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# 2019 Business Plan & Budget

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## Paramedic Department

### Prior Year Accomplishments

#### Economic Innovation & Prosperity

Paramedics continue to support *Economic Innovation & Prosperity* by providing best practices, clinically evidenced high quality service, and strengthening the County's overall corporate brand.

#### Sustainable Infrastructure & Services

##### Paramedic Stations

The department long term plan for station replacement is on schedule. Cramahe Emergency Services Base was completed in 2017. Alnwick-Haldimand Shared Base will be completed in October 2018 with a planned Grand Opening in the spring of 2019. Also in 2018, the agreements for a shared facility with the municipality of Trent Hills were solidified. The RFP was awarded to Taskforce Inc. and the hope is that construction will begin in Q4 with a completion date of April 2020. That leaves only Brighton remaining and preliminary discussions and location research/planning will take place in the 2019 Budget year with a potential shared service agreement in 2020 and construction completion in 2022. These collaborative projects are a fine example of the County and member municipalities working together to create efficiencies and improve service delivery to our communities.

##### Ambulance Replacements

As part of the County's capital planning, ambulances and Emergency Response Vehicles (ERVs) are replaced on a regular cycle. This cycle ensures that the County continues to efficiently and cost effectively, operate paramedic services. In addition to replacement, in order to maintain operational readiness in its 24/7 operation, the County ensures that there is one ambulance available for every shift as well as ERVs that are deployment ready to service the community as needed. The following were under-taken in 2018 to address the Paramedic Department's capital needs:

**Ambulances (2) – ERV (1)**



## **Power Stretcher/Load System**

Paramedics employ the use of many different types of equipment in delivering their services. Each of these pieces of equipment has a life cycle. The movement of patients across all types of terrain is an essential part of what paramedics do on every call to service.

Northumberland has joined the vast majority of land ambulance services in Ontario deploying a Power Stretcher system. An issue paper was presented in the 2018 Budget cycle and approved. Stryker<sup>®</sup> was awarded the RFP through Rowland Emergency Vehicle Product Inc. All installs and retrofits were completed by August of 2018 – a very aggressive schedule but important for consistency and safety on the front line.

Elimination of a minimum 8 lifts per patient carrying call greatly reduces the physical demand to the paramedic and the potential for lost time due to acute and repeated strain injuries. A comparable service who transitioned in 2016 to a power cot/load system reports that they have had zero stretcher related injuries since implementation. In addition to reducing lifts and therefore lost time due to injury, the power load stretcher system will:

- Increase patient and paramedic safety
- Increase patient comfort/stability at transport height
- Increase the weight capacity and therefore eliminate the need for extra bariatric equipment/stretchers
- Reduce the need for lift assist and therefore increase available ambulances when caring for bariatric patients
- Reduce tiered response lift assist and therefore reduce cost to member municipalities

## **Ambulance Service Review**

In June 2018, the MOHLTC conducted its triennial service review for Northumberland Paramedics. This review is a full audit of the entire paramedic operation. The purpose of the audit is to ensure compliance, in all aspects of service delivery, with legislated standards. The service received notice 90 days prior to the review along with the MOHLTC team participants and an audit matrix. Over three days, the Team audited all aspects of legislative requirements in service delivery. This included Operations; vehicle and equipment maintenance schedules, Quality Assurance programs; Human Resources Inventory, education development/facilitation and chart auditing, collaboration/cooperation with other ministry stakeholders; Regional Base Hospital Program, MOHLTC Eastern Field Office, Hospitals, Allied Agencies.

The completion of our service review ended with the MOHLTC exit presentation. The meeting was attended by Paramedic Senior management and the County CAO along with the senior



Review Team members. The results were complimentary with some references as “standing out in Ontario” with Quality processes.

## **Thriving & Inclusive Communities**

### **Striving for Clinical Excellence**

The service that paramedics deliver almost always provides opportunities to learn and to improve on the high quality of care already provided. The Advanced Life Support Patient Care Standards (ALSPCS) change frequently and are considered a “living document” referenced in legislation and updated annually. The paramedic scope of practice, both primary and advanced is evolving with it. The department has developed several initiatives to improve the quality of care in the community both directly and indirectly. The direct measures included increased monitoring of patient care through practical observation on calls as well as digital chart review. These observations are then used as opportunities to educate paramedics. Some of this education occurs with high fidelity simulation either in our lab or in the field. This process has greatly enhanced the training available to paramedics and supports our best practices initiatives. In addition simulation is a vital part in preparing paramedics to return to the workplace and clinical practice after an extended leave.

Indirectly, paramedics continue to participate in the training of member municipal staff in first aid and CPR. These courses occur a few times a year and allow us to connect with both laypersons as well as trained first responders. The experience of training and connecting with highly trained paramedics helps to build relationships and enhance the safety and well-being of the people in Northumberland County.

Specific enhancements included:

- Increased reviews of ambulance calls including random and targeted audits and call reviews
- Increased use of technology and improved processes in conducting and expediting call investigations
- Continued utilization of high fidelity patient simulation in lab and now available in the field.
- Focused training in “Obstetrical Emergencies and Pre-hospital Childbirth”
- Implementation of a new ePCR/Quality Assurance tool to enhance the ability to accurately collect and report on data, utilize a digital dashboard to monitor key performance indicators in real-time, provide two-way feedback to paramedics, reduce paper and support LEAN initiatives.



## **Community Paramedicine**

The Paramedic department believes in the need for “community paramedicine” in Northumberland as part of our “Seniors Strategy “and will at some point be a normal function of all land ambulance services in Ontario. Currently, only some services have community paramedicine programs and all are slightly different in scope. The commonality in every community is attempting to bridge gaps in current services provided through the Ontario Local Hospital Integration Networks (LHINs). When these gaps exist in the provision of care for people with chronic physical or mental illness, emergency services and hospital emergency rooms are over-utilized causing surge capacity and ambulance deployment challenges. Currently the Ministry of Health and Long-Term Care does not include “community paramedicine” in the Ontario land ambulance funding agreement. Those Ontario services currently offering this model were initially funded through non-sustained grants and/or local government funding. It is the hope of Northumberland Paramedics that through 2018/2019 we can work with the County Grant Writer and secure funding through the Central East LHIN or other programs. Additionally, we are consulting with Northumberland County Social Services to look for areas where we can collaborate on improving access to care in our communities.

A community paramedicine program will partner with local agencies which are already funded by the CELHIN. Northumberland Paramedics will submit a strong proposal, with support from Northumberland Hills Hospital, the Northumberland Family Health Team and the Port Hope Northumberland Community Health Centre. The proposal aimed to reduce non-emergency visits to hospital, reduce re-admission rates to hospital, increase efficiency and availability of emergency ambulances and facilitate improved access between patients and primary health care providers. All of which assist our citizens to remain in their homes, “*The Right Care in the Right Place*” and is consistent with the “Patients First Act”, 2016, S.O. 2016, c. 30 - Bill 41.

## **Paramedic Week Celebrations**

Every year in May the County recognizes National Paramedic Week. Northumberland Paramedics takes this opportunity to celebrate service to the community and strengthen relationships with our partners across the County. We celebrated Paramedic Week 2018 with our annual open house and BBQ and concluded with our staff appreciation awards. During the week staff fundraising initiatives were successful in raising nearly \$4,500.00 which will go towards AEDs to Northumberland communities.



## **Survivor Night**

Northumberland Paramedics responds to approximately 150 cardiac arrests per year. A small percentage of these cardiac arrest calls have the potential for successful resuscitation. Public awareness and education on the “Chain of Survival” has a direct impact on the chance of resuscitation. Once a year we honour and connect cardiac arrest survivors with the Paramedics, community First Responders (Fire, Police), Ambulance Dispatch Officers and public involved in their successful resuscitations. This event brings together community members and allied agencies for an evening of celebration and has become highly appreciated and anticipated by the First Responder agencies we work with every day. This strengthens our positive relationships both on and off duty. This year we are celebrating 12 saved lives through the collaborative efforts of our teams.

