TOWNSHIP OF SOUTH FRONTENAC
COMMITTEE OF THE WHOLE MEETING
AGENDA

TIME: 7:00 PM,
DATE: Tuesday, March 24, 2015
PLACE: Council Chambers.

1.	*Call to Order*	
2.	*Declaration of pecuniary interest and the general nature thereof*	
3.	*Scheduled Closed Session - N/A*	
4.	****Recess - reconvene at 7:00 p.m. for Open Session*	
5.	*Delegations*	
(a)	Kevin Riley, Utilities Kingston, re: Sydenham Water Plant Operations and Annual Report	3 - 38
(b)	Richard Deacon, Project Manager, Invenergy Canada, re: Solar Proposal	39 - 55
(c)	Scott Gordon, rel South Frontenac Rides	56 - 58
6.	*Reports Requiring Action*	
(a)	Rick Chesebrough, Fire Chief, re: Fire Hall	59 - 156
(b)	Mark Segsworth, Public Works Manager, re: Partially Maintained Roads	157 - 162
(c)	Mark Segsworth, Public Works Manager, re: Solid Waste Collection Contracts.	163 - 167
(d)	Mark Segsworth, Public Works Manager, re: Road Classifications and Minimum Maintenance Standards	168 - 183
(e)	Mark Segsworth, Public Works Manager, re: Facility Signage	184 - 185
(f)	Wayne Orr, Chief Administrative Officer, re: Chain of Office - Final Design	186 - 190
7.	*Reports for Information*	
(a)	Mark Segsworth, Public Works Manager, re: Hartington Property - Remedial Action - Verbal Update	
8.	*Rise & Report*	
(a)	Rideau Valley Conservation Authority	
(b)	Cataraqui Region Conservation Authority	

Utilities Kingston

COUNCILLOR STEWARDSHIP RESPONSIBILITIES IN PUBLIC WATER SUPPLY

BY KEVIN RILEY C.E.T.
Director Water / Wastewater Operations
March 24, 2015

PRESENTATION FORMAT

- OMWA
- HOW DID WE GET HERE?
- O'CONNER'S REPORT
- WHO WAS AT FAULT
- HIS EXPECTATIONS OF COUNCILLORS
- LEGISLATION
- WHERE MIGHT COUNCIL GO FROM HERE

THE ONTARIO MUNICIPAL WATER ASSOCIATION

- The advocate for owners and users of Public Drinking Water Systems.
- Participated in the Walkerton Inquiry
- Contributed to the development of the Safe Drinking Water Act.
- Prepared Handbook for councillors.

STATUTORY STANDARD OF CARE

- How did we get Here?
- Complacency on all fronts not just from Walkerton.

- Province
- Health units
- Municipalities
- Operators
- Customers

O'CONNER'S REPORT

- Lays part of the fault on Commissions/ Councillors.
- Thus He recommended a STATUTORY STANDARD OF CARE for those with oversight responsibility.

O'CONNER'S RECOMMEDATIONS

- THAT THOSE WITH OVERSIGHT RESPONSIBILITY
- Act honestly
- Competently and with integrity
- With a view to ensure the protection and safety of the Municipal drinking water system

O'CONNER'S EXPECTATIONS OF COUNCILLORS

- Being acquainted with Drinking Water Legislation.
- Learning about Drinking Water Safety and Operation.
- Familiarize themselves with their Drinking Water Facilities.
- Familiarize themselves with the experience of senior staff.
- Ask for and receive periodic reports on the operation of the Drinking Water System.

O'CONNER'S EXPECTATIONS OF COUNCILLORS

- Being acquainted with Drinking Water Legislation.
- Learning about Drinking Water Safety and Operation.
- Familiarize themselves with their Drinking Water Facilities.
- Familiarize themselves with the experience of senior staff.
- Ask for and receive periodic reports on the operation of the Drinking Water System.

TO WHOM WILL THE STATUTORY STANDARD OF CARE APPLY

- Certainly councillors and directors of municipal service boards.
- Officers of municipalities such as CAO'S, and clerks.
- Other Municipal officials and senior staff with direct water supply responsibilities.

LEGISLATION

- SAFE DRINKING WATER ACT
- It is the encompassing legislation that allows for regulation of the supply of water to the public.
- Outlines the duties of owners and operating authorities.
- Contains the Ontario Regulations that set the standard for water system operation.

LEGISLATION

- Safe Drinking Water Act Legislation
- Licensing
- Municipalities have to be Licensed to own a Water System.
- They must demonstrate adequate funding.
- They must develop with the operating authority an operational plan that is approved by the province.

LEGISLATION

- SAFE DRINKING WATER ACT REGULATIONS
- Accreditation
- Operating authorities must become accredited through the approval of a written drinking water quality management system encompassing the approved operational plan.

WHERE MIGHT COUNCIL GO FROM HERE?

- Tour water treatment facilities and become acquainted with the processes.
- Keep informed as to the operation of the water systems.
- Continue to endorse and review the annual reports and Management reviews on the Sydenham Drinking Water System.

2014 ANNUAL REPORT ON DRINKING WATER QUALITY

JAN.1 – DEC. 31 2014

SYDENHAM WATER TREATMENT PLANT

Drinking Water System Number: 260069290
Drinking Water System Owner: Township of South Frontenac
Drinking Water System Category: Large Municipal Residential

Drinking Water Quality

Utilities Kingston is proud to present this annual report on drinking water quality. This report has been prepared in accordance to Section 11 of Ontario Regulation 170/03. Regulation 170/03 sets requirements for public waterworks with regard to sampling and testing, levels of treatment, licensing of staff, and notification of authorities and the public about water quality. Free copies of this report and the Summary report prepared in accordance to Schedule 22 of Ontario Regulation 170/03, are available by public request at any City of Kingston offices, at our waterplant locations and at *www.utilitieskingston.com*. Notices of availability are generally made through the local newspapers and radio. Further information on the Drinking Water Regulations can be found on the Ministry of the Environment web site at *www.ene.gov.on.ca*.

For further information about this report contact James Patenaude at *jpatenaude@utilitieskingston.com* , or call 613-546-1181 ex.2525.

Inside This Report

1. Plant Description & Treatment Processes

Raw Water Source.

The source of water treated by this plant is Sydenham Lake. The intake is located 128m east of the treatment plant, at approximately 6m of water depth.

Zebra Mussel Control.

Pre-chlorination takes place at the mouth of the intake. This protects the intake from becoming encrusted with zebra mussels, which would restrict the flow of water through the intake.

Screening.

Two stationary screens located in the low lift pumping well remove any large debris such as weeds, fish, etc.

Low Lift Pumps.

These pumps lift the water from lake level to the main treatment building. There are three submersible pumps each with a capacity of 7.8 l/sec which pump the water into the main building for treatment.

Chemical Feed System

XL1900 (Polyaluminum Chloride) is added to the water as it enters the process building just prior to passing through the in-line mixer. The particles in the water will collide with the PACl particles as the water flows in a spiral motion through the mixer, and then join together to form larger particles called floc.

Filters.

