (NG911) in Canada. The target date for the discontinuance of legacy 911 services was set for March 31, 2024. On June 14, the CRTC (Canadian Radio-television and Telecommunications Commission) announced that the deadline for implementation by all Canadian PSAP's has been extended to March 4, 2025 out of respect for any delays as a result of the ongoing pandemic. Despite the revised timeline, the planned implementation for Niagara's NG911 solution is in keeping with the original timeframes. The opportunity for the sharing of a common NG911 service would eliminate the need for separate contracts and installations with the various emergency communications agencies. Options for deployment of NG911 are currently being developed by a consultant and a fulsome report including cost analysis will be received in September of this year.

Voice Radio Systems

Currently the NRPS and six municipal fire services (Grimsby, Lincoln, West Lincoln, Pelham, St. Catharines and Niagara Falls) operate on the local P25 digital radio system. These agencies have invested a combined ~\$4.6M in the purchase of capital equipment to operate on the digital platform. Six fire services remain on an analogue system. The provision of an analogue radio signal requires the conversion of the digital signal to analogue. This is currently done with the use of an engineered conventional channel gateway system, which is used by SCFD. Should consolidation include the discontinuance of the analogue converter and the use of a common digital voice radio system, the six remaining municipalities would be required to obtain compatible equipment. The combined cost for the purchase of this equipment is ~\$3.1M. In addition to the capital investment required, a monthly user fee of \$50 per communications device (mobile, portable radio etc.) results in operating costs of ~\$600K per year. Should the decision be made to maintain the current model of a digital system for one set of users and a converted analogue signal for another, immediate investments will be required to ensure redundancy to mitigate against risk of analogue conversion failure. Future budget planning will be necessary for the eventual migration to digital for all users as support for analogue technology diminishes.

Fire Dispatch Infrastructure

The discontinuance of the current fire dispatch services (NFFD and SCFD) provide an opportunity to reallocate communications equipment, servers and other infrastructure to the construction of a consolidated fire dispatch service. Associated costs for relocation, installation and licence fees will need to be assessed for any required investments or possible cost savings, such as municipally owned radio towers. The procurement of future assets and operational infrastructure will provide cost savings through a single service and purchasing strength.

Operations

Human Resources

It is anticipated that there would be minimal change in the number of FTE's currently required to manage fire communications. Cost savings may be recognized for administration and support for a single communications service.

Facilities

The consolidation of fire services to be operated out of either the primary NRPS Communications Service or the back-up location will require investment in the construction and remodeling of space to accommodate the new service.

Service Delivery Structure and Funding Model

Funding for the NRPS communications service is provided through the Regional levy. The Niagara EMS communications service is funded 100% by the Province. The Niagara Falls Fire Department communications service is funded by municipal levy and the St. Catharines Fire communications is funded by municipal levy and through fee-for-service contracts with nine local municipalities and two non-local municipalities. The financial implications to the Region and local area municipalities of a consolidated dispatch model will be based on the service delivery model chosen and the selected model for funding the service delivery. This process will involve understanding and analysing existing operating budgets for the service delivery, service contracts, staffing, assets, liabilities, reserves etc. associated with current service delivery in order to assess on a comprehensive basis the opportunity or investment required for the alternative options.

With the many various factors involving the financial impact of a consolidated dispatch model, additional analysis is required to provide Council with detailed financial

information to make the necessary informed decisions. Achieving this level of assessment will rely on the provision of full financial details from all agencies and staff will endeavour to provide a complete report to be submitted no later than Q4 2021. Should consolidation be agreed as the preferred model, operating and capital budgets will be prepared for 2023-24 implementation.

Analysis

The goal of the consolidation of Niagara's emergency 911 dispatch into a Public Safety Communications Service is to ensure optimal public safety and protection through the effective and efficient activation of resources to incidents where emergency service resources are required and, to ensure the safety and protection of all responders through a high degree of coordination and integration in the provision of these resources.

The provision of emergency 911 dispatch for Niagara's regional police, regional EMS and local municipal fire services is provided by five separate communications services. These include the NRPS, NEMS, Niagara Falls Fire Department, St. Catharines Fire Department and Tillsonburg Fire Department (for Fort Erie). In 2019, the Provincial government ordered a review of several municipalities for consideration of the amalgamation to a single tier local government model. Niagara Region was identified as one of the municipalities under review, which prompted local governments to conduct their own analysis of the provision of several services in which enhancements could be made through an improved coordination in a shared service delivery model. Further information on this review and identified opportunities is detailed in report CAO 02-2021. Despite the subsequent decision of the Province to not force municipal amalgamation, local leaders recognized the value in continuing to seek opportunities for shared service that would provide enhanced public service, ideally accompanied with economic efficiencies.