## **Exemplary Service Medal**

The Emergency Medical Services Exemplary Service Medal, created on July 7, 1994, recognizes professionals in the provision of pre-hospital emergency care whom have had at least 20 years of exemplary service, ten of which were in a position of risk. This year the County once again submitted to the Chancellery for recognition of three veteran paramedics who are eligible to receive the Emergency Services Exemplary Service Medal. The presentations took place during the 2018 September Ontario Association of Paramedic Chiefs (OAPC) Conference. Additionally, one paramedic is eligible to be honoured for 40 years of Exemplary Service.

## **Organizational Excellence**

### **Collaboration with Hospital Partners**

As one of our largest partners, collaboration with all of the hospitals we transport patients to is an essential part of our operations. Collaboration takes place every day between front line paramedics and hospital staff in order to best care for the patients we take to hospital. On a larger scale, ongoing cooperation and collaboration has resulted in system improvements and efficiencies. Working closely with our hospital partners we have established improvements in our linen retrieval processes (LEAN); coordinated responses to large-scale situations through emergency exercises (Code Silver – Active Shooter safety plan); improved communications between nursing staff and Superintendents to address the deployment challenges surrounding emergent inter-facility patient transfers and process improvements through post-incident reviews. This collaboration is achieved by cultivating and maintaining partnerships with management staff at our local hospitals through our Northumberland Emergency Services Network (NESN) with the goal to improve communication, increase collaboration and better serve our community.



## **Northumberland County Tiered Response Agreement (TRA)**

Northumberland County Paramedic/Fire Tiered Response Agreement has been in place for two years and continues to work well. A Joint Emergency Services Operational Advisory Group (JESOAG) committee of Chiefs was formed to monitor the program and make suggestions for improvement as needed. Northumberland County was the first in the entire region to successfully negotiate a standardized, clinically evidenced TRA with all the seven member municipalities.

## **Post-Traumatic Stress Disorder (PTSD) Prevention Plan**

As a result of the passing of Bill 163, all paramedic service providers were required to submit their PTSD Prevention Plans to the Minister of Labour by April 29, 2017. A comprehensive plan both proactive and reactive was completed and submitted to the Minister of Labour.

Road to Mental readiness (R2MR) training was adopted by Northumberland County. This initiative is a full day course teaching staff about PTSD including warning signs, support methods and resilience strategies. The course was developed at the Mental Health Commission of Canada and was delivered to all paramedics and managers through in-service education. All paramedics were trained in 2017 and all new recruits moving forward receive this same training. This initiative was done in collaboration with the County Health and Safety/Emergency Management Coordinator.

In 2018 discussions and framework began in the development of a "Peer Support Team" for Northumberland Paramedics. This would involve eliciting the services of professionals to interview and select suitable paramedic peers that are interested in becoming peer support contacts. Once a team is selected, they would receive training in this area. This support is in line with legislation and our County PTSD Prevention Plan.

## **Employee Engagement Survey**

Employee Engagement Survey is an opportunity for continuous consultation with staff as to how we are doing and to verify the results collected. All staff had an opportunity to review the collective results and look at areas where we did well and areas identified for improvement. The results of these sessions were then taken back and analyzed for commonalities which were congruent with the original survey results. Three areas were identified and action plans put in place for 2017/2018. It was reassuring to discover that many of the identified areas for improvement had commonalities with the department's strategic plans for 2017/2018.



## **LEAN Initiatives**

The management team, with the support of Corporate Services has achieved LEAN Yellow Belt status. This education day was an excellent opportunity to examine the next step to LEAN concepts and take a more focused look at our operation. We identified through our White Belt training that our medical supplies/laundry was an area for improvement and LEAN concepts were initiated. A primary contributor to our success thus far was the creation of a “Logistics Coordinator.” This eliminated multiple users (Superintendents) in our inventory control and a single contact to liaise with hospital staff and build processes to track laundry for retrieval. Through the 2018 budget year we did appreciate a reduction in waste and a 25% increase in returned Linen from hospital locations across the County.

## **2019 Service Objectives & Initiatives**

### **Economic Innovation & Prosperity**

The objectives for the Paramedic department continue to focus on service delivery. Through call data analysis, quality improvement audits and patient feedback we can measure many aspects of service delivery. From this, benchmarks are set creating Key Performance Indicators that serve to enhance excellence in service delivery. The quality of the service delivered is central to the brand that Paramedics continue to refine.

These Quality Improvement initiatives help to meet what it is that the public expects from its paramedic service. In setting the departmental goals and objectives to meet public expectations, Paramedics will be poised to support *Economic Renewal & Prosperity* by developing a sustainable program that will ensure that people and businesses are confident with the pre-hospital care offered in Northumberland County.

### **Sustainable Infrastructure & Services**

#### **Trent Hills Shared Emergency Services Base – Campbellford**

Campbellford is a busy ambulance station with its strategic location in servicing the Municipality of Trent Hills as well as its role in the County’s critical emergency coverage plan. With the County’s aging demographic and global call volumes increasing each year, the demand on our resources will continue to increase. In order to address the increasing call volumes in Trent Hills, and mitigate the inherent challenges of rural response times, we need to plan for an infrastructure capable of delivering the level of service we expect in Northumberland County. The primary coverage radius of the Campbellford station includes the town of Campbellford,



and the majority of the Municipality of Trent Hills, some 510 km<sup>2</sup>. The Station's proximity provides emergency coverage to the entire north east part of Northumberland County and secondary coverage to Alnwick-Haldimand, Cramahe and Brighton. Agreements between the County and the Municipality of Trent Hills for a shared Emergency Services Facility were finalized in 2018. An RFP for construction was issued and the successful respondent was Taskforce Inc. Plans are currently underway with a completion date of April 2020.

### **Emergency Generator – Port Hope Base**

Northumberland Paramedics is committed to providing the best possible level of service to the community. The purchase and installation of a back-up power generator for the Port Hope Paramedic Station is an opportunity to maintain service levels and emergency paramedic response times in the event of a power outage and increased service demands. During periods of prolonged power outages, the facility would be not able to be occupied and used as an emergency response station. Installing a generator in Port Hope would also bring the facility up to the same standard in regards to back-up power as we have at the other 5 paramedic stations.

- Issue Paper attached

### **Scissor Lift – 600 William Street**

#### **Paramedics**

The department requires significant storage space to maintain an inventory of equipment and supplies. 600 William Street is home to the Cobourg Paramedics Base. It also serves as the department's central storage depot (serving five other Paramedic bases throughout the County).

When the Port Hope Base was constructed (Croft Street), space was set aside for storage, but this space has been, and continues to be used for maintenance of stretchers, which is a legislated activity mandated by the Province.

Some of the equipment kept at 600 William is bulky and/or heavy. Supplies that are regularly delivered include pallets of linens and boxes of uniforms. These items, along with medical equipment, must be stored and easily accessed for use by the Paramedics.

In addition the paramedic department has to rent a scissor lift several times through the year to allow access to our garage door mechanisms. The ceiling is in access of 20 feet high making the





scissor lift the only viable and safe option for maintenance/repair of garage doors, light fixtures, HVAC system, etc.

- Issue Paper Attached

## **Thriving & Inclusive Communities**

### **Public Safety Messaging**

Traditionally paramedic services are in a perpetual state of readiness to react to emergencies. Although this is the foundation of what we do, as health professionals in the community we want to take a more proactive role in public safety and awareness. Our first initiative will be to work with local police/OPP, Fire Departments local Hospitals/health units and County Communications to create a Public Safety Strategy. This will give us the opportunity to educate our citizens in matters such as the dangers of Opioid/other drug overdoses, Acute Coronary Syndrome (ACS), Stroke awareness, First-Aid/CPR/AEDs, fall prevention/injury statistics, etc. It is our hope that through this strategy we can improve the safety, health and well-being of the residents in Northumberland.