Three pressure filtration tanks containing a ceramic filtration media remove the floc formed from the addition of PACl and the particles present in the water. Water flows through the filters into two baffled clean water reservoirs called clear wells.

Backwash.

Filters are washed to remove the particulates they have collected over the previous 48 hrs. Clean water from the clear well is pumped backwards through the filter, and the filter is agitated by air scouring the filter media to break up any large particles.

Process Waste Management

Effluent water from the backwash process is directed to a backwash storage tank for further settling. The supernatant (the clear water at the top of the tank after settling) is directed back to Sydenham Lake and the settled sludge is mechanically removed and sent for further treatment.

GAC Contactors

During periods of high dissolved organic content in the source water, filter effluent water is directed to two pressure filtration tanks containing granular activated carbon (GAC). The GAC contactors assist in the removal of dissolved organics which react with chlorine to produce chlorination byproducts. The GAC contactors are periodically backwashed to remove the particulates they have collected.

Primary Disinfection

Primary disinfection of the filtered water is achieved via UV light and free chlorine residual. 2 UV reactors (duty/standby) each using 12 low pressure high output lamps, provide the UV light disinfection. Free chlorine disinfection follows the UV process with the use of two chemical metering pumps (duty/standby) which provide sodium hypochlorite to an application point downstream of the UV reactors at the entrance to the detention piping.

Secondary Disinfection

Secondary disinfection is the maintenance of a disinfectant residual throughout the distribution system which is achieved with chloramines. Following the free chlorine disinfection process, ammonium sulphate is added with the use of two chemical metering pumps (duty/standby), at an approximate rate of 4:1 ratio (chlorine/ammonia), to react with the free chlorine residual to form chloramines. The application dosages of sodium hypochlorite and ammonium sulphate is adjusted to produce a sufficient in plant combined chlorine residual to ensure that minimum residuals are maintained in the distribution system.

Clear Wells.

Two baffled clear wells, each with a volume of 115 m^3, provide storage of filtered water and allow for a sufficient amount of chlorine contact time with the water to ensure proper disinfection.

High Lift Pumps.

Three high lift pumps move treated water from the clear wells into the distribution system.

Standby Equipment.

A 130 kW standby diesel generator provides electricity to the water plant during power interruptions. The generator and standby equipment is tested regularly to ensure proper operation when required.

Elevated Tank.

The elevated tank has a storage capacity of 1019 m^3 and provides pressure to the distribution system.

Distribution System.

There are approximately 6363 meters of water mains, and 47 fire hydrants in the system. Once all connections to the distribution system have been completed, the drinking water system will supply water to 274 customer connections.

2. Monetary expenses incurred during this reporting period

Under Section 11 of Ontario Reg. 170/03, a description of any major expenses incurred during this reporting period must be included in the annual report. The major expenses for this drinking water system are listed below.

-Hydrant maintenance and repair, valve maintenance and operation programs were conducted on the distribution system in 2014.

3. Notifications submitted in accordance to the Safe Drinking Water Act

Under Ontario Reg. 170/03, notifications were required for any instances where a sample result indicated that a parameter used to measure water quality exceeded a Maximum Acceptable Concentration (MAC). Once a notification is received from a laboratory or an observation of any other indicator of adverse water quality is made by operations personnel, corrective action as dictated by the regulations is initiated in an effort to confirm the initial result. If confirmed, further action may be recommended by the Medical Officer of Health. If not confirmed sampling will typically return to the normal schedule, or depending on the parameter, Utilities Kingston may choose to increase the sampling frequency to more closely monitor the parameter for a period of time.

There were no events requiring notifications.

4. Definition & Terms

TCU - True Colour Units

mg - milligram

N/A - Not Applicable

N/D - Non -Detectable

NTU - Nephelometric Turbidity Units - A measure of the amount of particles in water.

mg/l - Milligrams per litre. This is a measure of the concentration of a parameter in water, also called parts per million (ppm).

ug/1 - Micrograms per litre, also called parts per billion.

ng/1 - Nanograms per litre, parts per trillion.

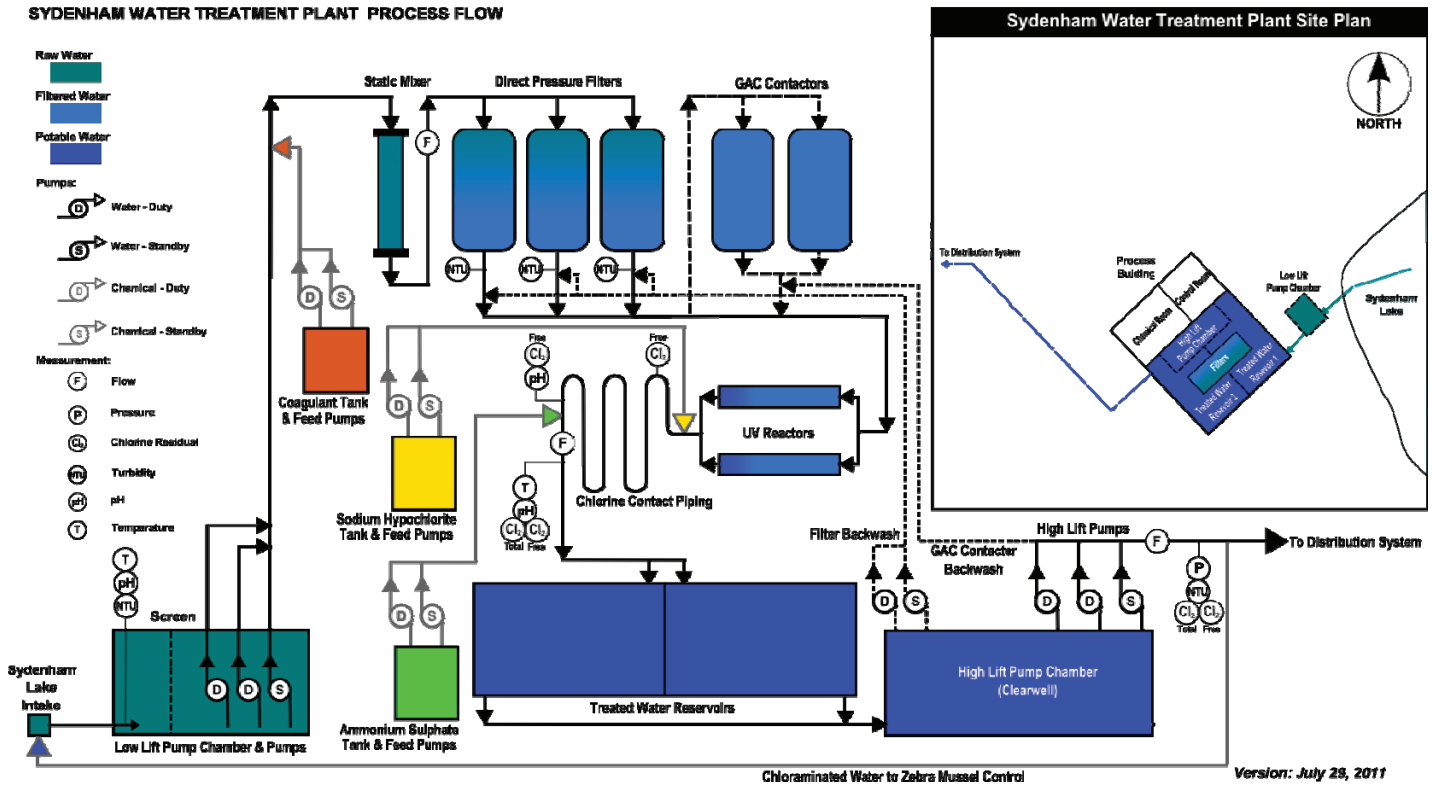
Parameter-A substance that we sample and analyze for in the water.