In 2011-2012, Niagara Region commissioned an external review of emergency dispatch services and to develop consolidation options for consideration. Consultant firm IBI was hired and a subsequent report filed (CSD 7-2014). The findings of the review recommended an operationally integrated "Public Safety Communications" model as the one that IBI Group favours (page 81). While this was the preferred option, it was noted that "it may take a number of years to transition to this model" (page 82). The IBI report has provided a foundation for collaborative efforts that have since been undertaken in developing efficiencies in emergency service communications. As IBI highlighted that a full transition to an integrated model may take a number of years, ten years later in fact an opportunity does exist to make the move.

With the mandated implementation of NG911 in all Canadian primary and secondary PSAP's to happen no later than March 4, 2025, an opportunity exists to share this new technology across the emergency service agencies in place of the alternative to procure and manage several different systems in Niagara. A comprehensive review of the implementation of NG911 is currently underway by Federal Engineering Inc. with a final report due September 30 of this year. This report will inform the immediate benefits of dispatch consolidation through operational efficiencies as well as cost savings.

The move to a complete consolidation of emergency dispatch services is likely to be accomplished in phases. Factors influencing the progress of a unified system include governance, facilities, technology and funding model.

Governance

NEMS: Oversight of the Niagara Ambulance Communications Service is through the Ministry of Health (MOH). The Province owns and funds 100% of the capital and operating costs associated with the delivery of ambulance communications in Niagara. NEMS operates the dispatch service within a Performance Agreement with the Province and any changes to how these services are administered are at the sole discretion and approval of the MOH. The MOH continues to study provincial ambulance dispatch reform and the indication to other municipalities also looking at physical co-location of local dispatch services is that the MOH is not approving any changes at this time. As the MOH provides the necessary infrastructure for ambulance communications, including a provincial voice radio system (P25 as the standard) and the plan for a provincial NG911 system, the scope of local consolidation for NEMS would be limited at this time to the integration of provincial systems with local solutions. This work has been successful in the past, such as the CAD to CAD (Computer Aided Dispatch) interface with fire dispatch and similar initiatives will be undertaken regarding NG911 and P25 radio integration with local systems. The timeline for the implementation of the provincial NG911 and P25 is still not clear; however, staff continue to work closely with the province in these initiatives. Looking to the future, Niagara is well positioned to help lead in provincial ambulance dispatch restructuring which will benefit from the development of a Public Safety Communications Service.

NRPS: Oversight of the Niagara Regional Police Communications Service is through the Police Services Board. The NRPS provides Primary PSAP services under contract with the Region as well as emergency communications for their own service. The NRPS owns and operate their own digital voice radio system, referred to as "P25". The P25 system has been made available to the local fire communications services operated by

Niagara Falls and St. Catharines. Both of these services have switched to the P25 system and an additional four municipal fire services also use the NRPS radio system as do the Niagara Parks Police and soon the local Canada Border Services Agency as they are on boarded to the system in the coming months.

Fire: Oversight of municipal fire services is through the individual municipalities. Each fire service has the ability to determine how it will receive its dispatch services. With the possibility of the discontinuance of fee-for-service fire dispatch by St. Catharines Fire to the nine regional municipalities at the end of 2022, each municipality will be required to determine how they are to be dispatched. Despite having autonomy in procuring the provision of this service, to best serve the public at large, the communications solution procured will be required to provide interconnectivity with all other local dispatch services (NRPS and NEMS) and best support the mandatory mutual aid agreements through enhanced interoperability.

A future consolidated dispatch inclusive of the integration of technology and facilities, would maintain autonomy with respect to operational policies related to the delivery of agency-specific communications. There is consensus that service delivery, operations and policy should be completed by experienced professionals in their respective field i.e. fire dispatches fire, police dispatch police and EMS dispatches EMS. As such, a regional fire communications service would be created to ensure oversight consistent with mandated requirements and policies and procedures that meet the need of all twelve local area fire services.

