



Committee Report

To:	Warden Hicks and Members of Grey County Council
Committee Date:	February 28, 2019
Subject / Report No:	CAOR-CW-03-19
Title:	Request to Support Enhanced Fire Communications Project
Prepared by:	Kim Wingrove, CAO
Reviewed by:	
Lower Tier(s) Affected:	County-wide
Status:	Recommendation adopted by Committee of the Whole as presented as per Resolution CW55-19; Endorsed by County Council on March 14, 2019 as per Resolution CC24-19.

Recommendation

1. That report CAOR-CW-03-19 Request to Support Enhanced Fire Communications Project be received; and
2. That Council support the request of the Grey County Fire Chiefs that Grey County initiate a project to assess and make recommendations on enhancements to fire department communications infrastructure; and
3. That staff be directed to negotiate a single source consulting contract with the B. Perlstein Computer Services to act as project consultant; and
4. That project funding, not to exceed \$25,000 for phase one of the project, be provided from the Connected County reserve.

Executive Summary

The nine fire departments operating in Grey County (Inter-Township or ITFD, Chatsworth, Owen Sound, Meaford, West Grey, Hanover, Dundalk, Grey Highlands, The Blue Mountains) have approached Grey County requesting assistance to make improvements to communications infrastructure to remedy shortcomings which pose safety hazards to fire personnel and to enable improved coordination between departments, dispatch and other first responders during mutual aid calls.

It is recommended that Dan Perlstein, an expert in first responder communication systems and process design, be retained to initiate a three phase project (with Council approval at the completion of each phase). Phase One would identify issues, propose a complete solution with cost estimates and develop an MOU to confirm relationships between the stakeholders. Upon confirmation of support by each fire service, a summary recommendations report would be

provided to Grey County Council for approval. Phase Two includes development of a(n) RFP(s) to procure any infrastructure and services, as well assistance with contract negotiation and Council approval to award contracts to complete the enhancements identified in Stage One. Phase Three is implementation of the enhanced system.

Background and Discussion

Accurate and proper communications is vital to an effective emergency response. When responding to 911 calls including structure fires and motor vehicle accidents, effective communication between dispatch, all fire services and paramedics responding to the call, and other personnel on scene is necessary. During municipal emergencies or disasters, coordinated communication amongst responding emergency services, volunteer agencies, municipal departments and municipal administration is critical.

Fire Dispatch and Communication

All fire departments in Grey County, with the exception of Hanover (Tillsonburg) and The Blue Mountains (Barrie), are dispatched by the Owen Sound Police Service. Each of these fire dispatch centres provide the same functionality to take calls and dispatch the appropriate fire service, monitoring the radio channel, using Computer-aided Dispatch (CAD) to create formal incident records, linking to GIS mapping, providing a place to record pre-plan and hazard information, enabling mobile services and in some cases, linking with paging and voice to automate some of the call setup.

Each fire vehicle is equipped with an analog radio that picks up a signal on the Grey County fire radio frequency transmitted from the County-owned tower at Ceylon, or the privately-owned Walkerton tower. What does not exist is a channel that everyone can access, independent of the dispatch channel, so that fire services can communicate with each other or with County Transportation or Paramedic Services when on scene at an emergency situation.

One safety issue that has been identified occurs where the Grey County fire radio frequency is overloaded due to being used not only for initial page out/request for response but also as the on-scene incident command link to dispatch centers, used generally to request additional resources, for most of the municipalities. This prevents timely response to requests from the scene, i.e. requesting aid for a structure fire when a fire department is talking on the air at an existing incident. While some fire departments have their own radio infrastructure that does not use the Grey County fire frequency or channel (i.e. Owen Sound, ITFD and The Blue Mountains primarily), they would see benefit to being able to use the Grey County fire frequency to page out additional staff without tying up their own existing radio systems.