AO - Aesthetic objective. AOs are not health related, but may affect the taste, odour, colour or clarity of the water

OG - Operational guideline. Set to ensure efficient treatment and distribution of water.

MAC - Maximum Acceptable Concentration. This is a health-related drinking water standard established for contaminants having known or suspected adverse health effects when above a certain concentration. The length of time the MAC can be exceeded without injury to health will depend on the nature and concentration of the parameter.

5. Flow Diagram



6. Water Quality Test Results

Microbiological testing done under schedule 10, 11 or 12 of regulation 170/03, during this reporting period

	MAC (E. Coli & Total Coliforms)	Number of Samples	Range of E. Coli or Fecal Results (min # - max #)	Range of Total Coliform Results (min # - max #)	Number of HPC Samples	Range of HPC Results (min # - max #)
Raw	N/A	52	0 - 12	3 – >200	0	
Treated	*	52	0	0	51	<10 – 20
Distribution System	*	113	0	0	61	<10 – 20

Indicator of adverse water quality if detected

Operational testing done under schedule 7, 8 or 9 of regulation 170/03 during this reporting period

Parameter	MAC	Number of Samples	Range of Results (min # - max #)	Unit of Measure	Parameter Description
Turbidity Raw Water	N/A	Continuous	0.19 – 3.46	NTU	Turbidity is a measure of particles in water.
Turbidity Treated Water	N/A	Continuous	0.02 – 0.623	NTU	Turbidity is a measure of particles in water.
Chloramines Residual Treated	See parameter description	Continuous	1.43 – 2.95	mg/l	Recommended level of at least 1.00 mg/l in distribution system to maintain microbiological quality. 0.25 mg/l minimum.

Turbidity Filter#1	1.0 NTU for >15 min.	Continuous	0.04 – 0.53	NTU	Turbidity is a measure of particles in water.
Turbidity Filter#2	1.0 NTU for >15 min.	Continuous	0.01 – 0.54	NTU	Turbidity is a measure of particles in water.
Turbidity Filter#3	1.0 NTU for >15 min.	Continuous	0.01 – 0.52	NTU	Turbidity is a measure of particles in water.
Chloramines Residual Distribution System	See parameter description	Continuous	0.90 – 2.27	mg/l	Recommended level of at least 1.0 mg/l combined chlorine in distribution system to maintain microbiological quality. 0.25 mg/l combined chlorine minimum.

Summary of raw water testing analyzed by accredited laboratories during this reporting period

Parameter	**MAC**	**Number of Samples**	**Results Range**	**Unit of Measure**	**MAC Exceedance**	**Parameter Description**
Colour	N/A	6	7 – 13	TCU	No	Typically the result of organic matter in surface waters.
Dissolved Organic Carbon	N/A	3	4.2 – 6.5	mg/l	No	Naturally occurring from dissolved organic matter in surface waters.

Summary of additional testing and sampling carried out in accordance with the requirements of the DWWP or MDWL

Sample Location	MAC	Parameter	Number of Samples	Results Average	Unit of Measure	Parameter Description
Backwash Wastewater Effluent	15	Total Suspended Solids	12	9	mg/l	A measure of the particulates collected in the filtration process.

Summary of treated water inorganic parameters tested during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	MAC Exceedance	Parameter Description
Antimony	0.006	1	<0.0001	mg/l	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	0.025	1	0.0004	mg/l	No	Naturally occurring in surface waters / mine drainage
Barium	1.0	1	0.051	mg/l	No	Erosion of natural deposits. Discharge from metal refineries, oil drilling wastes.
Boron	5.0	1	0.025	mg/l	No	Erosion of natural deposits, industrial waste effluents.
Cadmium	0.005	1	<0.00002	mg/l	No	Industrial discharge
Chromium	0.05	1	<0.002	mg/l	No	Industrial residues
Mercury	0.001	1	<0.00002	mg/l	No	Erosion of natural deposits, industrial discharges.

Selenium	0.01	1	<0.001	mg/l	No	Discharge from refineries, mines, chemical manufacture
Sodium	20	2	12.4 – 12.5	mg/l	No	Occurs naturally in the earth's crust.
Uranium	0.02	1	<0.00005	mg/l	No	Erosion of natural deposits.
Fluoride	1.5	1	0.1	mg/l	No	Naturally occurring.
Nitrite	1	7	<0.1	mg/l	No	A natural component of water at this level.
Nitrate	10	7	0.1 – 0.3	mg/l	No	Runoff from fertilizer use, erosion of natural deposits

Summary of treated water organic parameters tested during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	MAC Exceedance	Parameter Description
Alachlor	5	1	<0.3	ug/l	No	Agricultural herbicide
Aldicarb	9	1	<3	ug/l	No	Agricultural insecticide
Aldrin + Dieldrin	0.7	1	<0.02	ug/l	No	Residue from banned insecticide
Atrazine + N-dealkylated metobolites	5	1	<0.5	ug/l	No	Agricultural herbicide
Azinphos-methyl	20	1	<1	ug/l	No	Insecticide
Bendiocarb	40	1	<3	ug/l	No	Insecticide
Benzene	5	1	<0.5	ug/l	No	Discharge from plastics manufacturing, leaking fuel tanks
Benzo(a)pyrene	0.01	1	<0.005	ug/l	No	Formed from the incomplete burning of organic matter.

Bromoxynil	5	1	<0.3	ug/l	No	Agricultural herbicide
Carbaryl	90	1	<3	ug/l	No	Agricultural/Forestry/ Household insecticide
Carbofuran	90	1	<1	ug/l	No	Agricultural insecticide
Carbon Tetrachloride	5	1	<0.2	ug/l	No	Discharge from chemical and industrial activities
Chlordane (Total)	7	1	<0.04	ug/l	No	Residue from banned insecticide
Chlorpyrifos	90	1	<0.5	ug/l	No	Agricultural/ Household insecticide
Cyanazine	10	1	<0.5	ug/l	No	Agricultural/ Residential herbicide
Diazinon	20	1	<1	ug/l	No	Agricultural/ Livestock Operation/ Residential insecticide
Dicamba	120	1	<5	ug/l	No	Agricultural herbicide
1,2-Dichlorobenzene	200	1	<0.1	ug/l	No	Discharge from industrial chemical factories
1,4-Dichlorobenzene	5	1	<0.2	ug/l	No	Discharge from industrial chemical factories
Dichlorodiphenyltrichloroethane (DDT) + metabolites	30	1	<0.1	ug/l	No	Residue from banned insecticide
1,2-Dichloroethane	5	1	<0.1	ug/l	No	Discharge from industrial chemical factories
1,1-Dichloroethylene (vinylidene chloride)	14	1	<0.1	ug/l	No	Discharge from industrial chemical factories
Dichloromethane	50	1	<0.3	ug/l	No	Discharge from pharmaceutical and chemical factories
2-4 Dichlorophenol	900	1	<0.1	ug/l	No	Industrial contamination/ reaction with chlorine