### **Survivor Night**

2019 will see our fifth annual Survivor Night. This is a much anticipated and appreciated event that brings together cardiac arrest survivors and the paramedics and community responders who were directly involved in saving them. Cardiac arrests make up approximately 1% of the overall total call volume at Northumberland Paramedics. Of those cardiac arrests that are clinically viable to resuscitation, our save rate is 18%, almost twice the national average. With increased community awareness and training in by-stander CPR and the increased placement of Automated External Defibrillators (AEDs), the elapsed time between a cardiac arrest and an AED at the victim's side is narrowing, meaning those averages will continue to improve. This event also fosters continued excellent working relationships with our emergency partners in the community.

### **Paramedic Week Celebrations**

Every year in May the County recognizes National Paramedic Week. Northumberland Paramedics takes this opportunity to celebrate service to the community and strengthen relationships with our partners across the County. We will celebrate Paramedic Week 2019 with our annual open house and BBQ and concluded with our staff appreciation awards. One such award is the "Community Award" which is given out to those members of the community who get involved in a life-saving intervention prior to paramedic arrival i.e.: CPR, intervening in a



choking emergency, applying an AED to a person in cardiac arrest, etc. This is well received by the community and is a great opportunity to meet with them, share what we do and express our gratitude for their assistance in an emergency.

## **Exemplary Service Medal**

In 2019 the County will once again participate in the recognition of those paramedics recommended for the prestigious award. The Emergency Medical Services Exemplary Service Medal, created on July 7, 1994, recognizes professionals in the provision of pre-hospital emergency care whom have had at least 20 years of exemplary service, ten of which were in a position of risk. The process for recommendation to the Governor General's office is quite lengthy and begins in January of each year. The initial phase is the collection of supporting data (BIO, dates and places of employment, community service, volunteer work, etc.) from the department's Awards Committee. From there the application is reviewed by the director and barring any reason to refute, is passed on the Ontario Association of Paramedic Chief's (OAPC) board for review. On the completion of that process, the application is sent on to the Governor General's Office. Recipients are typically notified in June/July and medals are awarded in the fall.

## **Organizational Excellence**

### **Paramedic Team Leader**

In fall 2016, the paramedic department initiated a brief trial to test the efficacy of a Paramedic Team Leader (PTL) classification. This position would entail training a group of full-time primary or advanced care paramedics in the basic duties of a Superintendent and then deploy a PTL to cover for a short-notice absence from the superintendent team i.e. sick. There are a few positive outcomes in engaging in this program. The first and most obvious is the continuance of a paramedic leader who can respond to the needs of crews in emergencies, health and safety, emergent equipment replenishment, liaise with allied agencies and short-notice sick call scheduling. An additional benefit is the opportunity for the front-line staff to experience and learn the skills and aptitude for a municipal management position. Currently there is a gap in this area and no opportunity to learn these skills until an individual is hired into the position. Additionally, there are no succession opportunities for our internal staff. The trial was a great success operationally and fostered employee growth and engagement.

2018 Union contract negotiation were successful in that we have agreed to do a full 12 month pilot with an hourly stipend while performing the duties of a PTL. We are confident this will be a welcomed opportunity and gratifying experience for our staff.



## **Discontinuance of PT Superintendent Positions – Addition of Full-Time Float**

### Background

Call volumes in Northumberland continue to rise. In 2016 the department deployed 20,989 times and in 2017, 24,240 which is an increase of 15.49%. Previous years we had been experiencing 6-7% increases. The Paramedic department employs both full- and part-time superintendents. These superintendents are certified as Advanced Care or as Primary Care paramedics and form a critical part of the management team. Superintendents carry out administrative functions that are essential to the daily operations of the service and ensure compliance with all aspects of the Ministry of Health legislation. Part-Time Superintendents were recruited in 2010 to address an emergent gap in maintaining 24/7 Superintendent staffing in the County. At that time, there were only four FT shift managers and no contingency to cover unplanned absence or vacation. The department attempted to bridge gaps however that meant costly overtime, on-call pay and occasionally, simply was unable to grant time off. As a stop-gap measure, an issue paper was submitted and approved for the recruitment of 6 PT Superintendents. This initiative had a marked positive impact with the ability to grant earned time off however, the unplanned absences remained a challenge. Recruitment of qualified, experienced paramedics for a PT management position meant that we were hiring individuals that had full-time jobs in EMS and had to share their time off with Northumberland. In an effort to address the concerns noted above, the 2016 Business Plan included an issue paper for a FT Float. This was approved and implemented in Q1 of that year. This brought the Superintendent compliment to five (5) FT and six (6) PT. Recently 3 of the 6 part-time have resigned due to inability to be available for shifts and a 3<sup>rd</sup> is off on a long-term illness. This leaves 2 PT superintendents to cover off unplanned absences. In 2017 there were 3450 hours covered by Part-Time Superintendents.

The department is proposing the cessation of PT Superintendent Recruitment and elimination of the remaining PT through attrition. In place we are presenting an Issue Paper for the addition of one (1) FT Float position bringing the FT compliment to six (6). The remaining part-time staff along with the PTL compliment will be adequate to cover off unscheduled vacancies moving forward. This should be a “cost neutral” initiative.

- Issue Paper attached

### **Paramedic FT Float positions**

The Paramedic department is seeking approval to alter the organizational chart for paramedics to include the addition of four full-time floats. This would involve succession from the part-time compliment which will alter the approved 52 full-time 52 part-time to 56 full-time and 48



part-time. This may require a Memorandum of Understanding with the bargaining unit in the interest of employee relations as it is a change in past practice.

Historically, when a full time employee requests, or requires time off they are back filled by a part time paramedic. The reasons for time off can vary such as; vacation, STAT time, banked time, training, sick, WSIB, Leave of Absences (LOA's) maternity, educational leaves etc... Therefore, ensuring 24/7 coverage given the various time off can present serious challenges and staff scheduling hours. The equal and fair distribution of shift assignments to the PT paramedics is outlined in the Collective Agreement and can be time consuming for the scheduler attempting to coordinate availability to fill vacancies.

In 2017 there were 33,182 hours that were scheduled and backfilled by PT Paramedics. In the first half of 2018 we have covered 15,516 hours which is on course for a similar outcome to 2017.

The introduction of Full Time Float positions will also assist us in the retention of committed staff that ends up moving to larger municipalities for full-time opportunities. This has a collateral effect of the need to recruit 8-10 PT/year at a cost of approximately \$6,700.00 per new employee.

- Issue Paper attached

### **Call Data Analytics – Big Data**

Northumberland County Paramedic Service has the opportunity to reduce risk and reallocate time and resources by converting to an electronic Patient Care Reporting (ePCR) system which will more closely resemble the paramedic practice in Northumberland County. In fall of 2018 the paramedic department will be migrating our hosted data (currently with ZOLL Canada), to Interdev solutions, an Ontario ePCR model designed around Ontario legislation. This product has a very robust back-end for quality assurance and monitoring, workflow for critiques or question to the paramedic and back, built-in forms with automatic distribution to the MOHLTC Field Office when indicated, real-time dashboard with data analytics to monitor KPIs, and many other features.

The County will benefit from heightened transparency regarding Paramedic department performance, timely reports of response times by municipality, expedient access to queries on Paramedic call data, mitigation of privacy exposure, minimization of clinical protocol variances, and a significant reduction in labour associated with ePCRs.