There is also a critical safety issue when on-scene fire personnel are communicating on the Grey County fire frequency, if dispatch needs to tone out another station. That tone will override the on-scene communication for a period of 45 seconds. Any on-scene communications, e.g. a Mayday call, will be missed. The fire departments with an additional fire-ground frequency can use this to communicate on scene and avoid the dispatch conflict, but that department must dedicate a person to monitor and record its communications, as dispatch would not be able to.

Industry Canada is responsible for the management and assignment of radio frequencies. At this time, Grey County has been advised that there are no additional frequencies being assigned.

Existing Communications Infrastructure

Grey County owns communications towers in Woodford and Ceylon which support communications for fire departments and the County Transportation Services. Current communications infrastructure is inadequate to provide seamless radio coverage across the County using the fire service's primarily analog radio frequencies. Transportation Services operates on a different frequency from fire. Transportation radios have both digital and analog capability. Paramedic Services operates on a different network, more similar to the cell phone network.

Grey County has a long history of support for fire mutual aid. In 1976, \$32,000 (about \$131,000 in 2019 dollars) was invested by the County in a radio communication system for the benefit of each of the fire brigades in the County. In 2011, Council passed resolution FP115-11 that confirmed the County's responsibility to operate and maintain the equipment on the Ceylon tower. The County has continued to invest in the maintenance of the towers and the communication equipment on them and has a reserve fund for their eventual replacement.

Proposed Communications Enhancement Project

In January 2019, representatives of the Grey County Fire Chiefs, Owen Sound Police Services – Emergency Communications Centre, County emergency management staff and CAO Wingrove met with Mr. Dan Perlstein to discuss current issues and desired outcomes of a project to enhance fire service communications. It was suggested that a phased approach, allowing for consideration and approval at each step would be most appropriate. The proposed work plan for the consultant would include the following:

Phase 1

- Review of existing systems, their performance and use of infrastructure assets such as towers and radio frequency licenses, etc.
- Identification of options to address performance issues
- Definition of the Scope of Work for the new (preferred option) radio and paging system
- Investigation of on-going system support and maintenance/administration options
- Engagement/consultation with CAOs of member municipalities
- An MOU outlining the relationship between the stakeholders and the County of Grey and including common assets (see above) to be used, responsibilities of the parties, and financial impacts in terms of Capital and Operating budgets
- A Report to County Council outlining recommended system changes, the contents of the MOU, the future project benefits and the anticipated costs of the project (capital and operating).

Subsequent to Council approval (Grey and lower tiers as necessary):

Phase 2

- Produce the technical section of an RFP (the boilerplate sections to be provided by the County)
- Lead the RFP evaluation process
- Develop requirements for preferred on-going support, maintenance and administration
- Prepare report to obtain Council approval for the expenditure
- Provide input into contract negotiations

Phase 3

- Solution Implementation
- Testing and Commissioning
- Stakeholders transition

Legal and Legislated Requirements

Staff recommend the single sourcing of the consulting resources required for this project. Single sourcing is a method of procurement whereby there is more than one vendor potentially able to supply a good or service and a contract awarded without a competitive bidding process. Grey County's procurement policies permit single sourcing in cases where there is an absence of competition for technical reasons and the Goods and/or Services can only be supplied by a particular Supplier and/or when competitive procurement may be found to be impractical.

Mr. Perlstein has extensive experience with managing projects of a very similar nature to what is required by the Grey County Fire Chiefs. He has demonstrated a commitment to the project at a very competitive rate.

Financial and Resource Implications

It is very difficult to make an accurate assessment of the effort required at this stage when there are many unknowns. A phased approach to the project is proposed, with phase one of the project not to exceed 3 months and \$25,000 to be drawn from the Connected County reserve.

Relevant Consultation

- ☒ Internal Emergency Management, IT, Transportation, Finance, Paramedic Services
- ☒ External- Grey County Fire Chiefs, Owen Sound Police Services- Emergency Communications Centre, Mr. Dan Perlstein

Appendices and Attachments

Dan Perlstein – CV

DAN M. PERLSTEIN, P. Eng.