2,4-Dichlorophenoxy acetic acid (2,4-D)	100	1	<5	ug/l	No	Agricultural/ Residential herbicide
Diclofop-methyl	9	1	<0.4	ug/l	No	Agricultural herbicide
Dimethoate	20	1	<1	ug/l	No	Agricultural/ Livestock Operation/ Forestry insecticide
Dinoseb	10	1	<0.5	ug/l	No	Herbicide residue
Diquat	70	1	<5	ug/l	No	Agricultural/ Aquatic herbicide
Diuron	150	1	<5	ug/l	No	Agricultural/ Industrial/ herbicide
Glyphosate	280	1	<25	ug/l	No	Agricultural/Forestry/ Household herbicide
Heptachlor + Heptachlor Epoxide	3	1	<0.1	ug/l	No	Residue from banned insecticide
Lindane (Total)	4	1	<0.1	ug/l	No	Agricultural/ Pharmaceutical insecticide
Malathion	190	1	<5	ug/l	No	Fruit & Vegetable / pest control insecticide
Methoxychlor	900	1	<0.1	ug/l	No	Agricultural/ Livestock Operation/ Residential insecticide
Metolachlor	50	1	<3	ug/l	No	Agricultural herbicide
Metribuzin	80	1	<3	ug/l	No	Agricultural herbicide
Monochlorobenzene	80	1	<0.2	ug/l	No	Discharge from industrial and agricultural chemical factories and dry cleaning facilities
Paraquat	10	1	<1	ug/l	No	Agricultural/ Aquatic herbicide
Parathion	50	1	<3	ug/l	No	Agricultural insecticide
Pentachlorophenol	60	1	<0.1	ug/l	No	Pesticide/ wood preservative residue

Phorate	2	1	<0.3	ug/l	No	Agricultural insecticide
Picloram	190	1	<5	ug/l	No	Industrial herbicide
Polychlorinated Biphenyls(PCB)	3	1	<0.05	ug/l	No	Residue from various industrial uses
Prometryne	1	1	<0.1	ug/l	No	Agricultural herbicide
Simazine	10	1	<0.5	ug/l	No	Agricultural herbicide or its residue
Total Trihalomethanes (NOTE: show latest annual average)	100 (Annual avg.)	1	43	ug/l	No	By-product of chlorination. * The MAC for THMs of 100 ug/l is based on a running annual average.
Temephos	280	1	<0.3	ug/l	No	Insecticide for Mosquito/Black fly control
Terbufos	1	1	<0.2	ug/l	No	Agricultural insecticide
Tetrachloroethylene	30	1	<0.1	ug/l	No	Leaching from PVC pipes; discharge from factories, dry cleaners and auto shops (metal degreaser)
2,3,4,6-Tetrachlorophenol	100	3	<0.1	ug/l	No	Wood preservative
Triallate	230	1	<10	ug/l	No	Agricultural herbicide
Trichloroethylene	5	1	<0.1	ug/l	No	Discharge from metal degreasing sites and other factories
2,4,6-Trichlorophenol	5	1	<0.1	ug/l	No	Pesticide manufacturing
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	280	1	<10	ug/l	No	Industrial herbicide residue
Trifluralin	45	1	<0.5	ug/l	No	Agricultural herbicide

Vinyl Chloride	2	1	<0.2	ug/l	No	Leaching from PVC pipes; discharge from plastics factories

Summary of additional treated water testing analyzed by accredited laboratories during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	MAC Exceedance	Parameter Description
Colour	5	6	<2 – 3	TCU	No	Typically the result of organic matter in surface waters.
Dissolved Organic Carbon	5 AO	3	3.7 – 5.4	mg/l	No	High DOC is an indicator of potential for chlorination by-product problems.

Summary of distribution drinking water organic parameters tested during this reporting period

Parameter	MAC	Number of Samples	Result Value	Unit of Measure	MAC Exceedance	Parameter Descrption
Total Trihalomethanes (NOTE: shows latest annual average)	100 (Annual avg.)	4	35.6	ug/l	No	By-product of chlorination. * The MAC for THMs, at 100 ug/l, is based on a running annual average only using highest test results from each quarter.

Summary of additional distribution drinking water testing analyzed by accredited laboratories during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	Exceedance	Parameter Description
Alkalinity (as $CaCO_3$)	N/A	8	116 - 123	mg/l	No	A measure of the resistance of the water to the effects of acids. Expressed as calcium carbonate.

Summary of raw water testing analyzed by in house laboratory during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	Exceedance	Parameter Description
UV Transmittance	N/A	83	61.6 – 85.2	%	No	**UV transmittance** is a measure of the percentage of transmittance of UV light

Summary of treated water testing analyzed by in house laboratory during this reporting period

Parameter	MAC	Number of Samples	Results Range	Unit of Measure	Exceedance	Parameter Description
Aluminum	0.1	81	0.001 – 0.100	mg/l	No	May be naturally present or a residual from the coagulation process.
Free Ammonia	N/A	102	0.017 – 0.47	mg/l	No	Residual from the addition of Ammonium Sulphate for the secondary disinfection process
UV Transmittance	N/A	83	77.5 – 92.9	%	No	**UV transmittance** is a measure of the percentage of transmittance of UV light

ANNUAL SUMMARY REPORT
2014

SYDENHAM
WATER TREATMENT PLANT

WATERWORKS NUMBER: 260069290

Reporting Period

January 1, 2014 – December 31, 2014

Submitted by:
Jim Keech, P.Eng
President & CEO

Utilities Kingston

ANNUAL SUMMARY REPORT
2014

SYDENHAM WATER TREATMENT PLANT

WATERWORKS NUMBER: 260069290

This annual summary report has been prepared as required under Ontario Reg. 170/03 of the Safe Drinking Water Act to acknowledge compliance with the terms and conditions of the Drinking Water Works Permit (DWWP)and Municipal Drinking Water Licence (MDWL) issued for the Sydenham Water Treatment Plant, to comment on any incidents of non-compliance during the reporting period, to summarize the quantities of the water supplied and to compare the summaries to the rated capacity and flow rates approved in the system's permits and approvals during the reporting period.

This report is specific to the Sydenham Water Treatment Plant (WTP) located at Point Rd. in Sydenham, and its associated distribution system which serves Sydenham's municipal water customers in the village of Sydenham. The WTP and its associated distribution system are owned by the Township of South Frontenac, with Utilities Kingston acting as the operating authority.

Non-Compliance with Terms and Conditions of the DWWP and MDWL

There were no incidents of non-compliance during this reporting period.