Northumberland County Paramedic Service should rely heavily on its electronic Patient Care Reporting System (ePCR) in order to:

- Reduce time spent auditing patient care reports
- Have a real time dashboard of key performance indicators and statistical data drawing from patient reports and Ministry Ambulance Dispatch Reporting System (ADRS)
- Manage risk associated with non-compliance of clinical protocol
- Deliver legislated response time reports to the MOHLTC
- Generate reports on system performance for planning exercises
- Handle the digital screening and transmitting of Incident reports to the MOHLTC Field Office as per the Documentation Standard
- eliminate privacy issues associated with handling patient data
- Monitor and maintain the system
- Provide consultation and collaboration

## Long Term Plan & Strategic Objectives

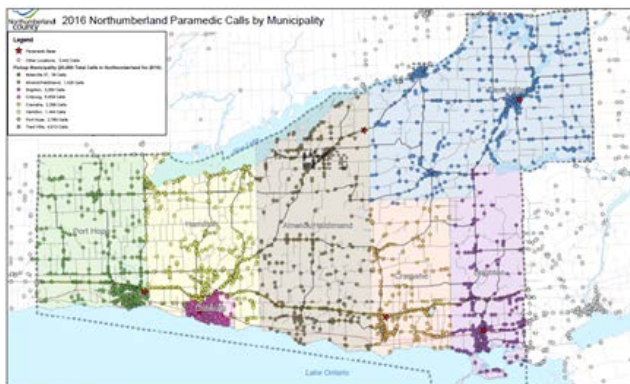
### Economic Innovation & Prosperity

We will continue to improve the public image of the paramedic department as part of the broader health-care framework in our communities and as such, will support Economic prosperity by making Northumberland County a more attractive place to live and work. The department is undertaking measures to increase our visibility outside of reacting to emergencies. In 2019 we plan to have a larger proactive presence in the community through public safety messaging, support/access to resuscitation education and improved digital information i.e. County website.

### Sustainable Infrastructure & Services

#### Call Volumes

The following two maps indicate calls by municipality in Northumberland over two years. This data assists the department to optimize base locations compared to call volumes and assess the need for enhancement.



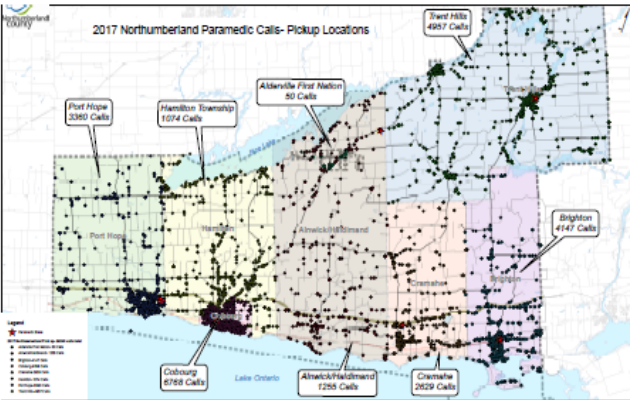
#### 2016 Call Volume - 20,989

Statistically, call volumes are rising between 6 and 7 percent each year although the department did experience a large jump from 2016 [20,989 responses] to 2017 [24,240 responses], an increase of 15.49%.

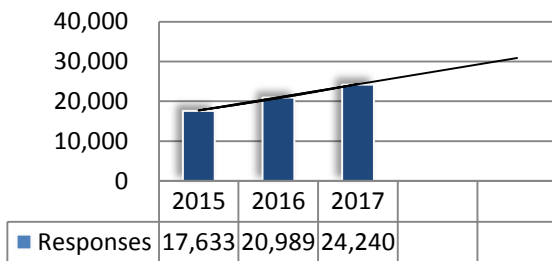
Northumberland Paramedics is monitoring these trends along with station locations and vehicle deployment plans.

**2017 Call Volume – 24,240**

If trends continue in the manner of the previous 5 years, the department anticipated the need to address longer response times to rural areas of the County. One such strategy may include Emergency Response Vehicle deployment. The department will have MOH ADRS call data in Q1 of 2019 for 2018 and a trend analysis will be completed. The 2019 Business Plan includes an issue paper requesting a six month trial of an ERV response unit (existing staff and resources). The deployment will be 12 hours a day 7 days a week over the peak population months, May 1, to October 31, 2019 if approved.



**Ambulance Responses**



**Station Replacement Schedule**

2018-2020 will see the completion of both Roseneath and Campbellford stations in a shared emergency services facility with the respective municipal fire departments. This will leave the Brighton facility as the only remaining station within the County due to be replaced. The department anticipates a similar collaboration with Brighton and will look to begin discussions with that member municipality in 2019/20 in hopes to solidify a plan for 2021.

**Cardiac Monitor/Defibrillator Replacement Schedule - 2020**

Defibrillators are critical in that their use can literally allow the heart to re-start in the instance of cardiac arrest by eliminating lethal dysrhythmias. As the care paramedics provide has evolved, so too has the need for more diagnostic information upon which to base critical patient care decisions. Because of the critical nature of the cardiac monitor/defibrillator to the patient care that paramedics provide, we cannot risk equipment failures. This risk aversion means that defibrillators must be regularly maintained in top form and that defibrillators also have a strict life-cycle. Regular maintenance is performed on all Northumberland Paramedics' defibrillators; however, as defibrillators age, they require more repair and more frequent maintenance.

As cardiac monitor/defibrillators are used on every ambulance call and are subject to extreme conditions under which paramedics operate, the life-cycle of defibrillators should not exceed five (5) years. Given the life-cycle of the defibrillator fleet, defibrillators form part of the County's long-term capital replacement strategy. The inclusion of defibrillators in this strategy



means that regular replacement of the fleet is planned and budgeted for through reserve allocations each year. Cardiac Monitor/Defibrillators are scheduled to be replaced in 2020. The department will begin the RFP process in the 2019 budget year in preparation.

## **Thriving & Inclusive Communities**

### **Community Paramedicine**

Although community paramedicine is referenced throughout this document, It is important to leave in the strategic objectives. Community Paramedic Programs have been evolving across Ontario over the last decade. Initially implemented in large urban centers such as Toronto, the focus was primarily on targeting those patients that are repeatedly visiting the ER due to gaps in community care or access to that care because of geographic or socioeconomic barriers. These programs and specifically Toronto, found a decrease in repeat ER visits from this demographic by 80%. A direct impact to decreasing congestion in the ER is ambulance off-load times and therefore vehicle deployment. More importantly, are there gaps in community care that are appropriate to be addressed by the paramedic department without duplicated existing services? We believe in the next 5-10 years, community paramedicine programs will be as common-place in Ontario municipalities as they are in the US and other Canadian provinces.

Besides connecting frequent emergency system users with appropriate primary care services, an effective Community Paramedic Program will focus on fall and injury prevention (through home-safety inspections), expanded resources for mental health and substance abuse clients, and improved disease management for patients with diabetes, congestive heart failure, and chronic respiratory conditions therefore improving health outcomes among those considered medically most vulnerable. In addition, save healthcare dollars by preventing unnecessary ambulance transports, emergency room visits and inpatient hospitalizations.

A key theme in a community paramedicine program is overcoming geographic and transportation challenges through outreach and home visits to meet the needs of residents who are facing these barriers due to socioeconomic circumstances or in county locations where primary care providers and public transportation resources are scarce.

The program's success will be contributed to the strong web of local connections with social services, local LHIN, hospitals, primary care providers, elder services, family healthcare teams, mental health providers, substance abuse specialists, pharmacists, dietitians, and Social Services.



## **Organizational Excellence**

### **Paramedic Float Positions - Retaining Paramedics in Northumberland**

Northumberland Paramedics is committed to providing the best possible level of service through innovation and excellence to the community. As an employer that is particularly interested in organizational excellence, sustainability of our services, being supportive to our community and especially attracting, developing and retaining our employees it is imperative that we invest in our staff of paramedics. In our continued efforts to staff advanced care paramedics in each municipality, opportunities for full-time primary paramedic positions come slowly compared to the GTA and other much larger services. Paramedics are investing in Northumberland in part-time positions with the hope that full-time will be forthcoming. An unfortunate reality is opportunities are more frequent in larger services and quality staff often resign to accept these secure full-time positions. In an effort to support employee retention and explore LEAN concepts in the department, we are proposing a lateral organization shift in the part-time vs full-time staff ratios. Annually we see an average of 30,000 hours of back-fill for planned and unplanned vacancies normally staffed with part-time. With the creation of 4 full-time float positions we will realize several positive outcomes in the department from succession, engagement, efficiency in scheduling planned and short-notice vacancies as well as fiscal efficiency as our part-time recruitment will be reduced.