PRESENT POSITION

Principal, B. Perlstein Computer Services, specializing in Public Safety radio communications systems. Mr. Perlstein has 40 years of systems design and program/project management experience in the fields of mission critical wireless communications and radio-based navigation systems. He has extensive knowledge of all facets of project lifecycle starting with concept definition, identification of user needs, writing of operational and technical specifications, continuing with tendering and tender response evaluation and ending with project implementation, final testing, installation and acceptance.

SUMMARY OF CONSULTING SKILLS

- design and implementation of country-wide and regional trunked and conventional voice radio systems (Motorola & Harris, P25, SmartZone, EDACS, NXDN, DMR/MotoTrbo, etc.)
- IP –based mobile data radio technologies
- evaluation of IP based wireless broadband technologies (LTE, MESH, WiMax, etc.)
- gathering and preparing multiple jurisdictions/multiple agencies public safety requirements
- analysis of definition of "best model" of leveraging existing wireless assets in multiple jurisdictions environment
- provision of program management support and project management supervision during acquisition and implementation of large wireless (voice and data) systems
- testing and performance verification of large scale wireless networks
- frequency co-ordination including presentations and submissions to Industry Canada
- design and implementation of large Control Centers for public safety and the military
- support in the generation of Governance documents in multiple jurisdictions/multiple agencies environments
- integration of radio communications and Computer Aided Dispatch (CAD/RMS) systems
- Automatic Vehicle Location/Navigation systems (GPS, Loran, Transit, etc.) and Intelligent Vehicle Highway Systems (IVHS)
- Interoperability of radio communications system in both the Public Safety field as well as in the Municipal and Transit fields
- vendor management
- various, highly mobile, military communications systems
- radio communications in confined spaces (OFRs, BDAs, Optic Fibre transport)
- radio detection of explosives and other dangerous materials
- radio interference studies
- product specifications and feasibility studies
- preparation of technical training courses
- development of cost sharing financial models

WORK/PROJECT HISTORY

2008 to present: B. Perlstein Computer Services

Principal:

- *Technical advisor to the Waterloo Regional Police Service and the seven Regional Fire Departments for the acquisition and implementation of the new P25, FDMA/TDMA, simulcast, Radio Communications System – on going*
- *Lead Consultant to the Township of Springwater, as a sub-consultant to CIMA+, for the analysis of present radio system status and the proposal of options to enhance the radio communications capabilities of the Springwater Fire and Emergency Services – on going*
- *Lead Consultant to the City of Hamilton, as a sub-consultant to CIMA+, in support of their negotiations with Motorola Canada for the upgrade and support of the City's Motorola P25 radio system serving the police and fire services – on going*
- *Lead Consultant to the City of London, as a sub-consultant to CIMA+, for the analysis of the status of the present Harris EDACS radio system serving the police, fire and City users and the proposal of options to ensure continuous performance service delivery and on-going technical support.*
- *Technical Subject Matter Expert for The Ministry of Community Safety and Correctional Services for the new Ontario Provincial Radio System. As a sub-consultant to CIMA+ main responsibilities included review of all the technical RFP documents and technical support in the development of the system architecture concepts.*
- *Technical Advisor to Metrolinx/GO Transit on the specification, proposal verification and implementation of a Motorola, P25, FDMA/TDMA, Linear Simulcast Radio Systems covering the South-Western Ontario areas served by GO Transit – on going*
- *Technical Lead and Project Manager for the acquisition and implementation of the Niagara Regional Police Service new Motorola, P25, TDMA/FDMA Radio Communications System – project successfully completed in September 2016*
- *Technical Lead Consultant for the Durham Region NextGen, Harris P25, TDMA/FDMA interoperable radio project serving Durham Regional Police, seven Fire Departments, Regional Municipal Users – project successfully completed in 2014 as part of Lapp-Hancock Ltd.*
- *Consulting Services for the City of Greater Sudbury – Upgrade, from EDACS to Harris P25, of the Police Service Voice Radio Communications System serving Police, Fire and Transit as part of Lapp Hancock Ltd.*