Facilities

No existing dispatch facility has the required space to house all three communications services (police, fire and EMS). The NRPS main communications service located at District 2 likely has adequate space (with minor renovations) to physically accommodate hosting a regional fire communications service. With the imminent construction of the NRPS communication back-up centre, this new space is able to be scalable to also accommodate the fire communications service. Regardless of the location of the primary and back-up sites for the fire service, both locations will be required to provide the needed functional space.

With the ultimate goal of creating a completely unified communications service in which all three dispatch agencies (police, fire and EMS) are co-located, a longer-term facilities strategy is required. The implementation of an EMS facilities plan has been underway for several years, which includes the construction of a Primary Hub that could host such an integrated communications service. Information specific to the EMS Primary Hub is

being presented to Council in August of this year and will help inform the decision for dispatch consolidation as it relates to a future facility.

Technology

NG911

A key decision point in the determination of the future of dispatch consolidation is directly related to the implementation of NG911. As noted previously, NG911 must be operational across Canada, including Niagara, no later than March 4, 2025. A recommendation has been made that this technology be operational at least one year prior to the deadline to permit complete transition to the new system. A report providing options for an NG911 solution for Niagara will be presented in September of this year. Within the following quarter, a decision will be required if the NG911 system will be limited to the primary PSAP and NRPS or if it will be intended to also support a common fire communications service. Figure 1 details the parallel activities and the influence of each on outcomes.

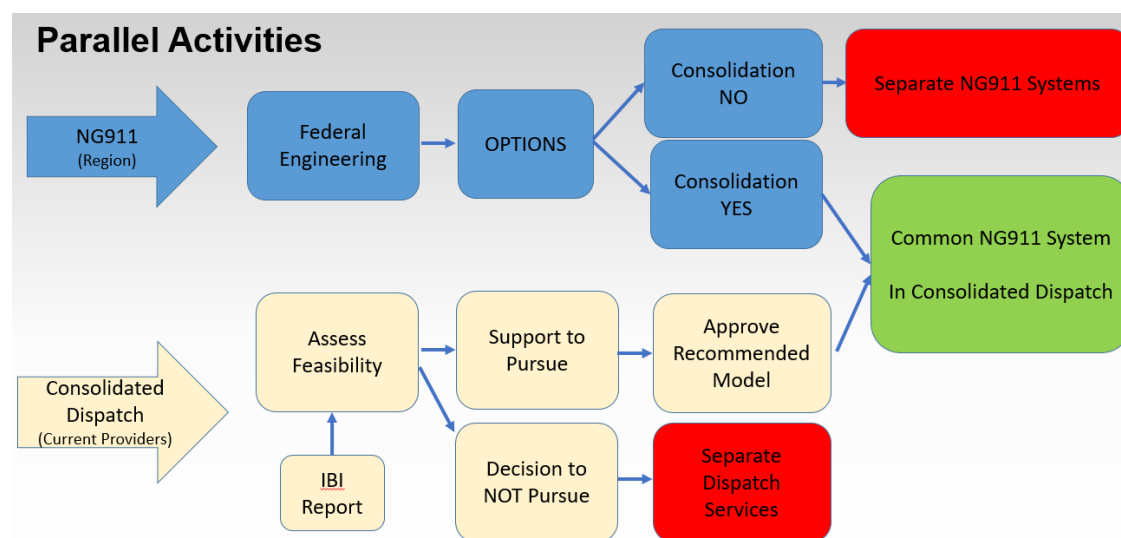


Figure 1 shows the two concurrent activities and the decision points related to NG911 and consolidation.

If a decision is made in favour of dispatch consolidation, the initial phase will include the formation of a regional fire communications service and the initiation of a common NG911 solution to serve the Primary PSAP, NRPS and regional fire. If there is no intention of pursuing a consolidated dispatch in Niagara, NG911 will be procured for the use of the primary PSAP and NRPS operations. Fire services will then be required to retain NG911 and dispatch services from alternate sources.

Voice Radio

With six of the twelve local municipal fire services operating on the P25 radio platform and six remaining on the converted analogue signal, a decision is required on the design of a consolidated dispatch system. Municipalities who have moved to the digital system for their fire agency have been pleased with the performance of the enhanced system. Other municipalities that remain on the analogue signal are also satisfied with the current system meeting their needs and do not see any immediate reason to switch to digital. It has been noted by several industry experts that there is little to no research and development of furthering analogue radio systems and the future focus is entirely on digital platforms. It is reasonable to expect the eventual transition of all voice radio communications to digital although exact timelines are unpredictable.