- Issue paper attached



## 2019 Issue Paper

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### Full-Time Paramedic Float Positions (4)

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#### **Purpose**

The Paramedic department is seeking approval to alter the organizational chart for paramedics to include the addition of four full-time floats. This would involve succession from the part-time compliment which will alter the approved 52 full-time 52 part-time to 56 full-time and 48 part-time. The paramedic department is challenged with retaining committed paramedic staff due to a lack of opportunity for full-time compared to larger centres. Further as we build our advanced care compliment, the succession of part-time primary care paramedics to full-time will be further limited to attrition.

#### **Background**

Historically, when a full time paramedic requests, or requires time off, they are back filled by a part time paramedic. The reasons for time off can vary including; vacation, STAT time, banked over-time, training, sick, WSIB, Leave of Absences (LOA's) maternity, educational leaves etc... Therefore ensuring 24/7 coverage given the various time off keeps the scheduler working at capacity. The equal and fair distribution of shift assignments to the part-time paramedics is outlined in the Collective Agreement.

In 2017 there were 33,182 hours that were scheduled and backfilled by part-time Paramedics. By the end of Q2 2018 we had covered 15,516 hours which is on course for a similar annual total. A full time paramedic works 2,184 hours a year, so in 2017 the 33,182 hours represents 15.1 Full Time Equivalent (FTE).

In the interest of efficiency, sustainability and staff retention, we are proposing that a portion of the part-time hours be replaced with full-time float positions, to be used in locations when and where our staffing needs demand.

To begin conservatively, a full time float would be assigned to each shift (days/nights) of the two (2) platoons. To accomplish this, four (4) full time floats would be hired from within our existing part time compliment. It is acknowledged that these positions will be assigned to both planned and unplanned absences. It is rare that the floats are not utilized as planned based on consultations with other services who have adopted this staffing approach.



The following are some of the benefits to float positions:

- Flexibility to cover planned and unplanned vacancies
- Flexibility to replace staff in long term absences
- Financial savings in addition to those noted below for uniforms, training, and recruitment
- Reduction in full-time overtime hours due to part-time unavailability
- Reduction of part-time scheduling hours

The introduction of Full Time Float positions will also assist us with retention of staff that is committed to Northumberland but end up moving to larger municipalities for full-time opportunities. This has a collateral effect of the need to recruit 8-10 part-time annually to replace the staff lost through attrition or resignation. Recruitment costs are approximately \$6,799.29 not including Corporate Services incurred costs such as staff hours, advertising, etc. Average annual recruitment/Orientation - 10 new part-time paramedics x \$6,799.29 equates to a cost of \$67,922.90.

\*Statistically, the paramedic department receives approximately 400 applications per year.

## Consultation/Options

Northumberland Paramedics has consulted two Paramedic Services who utilize full-time floats as part of their staffing strategy. (Hastings-Quinte Paramedic Service and Frontenac Paramedic Services – Council Report for paramedic float positions, 2005/2010). Both have realized advantages by having Full-Time float positions.

\*Statistical data provided in this issue paper was extrapolated from Jacobs - Time Manager Scheduling software.

### Option 1: Status Quo

This model has been utilized by Northumberland Paramedics from the time the service was downloaded to the County. While this model generally works, it does not afford the service the benefits described in the *Background* section. By remaining at status quo, we anticipate continued challenges and costs associated with backfill of full time absences, continual paramedic recruitment due to regular departures of our part time compliment, overtime incurred when full time paramedics are used to fill absences.

### Option 2: Institute a FT Float position model



This is the recommended option. We anticipate no increase in costs as described in the financial impact section below. Having 4 float positions will allow us to prepare better for planned as well as unplanned absences, improve staff morale (increased FT compliment) and provide more flexibility with the scheduling and deployment of staff.

## Financial Impact

-	Part Time PCP	Full Time PCP
Biweekly Hours	84	84
Hourly Wage Inclusive of Benefits	\$50.55 - \$52.34 (benefit range 6-12% +/- OMERS)	\$49.77
Annual Burden	\$110,401.20 - \$114,310.56	\$108,697.68
New Hire Orientation	\$6,799.29	Not applicable
Levy Impact (50% cost share with MOH)	\$58,600.25 - \$60,554.93	\$54,348.84

Levy Savings:

- \$851.76 - \$2,806.44 annually
- \$3,399.65 one-time

## Risk Considerations

None

## Impacts to Member Municipalities/Partners

Having a full-time contingency in place for planned and unplanned absences will significantly increase our capacity to maintain uninterrupted ambulance deployment, increase succession opportunities, increase engagement and retention of quality staff and support our mandate of clinical excellence in the care we provide to our Northumberland communities.

## Included in 2018 Long Term Plan: YES/NO

No, conceptualized through conversation and consultation with County officials regarding staff retention/succession planning.

## 2019 Issue Paper

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### Scissor Lift - 600 William Street, Cobourg

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#### Purpose

To request that Council approve the purchase of a scissor lift for 600 William Street, Cobourg. It is required to ensure safe access for the purpose of Paramedic supplies and equipment and County records that are housed on the upper level at 600 William Street. The upper level storage area is used by: Paramedics, Records Management, and Facilities.

#### Background

The County has a shortage of adequate and accessible storage space.

##### Paramedics

The department requires significant storage space to maintain an inventory of equipment and supplies. 600 William Street is home to the Cobourg Paramedics Base. It also serves as the department's central storage depot (serving five other Paramedic bases throughout the County).

When the Port Hope Base was constructed (Croft Street), space was set aside for storage, but this space has been, and continues to be used for maintenance of stretchers, which is a legislated activity mandated by the Province.

Some of the equipment kept at 600 William is bulky and/or heavy. Supplies that are regularly delivered include pallets of linens and boxes of uniforms. These items, along with medical equipment, must be stored and easily accessed for use by the Paramedics.

##### Records Management

Under the Ontario Municipal Act, the County is required to retain and preserve records in a secure and accessible manner and adhere to legislated retention periods and destruction protocol. The Records Management division provides a standard for the retention, storage and final disposition of records as required by applicable legislation and to the extent necessary for operational, regulatory, and fiscal purposes.



The County currently stores approximately 700 boxes of active and inactive documents at Iron Mountain, a third party storage provider, in Concord, Ontario. There is an annual fee for this storage, as well as fees to access and transport the records to and from the storage facility.

A compact shelving project was approved in the 2017 Budget to provide space for over 800 bankers' boxes to be stored in-house, on the upper level of 600 William Street. The shelving will be installed by the fall of 2018. The shelving design will allow it be relocated in the future, should the need arise.

## Facilities

The Facilities Department is responsible for all County buildings, including social housing properties. Facilities staff requires a storage area for a variety of tools, machinery, and furniture. They also require a work area.

## Past and Current access to upper level

In the past, staff carried items up the staircases from the main level to the upper level. This was dangerous given that many items were heavy and/or bulky.

Currently, a fork lift from the Food 4 All Warehouse is borrowed on occasion, when supplies, equipment and records need to be moved to or retrieved from the upper level area of 600 William Street. The fork lift is not an ideal device for this purpose, in terms of the safety risks.

## Consultation/Options

Several options were investigated, including:

- A. Maintain the status quo,
- B. Construct a full lift within 600 William Street,
- C. Construct a dedicated stand-alone storage shed on the 600 William property,
- D. Purchase a scissor lift.