- *Implementation of P25 radio system for Niagara Falls Fire Services – successfully completed in 2010*
- *Radio Coverage Modelling for the Province of New Brunswick for the purpose of its integration into the Tri-State, Nova Scotia, New Brunswick and PEI, P25 radio initiative – completed in 2008 as part of Lapp-Hancock Ltd.*
- *Ontario Ministry of Natural Resources: Engineering Services to Complete an Independent Technical Design and Cost Analysis of a Low VHF Replacement Radio Network in Northern Ontario, including technology analysis, equipment selection and radio coverage design and verification – successfully completed in 2008*
- *A technical evaluation, for the City of Toronto, on the feasibility of a City-wide Municipal Mobile Data Network including various technology platforms, equipment and radio coverage performance and cost and revenue analysis - 2008*

2008 to 2015: GO Transit/ Metrolinx

Mr. Perlstein was responsible for setting up the Radio Communications Group, the design and installation of the new, Motorola P25 Phase 2, UHF radio system (upgrade from Motorola ASTRO 25 6.8 Special Edition and using SmartX to bridge the two variant technologies). He was also responsible for the transfer of the maintenance and support from the system supplier to in-house and the evaluation of new mobile data technologies, such as LTE, for the benefit of the Transit Agencies in the GTHA

1996 – 2007 Toronto Police Service (TPS)

Program Manager, Wireless Networks

Responsible for a group of 15 technical staff involved in the design, implementation and support of all mobile networks for Toronto Police Service as well as Toronto Fire Service and Toronto EMS Service (projects size: \$5 Mil.- \$50 Mil.)

In charge of:

- Upgrade of the existing Motorola SmartNet technology to SmartZone.
- the long term strategic planning for the mobile data and voice requirements of all Public Safety agencies in Toronto
- the technical interoperability with other public safety and Homeland Security agencies in Toronto and at the Provincial and Federal levels
- research of various advanced wireless voice and data technologies, P25, Voice over IP, high speed mobile data systems (mesh technologies, WLANs, etc.)
- licensing activities with Industry Canada (the Canadian equivalent of the FCC)
- preparation of RFPs and evaluation of tenders
- interference studies
- technical training of staff
- maintenance of approx. 8000 pieces of user gear including mobile and portable radios, mobile workstations, data modems, GPS-based vehicle location equipment, as well as other specialized communications equipment

- implementation of cost and quality control measures

1993 – 2007 IISR Israel

Technical Advisor, Communications Technologies

Since 1993, retained by the company to work on a number of systems design and implementation activities related to wide-area and country-wide mobile radio systems for Eastern European countries and the application of millimetre waves to the detection of non-ferrous explosive materials. The work was mostly focused on system design and testing procedures, the definition of operational needs and the writing of technical specifications.

1993 - 1996 Delcan/Hutch – Rapid Transit Expansion Program

Senior Communications Consultant on Transit Radio Systems

1990 - 1994 Radio Observatory, Cambridge, UK

Various consulting activities related to the development of a FM radio stations-based location technology and associated equipment. The work focused on developing location algorithms, field testing and product specifications.

1994 - 1996 The Israeli Aircraft Industries

Various consulting activities related to the product specifications and system integration of their transit communication and location system. The work focused on very detailed product specification and software navigation screens, the writing of responses to various RFPs

1982 – 1993 Toronto EMS Service

Chief Engineer, Communications

Responsible for:

- the radio, telephone and CAD systems
- the operation of the Control Center
- design and implementation of communications and dispatch systems
- design and implementation of the first Public Safety AVL system in North America (1987)
- development of Intelligent Highway Traffic systems in conjunction with the Ontario Ministry of Transportation

PROFESSIONAL MEMBERSHIPS

Member of Professional Engineers of Ontario

EDUCATION

1972 - 1976 Technion - The Israeli Institute of Technology

Graduated with B. Sc. in Electronics Engineering, with specialization in communications and control of nuclear reactors

Attended and graduated from various specialization courses in the fields of:

- antenna systems design
- advanced radio communications technologies
- project management and cost control
- advanced management techniques
- training techniques