As previously noted, the current voice radio system for fire as supplied under service contract with the SCFD is P25 digital, however a converter is used to change the digital signal to analogue to allow those using analogue hardware to continue without switching to new P25 equipment. The issue of interoperability has been discussed with emergency service leaders and while rudimentary forms of common communications exist these methods are not true common systems where all responders have the ability to communicate with each other as required. Currently, interoperability is limited to the use of two different hand held devices (one analogue and one digital) which limits communication between the two systems only to the individual using both radios. Third party communication devices also exists such as “Base Camp”, a hardware unit that allows various communication devices to be physically interconnected thereby facilitating the different systems to communicate albeit in a limited function. NFFD currently owns one of these systems and the experience is that it is not easily deployable and is cumbersome to use effectively. Industry Canada describes the gold standard of interoperability and the most effective way of achieving radio interoperability is with the use of common standards-based radio systems by all public safety agencies in the broadest geographical area.

With the likelihood of future technology being completely digital, consideration is required in the design of a new communications model, as to the need for all services to be on the common P25 digital system immediately with consolidation or if the current analogue conversion service should continue. If the option is to continue providing converted analogue radio services, investments are required to ensure redundancy in the conversion system as it is currently a single point of failure for the radio system and a risk assumed within a new dispatch model and the provider.

Options to be reviewed include the ability and agreement of all municipalities to move to P25 with the launch of a consolidated communications services, the plan to phase in P25 with the six remaining fire services within a specified time period, or to maintain analogue services until such time that municipalities independently move to P25 or the technology becomes redundant.

Service Delivery Structure

To operate a consolidated dispatch service, at least three possible options have been identified; Region owned and operated, shared service and fee for service.

Region Owned and Operated

In this model, the Niagara Region provides the necessary capital assets and operating budget to supply a regional fire communications service for all twelve municipalities. This regional dispatch would be responsible for the processing of fire-related 911 calls and ensuring communications/interoperability with all twelve fire agencies as well as NRPS and NEMS (Figure 2). A common digital radio system and equipment would be provided by the Region to the municipalities through the NRPS P25 system. The full cost of this service would be funded through the Regional tax levy.

Shared Service

This scenario separates the regional fire communications service functions from the responsibilities of the local area municipalities. In this model the Region funds and supplies regional fire communications that would include the call processing of fire-related 911 calls and delivery of communications to the local fire services. The municipalities would be responsible to provide the assets able to receive and operationalize the communications from the regional service in the manner decided by that municipality (Figure 2). Funding for the Region portion would be through the Regional tax levy and the Municipal portion through local tax levies.

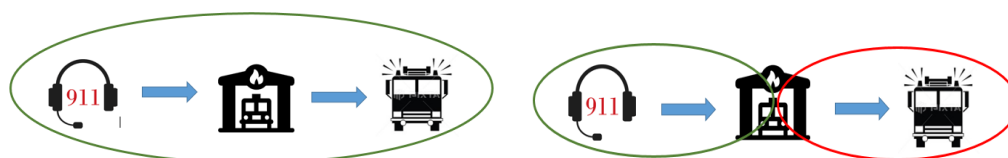


Figure 2. The left graphic depicts a complete Regional Owned and Operated communications service for all 12 municipal fire services. The right image is a Shared model where the regional dispatch service provides communications to the point of the municipal agency. The municipality is then responsible for capital and operating to receive the information.

Fee for Service

This model is similar to the Region Owned and Operated option with the difference in that 100% of funding for the service (capital and operating) is recovered through proportional payments from local area municipalities.

Phased Approach

The process for dispatch consolidation would be implemented in three phases.

Phase 1: Q3-Q4 2021

Should Regional Council approve the Recommendations contained within this report, a number of activities will be advanced to develop more detailed information to assist Council in making a final decision by the end of Q4 2021. This will require a detailed economic evaluation to implement and commence operations of a consolidated communications service to start no later than March 31, 2024. Included in this assessment will be matters related to human resources to identify appropriate staffing models as well as legal guidance on the implementation of a new service provided/facilitated by the Region, a commission or new entity. Further assessment of the feasibility to physically host fire communications within NRPS District 2 and the NRPS back-up communications centre would be undertaken. During this phase, a preferred governance model will also be recommended for Council's consideration. With the receipt of the NG911 report in September of this year, the information provided will better inform aspects of technology integration while at the same time a determination of voice radio systems will also be recommended. This information will assist Council in the final decision by the end of 2021 of proceeding with consolidation, a preferred funding model and approved governance structure.