### Option A Maintain the Status Quo – Not Recommended

- It was clear that continued use of the fork lift was not a viable option, due to health and safety concerns and liability risks.

### Option B Construct a Full Lift – Not Recommended

- Expensive – estimated price \$250,000
- Stationary / not transferrable to another location



**Option C Construct a Storage Shed – Not Recommended**

- Extremely expensive - \$350,000 estimated for a 60' X 100" heated, metal shed, built on-grade on a concrete slab
- Stationary / not easily transferrable to another location

**Option D Purchase a Scissor Lift - Recommend**

- Cost effective – estimated cost \$57,630
- Can be easily re-located to another County site, should the need arise
- The County currently rents a scissor lift multiple times each year to perform maintenance work at 600 William Street (for the Paramedics Base, and related to general Facilities work). Maintenance work done at heights includes: HVAC repairs, lighting replacement, electrical, and garage door repairs and maintenance. Purchase of a scissor lift would negate the need to rent this piece of equipment, thereby reducing costs.

Staff met with individuals from Records Management, Health & Safety, Paramedics, Facilities and Purchasing to review the use of the upper level at 600 William, the health & safety considerations, and options that would address the needs of the various departments that access the area.

## **Financial Impact**

\$57,630 is the estimated cost of a scissor lift (based on a similar equipment purchase in 2017 for the County's MRF). The Paramedics Department budget would fund the equipment based on their usage, as they will utilize it the majority of the time. Funding will come from a combination of existing capital reserve and operating budget.

Estimated costs for safety enhancements on the upper level will be determined, including a plate that will cover the gap between the lift and the upper level floor, and fall protection equipment (e.g. a harness) for lift users; these will be reasonable and can be incorporated within the overall Paramedics' budget.



MOHLTC 50% funding amortized over the life of the capital (10 years)

Year	Funding	Amortization
2019	57,630.00	0
2020	0	1440.75
2021	0	2881.50
2022	0	2881.50
2023	0	2881.50
2024	0	2881.50
2025	0	2881.50
2026	0	2881.50
2027	0	2881.50
2028	0	2881.50
2029	0	2881.50
2030	0	1440.75
.	Total	28,815.00

Initial and ongoing safety training costs will be determined (based on number of users of the equipment), and absorbed within the Health & Safety/Emergency Planning 2019 and long-term budgets.

There is a cost for ongoing maintenance of the lift, and this will be absorbed within the Paramedics and/or Facilities budget(s).

## Risk Considerations

Safety and liability issues must be considered. Risks exist if staff continues to use only the fork lift to move, store and retrieve supplies, equipment, and records from the upper level of 600 William Street.

Safety training for all staff who use the Scissor Lift and/or who work in the vicinity of it will be mandatory. The County's Health & Safety staff will provide appropriate training and follow ups, and post safety guidelines on site.

## Impacts to Member Municipalities/Partners

No anticipated impacts to member municipalities or community partners.



## **Included in 2018 Long Term Plan: No**

A lift was not included in the 2018 Long Term Plan, as the current methods of accessing the upper level of 600 William were thought to be adequate.



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## 2019 Issue Paper

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### Full-Time Superintendent Float Position

#### **Purpose**

The department is proposing the cessation of Part-Time (PT) Superintendent Recruitment and elimination of the remaining PT through attrition. In place, we are presenting this Issue Paper for the addition of one (1) Full-Time (FT) Float position bringing the FT compliment to six (6). The remaining Part-time staff along with the Paramedic Team Leaders (PTLs) once established will be adequate to cover off remaining planned and unplanned absences moving forward.

#### **Background**

Call volumes in Northumberland continue to rise. In 2016 the department deployed 20,989 times and in 2017, 24,240 which is an increase of 15.49%. Previous years we had been experiencing 6-7% increases. The Paramedic department employs both full and part-time superintendents. These superintendents are trained either as Advanced Care or as Primary Care paramedics and form a critical part of the management team. Superintendents carry out administrative functions that are essential to the daily operations of the service and ensure compliance on a minute-by-minute basis with all aspects of the Ambulance Act and Ministry of Health and Long Term Care requirements for the operation of land ambulances.

Part-Time Superintendents were recruited in 2010 to address an emergent gap in maintaining 24/7 Superintendent staffing in the County. At that time there were only four FT shift superintendents and no contingency to cover unplanned absence or vacation. The department attempted to bridge gaps however that meant costly overtime, on-call pay and occasionally, simply was unable to grant time off. As a stop-gap measure, an issue paper was submitted and approved for the recruitment of 6 Part-Time Superintendents. This initiative had a marked positive impact with the ability to grant earned time off and improved morale in the superintendents group however the unplanned absences remained a challenge. Recruitment of qualified, experienced paramedics for a PT management position meant that we hired staff working in full-time jobs in EMS services and had to share their time off with Northumberland. In addition, these Part Time Superintendent opportunities were not accessible to our own staff members, as it's difficult for someone with the desire to gain management experience to do so by leaving a full time position to take on a part time position.



In an effort to address the concerns noted above, the 2016 Business Plan included an issue paper for a FT Float. This was approved and implemented in Q1 of that year. This brought the Superintendent compliment to five (5) FT and six (6) PT. Recently 3 of the 6 PT have resigned due to inability to be available for shifts and a 3<sup>rd</sup> is off on a long-term illness. This leaves 2 PT superintendents to cover off planned and unplanned absences. In 2017 there were 3076 hours covered by PT and this number is rising as vacation compliments increase. One FTE is 2,184 hours and in pursuant to operational effectiveness and efficiencies, the department recommends the addition of a full-time float and the cessation of part-time superintendent program.

## Consultation/Options

In consultation with comparable sized services, there are a couple different approaches to covering vacation. Hasting County uses a FT Logistics Superintendent to flip into operations when needed as well as PTLs. Frontenac County utilizes 2 FT Float Superintendents and some part-time (they do not have a PTL program). This initiative will likely be a cost savings for the paramedic department as it will increase stability and eliminate PT recruitment.

### Option one

Status Quo – Begin recruitment of 3 PT Superintendents

Recruitment for experienced paramedics for manager positions is challenging and expensive. Orientation hours, uniforms and PPE cost approximately \$8,000.00 per person. There are three and possibly four vacancies to be filled which equals \$24,000.00 to \$32,000.00. Continuance of the part-time manager program and its inherent challenges does not seem efficient or sustainable as we continue in LEAN concepts.

### Option two

- Discontinue the Part-time Superintendent program and replace with an additional Full-time Float Superintendent.

Preferred option - The Paramedic department, with its current staffing levels, is vulnerable in the event that a Superintendent is absent for a prolonged period of time. We currently do not have a contingency beyond our part-time superintendents and chiefs to maintain 24/7, 365 day per year on-site superintendent coverage. Superintendents require clinical competency, supervisory competency and experience within the industry. As a result of these core competency requirements, part-time superintendents – unlike many front-line paramedics –



have full-time career positions with other paramedic services. This leaves part-time superintendents with a significantly limited availability during days off from their primary, full-time employment. This aspect has made it difficult to ensure adequate availability from part-time superintendents.

## Financial Impact

Cost neutral to cost savings – The department is not adding any additional staffing hours, simply reorganizing the hours available to part-time and allocating to a full-time position.

	Option 1 Part Time Superintendent (4)	Option 2 Full Time Superintendent
Biweekly Hours	84	84
Hourly Wage Inclusive of Benefits	\$52.77 – \$57.08 (benefit range 10-19% +/- OMERS)	\$60.92
Annual Burden	\$115,249.68 - \$124,662.72	\$133,049.28
New Hire Orientation	\$27,197.16	\$6,799.29
Mandatory Training	\$27,618.56	\$6,904.64
Uniform/PPE Issue	\$8,000.00	\$2,000.00
Levy Impact (50% cost share with MOH)	\$89,032.70 - \$93,739.22	\$74,376.61

Levy Savings:  
 \$4,457.16 – 9,163.68 annually  
 \$9,598.93 one-time

## Risk Considerations

By maintaining the status quo, we risk continuing challenges with part time superintendent availability and the potential for not being able to fill shifts in order to provide adequate supervision to front line staff.