Compliance with the Terms and Conditions of the DWWP and MDWL

The Treatment Group of Utilities Kingston, for the Township of South Frontenac, operates and maintains the Sydenham Water Treatment Plant (WTP) and complies with the terms and conditions of the Drinking Water Works Permit (DWWP) and Municipal Drinking Water Licence (MDWL) issued for the WTP. The Underground Infrastructure Department and the Treatment Group of Utilities Kingston operate and maintain the associated distribution system and storage facilities. Staffing is maintained at levels to ensure adequate numbers of trained and licensed personnel are available for proper operations during emergency or upset conditions, vacation/sick relief, or to deal with equipment breakdown.

Quality management systems, contingency plans and operations manuals are established and are located in the appropriate facilities and available to appropriate staff.
A quality management system (QMS) for the Township of South Frontenac's drinking water supply systems has been developed and implemented by Utilities Kingston management and staff to ensure the continued safety and security of the community's drinking water by

meeting or exceeding the requirements of all relevant legislation and regulations, and the Drinking Water Quality Management Standard.
Operations manuals include information necessary for the day to day operations and maintenance of the WTP and distribution system as well as information that may not be regularly used but that might be required to be accessed quickly for various purposes. Contingency plans include information that may be required for proper operation of the WTP or distribution system during emergency or upset conditions, and contain items such as emergency plans and contact lists, alternate materials supply sources and notification lists.

The operations strategy of Utilities Kingston includes: ensuring that permits and approvals are in place, that efficient maintenance and operations ensures the quality of water supplied to its customers meets or exceeds the minimum requirements as set out in the Safe Drinking Water act, and that permissible flow rates are not exceeded. The Township of South Frontenac, as a means of source water protection, considers the impact of decisions made within its authority on the drinking water supply source for the WTP.

Flow measuring devices for measuring the amount of water taken from Sydenham Lake, and the amount of water supplied to the distribution system are calibrated annually by a third party. Accuracy in these measurements ensures that treatment chemicals are precisely applied and that flows do not exceed the capacity at which the WTP is designed to be effective. These flows are recorded to provide current and historical information which is used for operational decision making, and to allow both the public and the Ministry of the Environment (MOE) the ability to review WTP operations.

Water quality analyzers that monitor parameters such as chlorine residual and turbidity of critical process streams and of the water directed to the distribution system are alarm equipped, and are maintained in accordance with the manufacturer's recommendations as well as the conditions of the DWWP and MDWL.

Water sampling is conducted to the minimum requirements of schedule 13 of Ontario Reg. 170/03 of the Safe Drinking water Act. Raw water sampling is conducted to give operational staff information required to determine the level of treatment to make the water potable. In-plant process stream samples provide monitoring of treatment processes. Treated and distribution system sampling provides information regarding the quality of water delivered to customers. All of these samples are analyzed by either licensed staff or by laboratories accredited by the Standards Council of Canada through the Canadian Association for Environmental Analytical Laboratories.

All sampling information, annual reports, and all other documentation required by the DWWP, DWML and regulations are available for public viewing on the Utilities Kingston website as well as at the Utilities Kingston and Township of South Frontenac offices. Residents of the village of Sydenham are encouraged to review this information, the availability of which is advertised through various local media.

Notifications of Adverse Water Quality Results

Under Ontario Reg. 170/03, notifications are required for any instances where a sample result indicates that a parameter used to measure water quality exceeds a Maximum Acceptable Concentration (MAC). Once a notification is received from a laboratory, corrective action as dictated by the regulations is initiated in an effort to confirm the initial result. If confirmed, further action may be recommended by the Medical Officer of Health. If not confirmed, sampling will typically return to the normal schedule or depending on the parameter, Utilities Kingston may choose to increase the sampling frequency to more closely monitor the parameter for a period of time.

There were no events requiring notification during this reporting period.

Summary of the Quantity of Water Supplied During the Reporting Period

Listed in Table 3 following this report are the treated water flows for the Sydenham Water Treatment Plant for the year 2014. The typical Canadian average water usage per person is 300 – 400 litres per day (source: Environment Canada). Once all services to the water distribution system are completed, an accurate calculation of water usage per person for the village of Sydenham can be calculated.

Summary of Flow Rate Exceedances

There were no instances during this reporting period where daily total flows exceeded the maximum allowable flow rate of 1290 m3/d. Listed in Tables 1 & 2 following this report are the raw water flows (water taken from Sydenham Lake) for the Sydenham Water Treatment Plant for the year 2014.

Summary of Treatment Chemicals Used

There are three treatment chemicals in use at this treatment plant. Sodium Hypochlorite is used for primary disinfection, XL1900 (Polyaluminum Chloride) used as the coagulant and Ammonium Sulphate combined with Sodium Hypochlorite to form chloramines for secondary chlorination for the WTP.

Sodium Hypochlorite is dosed at the treatment plant at a rate which ensures that an adequate chlorine Contact Time (CT) value is maintained for the rate of flow. Average chlorine dosages for this treatment plant are approximately 4.50 mg/l. Ammonium Sulphate is added at an approximate rate of 4:1 ratio (chlorine/ammonia) to react with the free chlorine to form chloramines for secondary chlorination. An adequate chloramines residual is

maintained at those points in the distribution system that are farthest from the point of entry of treated water to the system. Residuals are routinely measured in the distribution system and the treatment plant chlorine dosages are adjusted as required to meet the distribution system target residuals and the required CT values.

Typical XL1900 (Polyaluminum Chloride) dosages for this treatment plant were in the range of 6 – 12 mg/l. This dosage is also adjusted to ensure efficiency in the coagulation process as various changes occur in the raw water. Changes are based on things such as pH, temperature, turbidity, and the aluminum residual in the treated water.

Summary

The Sydenham Water treatment Plant supplied water to residents of Sydenham at rates which allowed adequate treatment while not exceeding permitted flows. Water of good quality which is safe to drink was produced by the treatment plant during this reporting period. Further information is available for this system and is included in the annual reports which can be accessed from the Utilities Kingston Website at *www.utilitieskingston.com* or is available at the Township of South Frontenac offices.

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Table 1
Sydenham Water Treatment Plant - **Raw Water Flows** 2013
(Daily total flow)
m3

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1			30	124		73	66	327	225	218	102	291
2					249	243		81	42	223		92
3	220	344	124		293		303			167		1
4	217	17	198	348		353	126		297		510	219
5			177	153		146			198		93	208
6	220	325	146		349		267	345		321		
7	310	27			89		160	341		311	314	
8		33	274	343		357			235	6	127	282
9	481	218	71	131	319	203	307		478			359
10	174			219	40	288	133		14	339		
11	242	310	271	8		56	237	304		70	306	
12	109	20	47		338	263		306	171		292	237
13	301				140	102			24	390		176
14	465	95	221	297			233		63	202	286	
15	158	71	86	291	325	239	233		328		145	
16	273				205	239		372	280	286	7	497
17	210	317		281			297	376		228		37
18	119		371				36		286		281	
19	480	52	129		284	350			213	321	238	283
20		1		314	241	259		331		51		147
21	343	260	315	61			363	147			297	
22	251		69			518	174		321	284	106	290
23	59			308	350	46		308	241	209		92
24	518	192	318	63	180	274	349	174			299	
25		372	85	213		1	134			208	13	
26	284	1							347	141	1	359
27	195		326		357	307		335	195			134
28		412	38	313	218	176	269	209		258	276	
29	251			107			294			149	316	
30	114				297	327		353	274			278
31	201		341		170			2		327		205
Total	6,195	3,067	3,637	3,574	4,444	4,820	3,981	4,311	4,232	4,709	4,009	4,187
Avg. Day Production	258	170	182	210	247	230	221	269	223	224	211	220
Average	200	110	117	119	143	161	128	139	141	152	134	135
Min												
Max	518	412	371	348	357	518	363	376	478	390	510	497