Phase 2: 2022 – Q1 2024

With a decision to proceed with consolidation, the objectives of the second phase focus on the implementation of the service no later than March 31, 2024. To accomplish this, a regional fire communications service would be developed to replace the existing dispatch service(s). This new program will design the preferred governance structure to ensure quality oversight and effective delivery of services. Capital and operational budgets will be developed for 2023. With approved budgets, facilities will be readied with capital assets to co-locate the new fire communications service, likely within District 2 of NRPS as well as the new back-up communications centre with one site being designated the primary site and the other the back-up for fire communications. This phase will also include the continued implementation of NG911 as a regional system

and ensure a voice radio system to best meet the needs of the service. While the efforts of Phase 2 focus primarily on local consolidation of fire and police, collaboration will continue with the Ministry of Health to ensure integration with provincial EMS technological systems with local solutions. This will ensure operational readiness for go-live of NG911, P25 and a regional fire communications service.

Phase 3: Post Q1 2024

With the go-live of the regional fire communications service and complete transition to NG911 no later than March 31, 2024 one year prior to the mandatory deadline, the consolidation of common fire and police facilities and communications systems will be fully operational. For long-term sustainability, a plan to co-locate all three emergency service agencies (NRPS, fire and EMS) can be considered. The EMS Primary Hub offers an opportunity to host a complete Niagara Region Public Safety model of service delivery that offers amongst other things, full emergency dispatch integration. As previously indicated, a Council report concerning the Primary Hub will be tabled in August of this year.

Alternatives Reviewed

The recommendations provided within this report are intended to move towards a preferred emergency communications service delivery model of consolidation. While a number of factors and alternatives exist that define how such an integrated service could be provided, alternatives to consolidation were considered.

Municipal Procurement of Fire Dispatch Service

Regardless of a decision for or against consolidation, the NRPS and NEMS communications services will continue operations. Municipal fire services however, will be required to procure their own dispatch service if consolidation is not agreed upon. This will require each of the twelve municipalities to determine how best to provide fire communications. Failing consolidation, St. Catharines Fire will seek their Council's approval to discontinue fee-for-service dispatch for the nine existing LAM's. Both St. Catharines Fire and Niagara Falls Fire have developed an alternative plan to consolidate the two existing fire communications services and relocate to the NRPS District 2 Communications Centre to continue to provide dispatch services for their respective communities only, using the technological integration of NRPS NG911 and P-25. It is unknown at this time if additional fire services could also provide/receive dispatching services in this configuration. In this scenario, with each fire agency developing its own method of dispatch services, it is likely this will result in a further

fragmentation of fire communications creating ineffective interoperability and possible increased risk to public and responder safety.

This alternative is not recommended as the possibility of a further fragmentation of fire dispatch services would worsen the current situation of multiple providers. As municipalities procure fire dispatch services from other providers, the result is likely an uncoordinated compilation of an array of fire dispatch services. Each would require a level of integration with regional police and EMS making this challenging and not an optimal solution.

Partial Independence of Fire Communications

This alternative considers the majority of municipalities agreeing to consolidation however, one or more make the decision not to participate. In this scenario, if economically and practically feasible, a quasi-regional fire communications service is implemented with those municipalities choosing to participate, and the remaining services electing to procure fire dispatch services independently.

This is not recommended as it is not the most operationally effective model to ensure safety and coordination of information and is not in keeping with a “one Niagara” philosophy.

Relationship to Council Strategic Priorities

The NG911 project and dispatch consolidation supports Council Strategic Priorities of fostering Healthy and Vibrant Communities through the delivery of quality, affordable and accessible emergency services. In addition, this model contributes to a Sustainable and Engaging Government with a high quality, efficient, fiscally sustainable and coordinated core delivery of emergency dispatch services that is possible only through enhanced communication, partnerships and collaborations across agencies and governments.

Other Pertinent Reports

- CSD 07-2014 Public Safety Dispatch Review
- PHD 02-2015 Emergency Services Dispatch Update
- Memorandum C8253 Supplementary to PHD 02-2015
- PHD-08 2015 Consolidated Emergency Services Dispatch
- CSD-04 2017 NRPS 1 District Project Update
- CSD 3-2021 NG911 Updates

- CL-C 16-2021 NG911 Updates

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