## Impacts to Member Municipalities/Partners

Increased capacity for uninterrupted paramedic supervision improves deployment assurance mitigating potential down staffing due to unplanned paramedic absences, hospital off-load delays, emergent medical supply needs, etc.



**Included in 2018 Long Term Plan: YES/NO**

No, this strategy is a result of several resignations and one promotion in this budget year. Also a reflection of continuing challenges with a part-time superintendent program.

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## 2019 Issue Paper

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### Generator – Port Hope Paramedic Station

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#### **Purpose**

Northumberland Paramedics is committed to providing the best possible level of service to the community. The purchase and installation of a back-up power generator for the Port Hope Paramedic Station is an opportunity to maintain service levels and emergency paramedic response times during power outage events, during which we often see increased service demands. In the event of prolonged power outages, the facility would be not able to be occupied and used as an emergency response station. Installing a generator in Port Hope would also bring the facility up to the same standard in regards to back-up power as we have at the other 5 paramedic stations.

#### **Strategic Pillars**

- Sustainability – maintaining levels of service and infrastructure
- Excellence – Reliability of service

#### **Background**

In 2012, Northumberland Paramedics opened the new Port Hope Paramedic Response Station located at 423 Croft Street. During the construction of the facility, all required electrical work, including the required transfer switch installation was completed to allow the facility to be equipped with a back-up power generator. At that time, the generator itself was not installed. Although not installed during construction of the facility, the foresight to equip the facility with all required electrical connections and concrete resting pad for a generator, will serve to make the installation of a generator a quick and efficient process.



## Effects of short term outages

Short term outages, which may last from minutes to hours, have an immediate impact on paramedic service delivery:

- Ambulance bay/garage doors required to be opened and closed manually resulting in increased response times
- Increased time to notify paramedics of calls as the Ministry of Health paging/notification system would not function
- Health and safety concerns arising from decreased lighting/visibility within the facility (emergency lights only)
- Inability to plug in the ambulances and thereby maintain optimum battery levels on the vehicle, computer, monitor/defibrillator
- Inability to recharge communication equipment such as cell phones and portable radios
- Impairment of IT infrastructure and the ability to complete and transmit patient care records to hospitals, as required by legislation

Effects of long term outage would be more pronounced, and would amplify those identified as short term effects.

- Complete loss of the use of the facility which would significantly increase response times as ambulances would need to respond from greater distances
- Logistical challenges relating to storage of vehicles, and access to equipment and supplies
- Staff being displaced from their normal place of work
- Potential costly damage to the facility (ie. frozen pipes in winter)

There are numerous examples of widespread and local power outages which have subjected the Port Hope Paramedic Station to some of the effects noted above. These outages can be caused by supply issues, equipment issues and environmental factors.

- On August 14, 2003 power was interrupted to some 55,000,000 people across the Northeastern United States and Ontario for up to two days.
- More recently, Port Hope's electrical system provider, Veridian, reported that during the April 16, 2018 ice storm, approximately 10,500 of customers in the Veridian service area (which does include more than just the Port Hope area) lost power, many for up to 21 hours.



Paramedic response stations are critical to the delivery of service to the residents of our communities. With a paramedic station out of service due to a power outage, the services we deliver may be compromised, resulting in risk to community members and to the County. Port Hope is the only Paramedic Response Station within Northumberland County that does not have a back-up power generator.

## Consultation/Options

### Option 1: Status Quo

This option will allow Northumberland Paramedics to maintain our current level of service in the event of a power outage, which includes increased response times during short term outages and significant disruption to normal operations during long term outages.

### Option 2: Purchase and install a back-up power generator

This is the recommended option - The addition of a back-up power generator to the Port Hope Paramedic Station will contribute to improved service to the community in the event of a power outage, increase staff safety and security and help ensure critical infrastructure remains operational.

## Financial Impact

The anticipated cost of a new generator is \$50,000 to be funded from existing department capital reserves. This expense will be capitalized over the useful life of the generator, which is approximately 10 years, and will be reimbursed at 50% over that time through the Ministry of Health and Long-Term Care funding formula for land ambulance services.

2019	<b>50,000.00</b>	<b>MOH</b>
2020		1,250.00
2021		2,500.00
2022		2,500.00
2023		2,500.00
2024		2,500.00
2025		2,500.00
2026		2,500.00
2027		2,500.00
2028		2,500.00
2029		2,500.00
2030		1,250.00
-		<b>25,000.00</b>



## **Risk Considerations**

The anticipated risks involve decreased service levels and delayed response times to emergencies in the community. Installing a generator will mitigate these risks in the event of a power failure.

## **Impacts to Member Municipalities/Partners**

Response times and service level maintained in the Municipality of Port Hope during power outage events.

## **Included in 2018 Long Term Plan: YES/NO**

No, consultations took place in 2017 with facilities and the CAO and it was decided to postpone to the 2018 budget cycle for 2019.



## 2019 Issue Paper

### Rural Emergency Response Vehicle (ERV) Study

#### Purpose

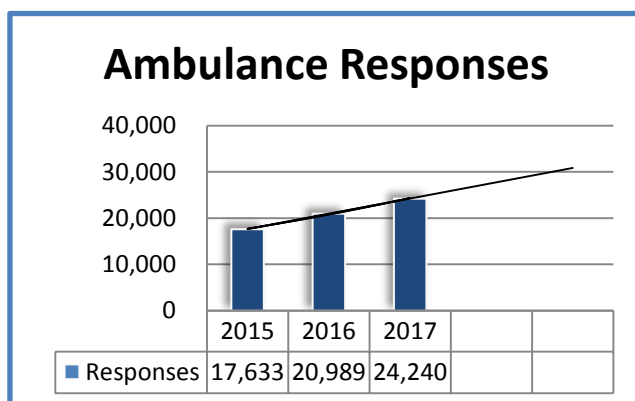
Northumberland Paramedics strives to delivery excellent service to all members of our community, including those who reside in rural settings. Our ambulance deployment plan strategically places ambulances throughout the county with the goal of having timely responses to all requests for emergency service from the residents and visitors of Northumberland. These resources are located in the most populated areas of the county, as the majority of our calls are located in those areas.

To this point, we have worked hard to address response times in all parts of the County. Coverage gaps have been identified in central rural Northumberland.

An Emergency Response Vehicle (ERV) staffed with a single paramedic may help to improve response times to those areas, resulting in the potential to significantly improve time and access to definitive patient care.

Northumberland Paramedics is proposing a six (6) month pilot project in order to study the efficacy of stationing a paramedic resource in an area which would likely result in improved response times in Northumberland County.

#### Background



Call volumes in Northumberland continue to rise. In 2015 to now, there has been double the usual annual increase from 6-7% to 15.49% (2016 to 2017). The increased demand for service directly impacts the availability of ambulances and global response times. GIS mapping of our actual calls shows a gap in coverage in the central areas of Northumberland County. The observed coverage gaps on the GIS mapping is also reflected in actual Ambulance



Dispatch Reporting System (ADRS) data. Northumberland Paramedics is required to set response time targets based on the severity of a patient's condition, and report annually to the Ministry of Health on those response times based on the Canadian Triage Acuity Scale (CTAS).

### Response Time Metrics - Defining the Canadian Triage Acuity Scale (CTAS)

The Canadian Triage and Acuity Scale (CTAS) was first developed for use in Canadian hospital emergency departments (ED) as a tool to help define a patient's need for care. CTAS assists hospital staff to assign a level of acuity for patients based on the presenting complaint and the type and severity of their presenting signs and symptoms. Patients are triaged using CTAS to ensure that they are managed based on their need for care (e.g. sickest patients are seen first).