		Yearly Average	**140**	
PTTW Amount	**1,290 *m³/day***	**Average Day Production**	**222**	Yearly Total 51,166
		Yearly Min		
		Yearly Max	**518**	

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Table 2
Sydenham Water Treatment Plant - Peak (**Raw) Flows** 2013
(Peak instantaneous flows during the 24hr period)
Litres per minute

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1			368	384		459	430	459	455	448	376	473
2					470	458		426	422	448		427
3	462	474	478		548		458			473		294
4	427	374	441	478		462	421		462		478	472
5			458	403		450			436		375	460
6	471	474	377		457		459	464		471		
7	439	374			372		432	430		4	473	
8		471	473	477		465			465	442	435	479
9	457	425	371	432	465	432	461		444			429
10	421			466	461	453	425		378	475		
11	466	474	471	374		427	447	461		435	464	
12	423	437	431		469	456		430	461		433	478
13	457				399	431			468	563		434
14	441	470	460	473			464		445	455	460	
15	454	426	436	431	455	465	431		449		439	
16	458				427	423		464	433	476	458	478
17	418	474		456			461	432		435		367
18	464		477				369		463		464	
19	426	466	372		465	461			432	480	432	457
20		320		471	429	426		458		402		426
21	465	459	465	371			466	426			476	
22	424		373			432	429		466	462	438	458
23	460			450	462	372		465	433	433		424
24	428	477	474	373	425	448	457	405			461	
25		434	428	465		366	430			474	453	
26	465	399							466	434	444	466
27	425		473		463	471		461	437			422
28		472	424	458	437	431	467	432		475	477	
29	470			429			431			381	432	
30	426				461	454		470	479			463
31	457		475		427			361		460		431
Max	471	477	478	478	548	471	467	470	479	563	478	479

PTTW Amount 1,344 ***litres/ minu***
or 1,290 ***m^3/day***

Yearly Average
Average Day Production
Yearly Min
Yearly Max **563**

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Table 3
Sydenham Water Treatment Plant - **Treated Water Flows** 2013
(Daily total flow)
m3

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1				58		93		328	219	165	64	287
2					277	214		25		198		52
3	214	327	148		218		297			107		
4	190		165	348		326	83		296		496	224
5			176	109		62			131		46	199
6	234	320	116		367		266	343		319		
7	270				33		63	253		214	320	
8		60	275	335		16			248		77	284
9	461	165	27	101	338	152	333		358			246
10	100		2	212		244	20			342		
11	243	294	283			34	198	265		71	317	
12	116		14		348	242		268	168		217	15
13	286				59	59				337		111
14	359	98	242	310			242			137	283	
15	145	46	45	209	350	239	150		320		109	
16	251				124	176		342	240	236		481
17	133	285		256			294	296		163		
18	121		382						245		286	
19	423	64	79		311	348			123	330	181	282
20				321	146	10		309				100
21	357	232	345	5		23	394	79			291	
22	185					463	66		277	325	56	285
23	75			298	345			336	195	103		52
24	483	223	369	35	119	230	339	86			293	
25		302		190			61			321	70	
26	287								321	48		395
27	11		332		348	303		339	138			45
28		401		319	147	90	240	124		283	288	
29	256			55			246			82	254	
30	52				287	335		304	294			311
31	177		371		108					316		130
Total	5,429	2,817	3,371	3,161	3,925	3,659	3,292	3,697	3,573	4,097	3,648	3,499
Avg. Day Production	226	217	198	198	231	183	206	246	238	216	215	206
Average	175	101	109	105	127	122	106	119	119	132	122	113
Min												
Max	483	401	382	348	367	463	394	343	358	342	496	481

Yearly Average **121**
Average Day Production **214**
Yearly Total 44,168
Yearly Min
Yearly Max **496**