Shortly after CTAS was implemented in Ontario hospital EDs, CTAS was successfully adapted for use by paramedics in the prehospital environment. One major difference between the hospital use of CTAS and the prehospital use is that in the ED, the CTAS assessment is used as a triage tool while in the prehospital care setting it is used solely as an indicator of acuity. In Ontario, the term Prehospital CTAS will be used to be consistent with the terminology found in current legislation and paramedic practice standards.

CTAS is based on a five-level scale with Level 1 (Resuscitation) representing the "sickest" patients and Level 5 (Non urgent) representing the least ill group of patients. The determination of a CTAS level is achieved by establishing a relationship between a presenting complaint (or chief complaint) and the potential causes of that complaint. CTAS level is determined by the paramedic on-scene and is re-evaluated in transport to hospital. The retrospective data provided in this report looks at CTAS level 2 (which is the bulk of our true emergency calls) for the period of January 1, 2015 through December 31, 2017. Calls are averaged and compared to response time standards on CTAS as reported to the MOHLTC.

### CTAS Level 2 (Emergent)

CTAS 2 is defined as conditions that are a potential threat to life, limb or function requiring rapid medical interventions and the use of condition specific controlled medical acts. These patients have serious illness or injury and have the potential for further deterioration that may then require resuscitation. They need prompt treatment to stabilize developing problems and treat acute conditions. These patients often have had controlled acts applied in the field (i.e. advanced airway procedures, advanced cardiac ECGs – diagnosis – transport to Cath labs, reversal of anaphylaxis, reversal of opioid overdoses, reversal of acute diabetic emergencies, etc.).



In the proposed study, the ERV will target the calls with the highest severity levels, namely CTAS 1 (resuscitation) and 2 (life threat) calls.

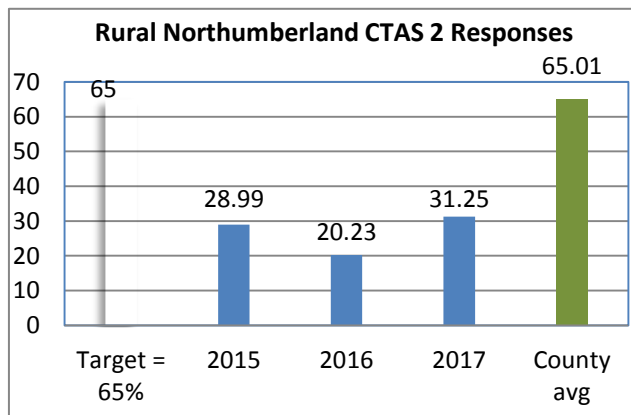
Northumberland Paramedic’s response time target for CTAS 1 and 2 calls are as follows:

- CTAS 1: 8 minutes or less 55% of the time
- CTAS 2: 10 minutes or less 65% of the time

Rural Ambulance Deployment in Ontario

Many counties across Ontario have similar difficulties with servicing the rural areas within their respective boundaries. Many addresses are remote and access is challenging either by geography or road network. Proximity to stations and responses through county road networks are not “as the crow flies” and therefore add valuable minutes onto response times. In an effort to mitigate these challenges, many urban/rural paramedic services throughout Ontario have implemented Emergency Response Vehicle (ERV) programs. The ERVs are staffed with certified primary or advanced care paramedics and are placed strategically in areas where response times are the greatest. This provides rural communities with access to emergency care sooner and has shown to be very effective in cases that are acute such as cardiac arrest, anaphylaxis (life-threatening allergic reaction), diabetic emergencies, trauma, etc. The ERV paramedic will assess the patient and initiate treatment while awaiting the transport paramedic team.

An additional benefit in ambulance/emergency vehicle deployment occurs when the ERV



paramedic assesses and determines that transport to hospital is not required. In these cases responding ambulances and or Fire Departments can be cancelled returning them to county deployment readiness. As demonstrated by this data chart, rural Northumberland response time targets are difficult to meet. By deploying an ERV staffed by a single paramedic in the heart of these areas, it is anticipated that response times to the highest severity calls will be significantly

decreased. By reducing response times in these areas, the critically sick or injured will receive care sooner and the overall average times will decrease.

While response times are an important Key Performance Indicator, the ultimate goal is to provide the best possible patient care. Reduced response times ultimately results in reduced time to definitive medical care, which has the potential to decrease morbidity and mortality.

## Consultation/Options

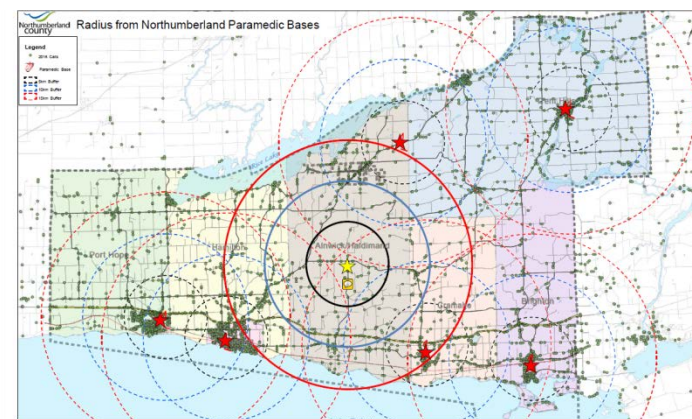
In consultation with other Urban/Rural paramedic services that have been challenged with response times and subsequently instituted an Emergency Response Vehicle (ERV) program have seen improvement in earlier access to rural emergencies and overall response time reductions. (Durham, Peterborough, Kawartha Lakes)

### Option 1

Status Quo – It is very doubtful that response times will improve given our historical data; rising call volumes and hospital off-load challenges. The paramedic department’s mandate is to provide access to emergency service to all citizens in Northumberland County. We are consistently challenged in the rural communities. Additionally, we are unable to assure compliance with legislation regarding response-time commitments.

### Option 2

Initiate a 6 month response vehicle study utilizing existing staff and resources. Deployment would begin in May 2019 and run to the end of October 2019. This will ensure increased capacity to respond to emergencies when populations are at their highest. In 2017 there were



2380 responses to central rural Northumberland. This GIS map with our call volume layer shows responses through the center of Northumberland County. The yellow star is placed at Centreton (Alnwick-Haldimand) and the radiuses are 5, 10, and 15 km. The red stars, also showing 5, 10, 15 km radiuses are placed at existing paramedic bases where the highest volume of calls occurs.



## Financial Impact

The financial impact of the study is the cost to back-fill two positions while those paramedics participate in the proposed study. The ERV and supplies would be supplied from existing resources.

	Neutral		Impact
Full-Time Annual rate	84.34	Part-Time/Hour Rate for back-fill	38.62
Benefits	26,067	In-Lieu 12% - 4.63	43.25
Annual rate	110,413	.	.
X 6 months	55,206.50	X 1092 hours (6 months)	47,229.00

12 hour/day and 7 day/week coverage will require two staff during this trial  
 Total Impact: \$94,458.00

There will be an added expense for fuel and vehicle maintenance as the ERV spends more time on the road.

## Risk Considerations

1. By remaining status quo, we can expect no reduction in response times to those areas of the County. If implemented, the study may find that we have the ability to positively impact response times, and potentially patient outcomes.
2. If the study is undertaken, and deemed successful, the County may be at risk if the program is not continued.
3. Staffing a vehicle with a single paramedic may pose perceived or actual health and safety concerns for the paramedic. These concerns will be addressed prior to and during the study, if approved, in order to ensure the health and wellbeing of our staff.

## Impacts to Member Municipalities/Partners

While this ERV would be a 6 month pilot/trial project, it is anticipated that during the pilot period there will be a reduction in response times to CTAS 1 and 2 calls within the rural areas identified in the project.



**Included in 2018 Long Term Plan: YES/NO**

Yes, discussion only. The department has been watching data to identify trends over the last 5 years.