CoA Amount **1,290** ***m^3/day***

Presentation to the Township of South Frontenac
Invenergy Solar Canada ULC

Sydenham, Ontario March 10, 2015

Invenergy

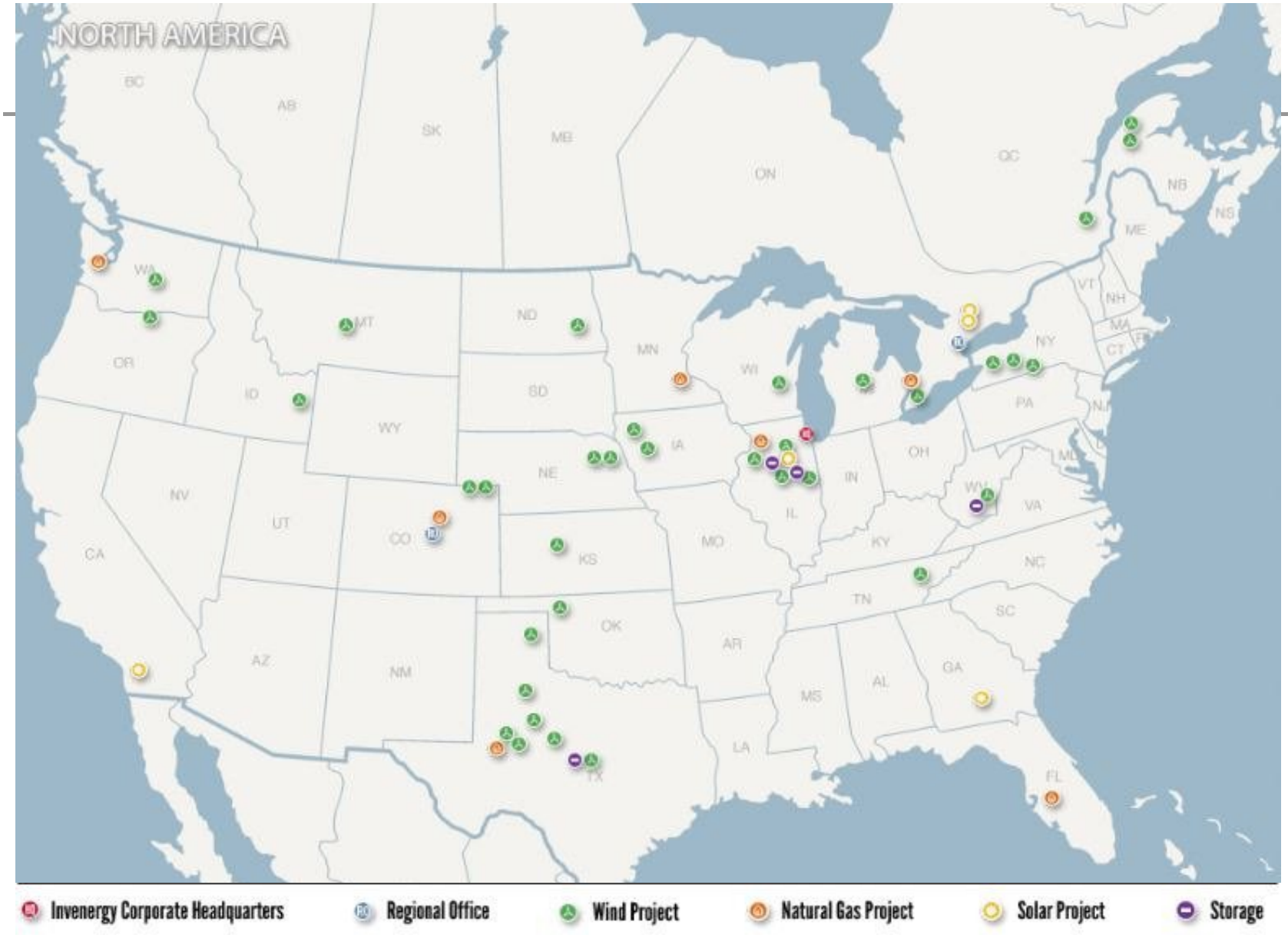
Invenergy

Introduction

- Invenergy Solar Canada - based in Toronto
- Invenergy LLC headquarters in Chicago
- North America's 6th largest renewable energy generation company (its largest independent)
- Developed 9,000MW+ in North America & Europe, including 980+MW in Canada

	Wind	Solar	Natural	Storage	Total
Number of Projects	59	5	7	4	75
Total MW	5,822	49	3,159	65	9,095

Invenergy's North American Facilities



Woodville Solar Energy Center

- 10MW facility located on 100 acres of land near Woodville in the Kawartha Lakes region
- Commissioned in 2013
- Located on class 4-7 agricultural lands

Invenergy

Sandringham Solar Energy Center

- 10MW facility located on 125 acres north east of Argyle in the Kawartha Lakes region
- Commissioned in 2013
- Located on class 4-7 agricultural lands

Invenergy

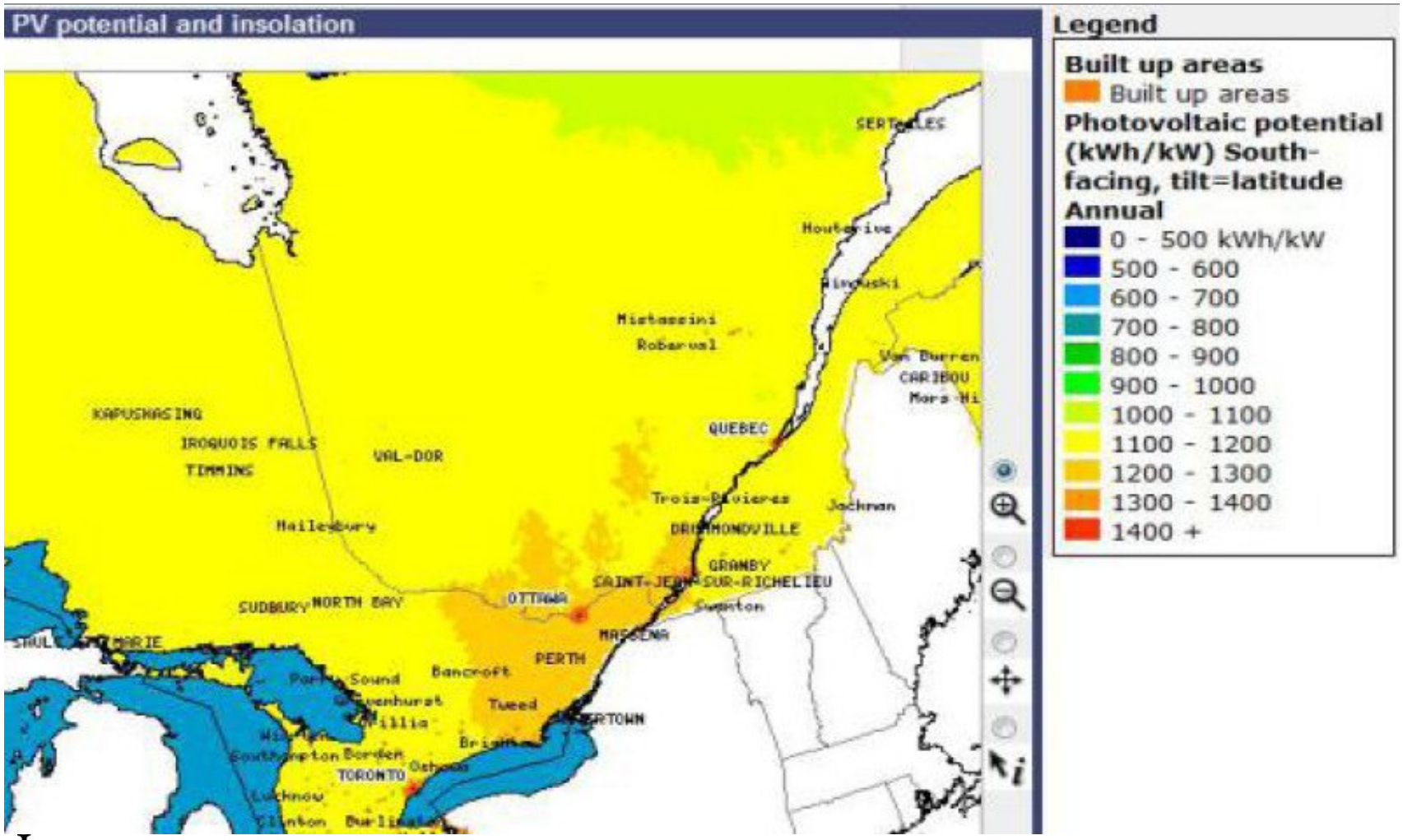
Upcoming opportunity in Ontario

- Independent Electricity System Operator (IESO's) 2015 RFP
  - Invenergy has been pre-qualified to submit bids to IESO's 2015 Large Renewable Procurement (LRP) for new solar generation
  - Invenergy is currently in the early stages of preparing projects for submission

- Key Factors for LRP Success
  - Project location(s) with high photo-voltaic potential
  - Project location(s) with low agricultural potential
  - Available capacity in nearby Hydro One distribution or transmission lines
  - Project support from the host municipality

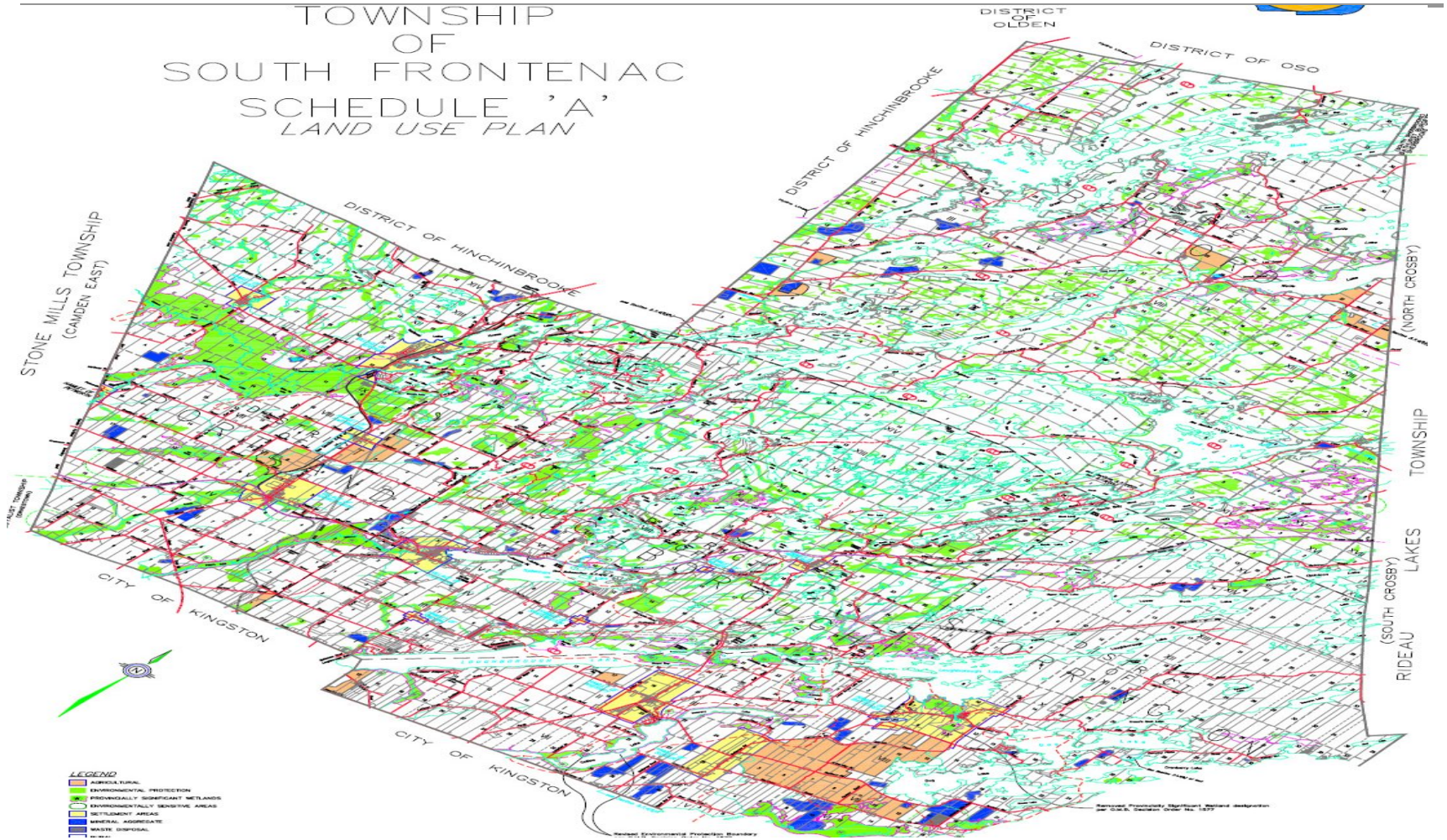
Invenergy

Why we are here tonight, 1



Invenergy

Why we are here tonight, 2



Invenergy

How solar benefits the Township

- If a project is established, local economic activity is spurred during development and construction
- Significant capital expenditures locally during construction including site preparation, materials
- MPAC bases the assessed value of solar-hosting lands on industrial land values in the area
- Municipal tax base is increased with no commensurate increase in its capital infrastructure spending

Invenergy

Comments from owners of land leased to Invenergy for existing solar projects

- *"Invenergy has been a responsible lessee from the get-go. They are responsive to any issues and can be relied upon to keep their word. I would not hesitate to recommend them as a quality developer and operator."* **Larry Korovesis, Sandringham Solar Energy Centre, Argyle, Ontario**

- *"Invenergy has always been reasonable to deal with and their representatives available when needed. I have no regrets concerning my decision to do business with them."* **Ryan Duff, Woodville Solar Energy Centre, Woodville, Ontario**

Invenergy

The Community Benefit Fund (CBF)

- If successful in South Frontenac, Invenergy would establish a CBF with funds directed by local volunteers to community projects and other local good works

- The CBF would be funded annually at the rate of $500/MW of installed generation, ie: a 40MW project would generate annual distributions of $20,000

- What impact can that steady flow of funds have on a community? Here are some examples from our 78MW energy centre south of Chatham, Ontario which has distributed over $150,000 locally since 2011

Invenergy

Opening of Merlin splash pad, summer 2013 (CBF contributed $20,000)

Invenergy

24 Ipads for Merlin Public School, $5,000 contribution from CBF

Invenergy

New 78" lawnmower for Merlin's Kinsmen Park, $15,000 contribution from CBF

Invenergy

CBF annually supports "underground railroad" museum in Buxton, $8,000 to 2014

Invenergy

Our anticipated path forward

- March 2015: introduce company, representatives and our interest in South Frontenac solar development to mayor and council
- March 2015: receive from IESO an updated list of distribution and/or transmission circuits that quantifies capacities for new solar generation
- March 2015: Subject to available capacity (above), begin contacting owners of lands that may be suitable for solar energy equipment using the South Frontenac O-P land use plan as a guide
- April 2015: begin signing land lease agreements with interested South Frontenac landowners
- Summer 2015: hold a public meeting about the project in the municipality
- Summer 2015: receive a Municipal Council Support Resolution from South Frontenac
- Fall 2015: Submit a South Frontenac solar project to IESO's request for proposals for large renewable procurement

Invenergy

Contact information

- **Richard Deacon – Project Manager , Invenergy Solar**
- 905-479-2600
- rdeacon@invenergycanada.com
- **Ryan Ralph - Manager, Business Development, Invenergy Solar**
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- rralph@invenergyllc.com

Invenergy

South Frontenac Rides

Goal:
to promote safe and accessible cycling in South Frontenac Township

South Frontenac Rides Festival

Sunday June 7 – National Bicycling Week,

Loughborough School Parking Lot

- Bike Skills - safety rodeo
- Introduce three cycling routes of varying difficulty in South Frontenac and encourage people to ride them
- BBQ and fun
- Launch a community project to map bike routes in South Frontenac

Possible Partners

KFL+A Public Health Unit,

OPP,

Frontenac County,

Fire Services,

Land of Lakes Tourist Association

The South Frontenac Rides initiative will help build a healthy community, increase tourism, retain young families, and increase active transportation.

STAFF REPORT
FIRE DEPARTMENT

PREPARED FOR COUNCIL: March 18, 2015

AGENDA DATE: March 24, 2015

SUBJECT:

Station 6 (Perth Road) Fire Hall

RECOMMENDATION:

Council is asked to clarify the expectations for the Master Fire Plan, prior to issuing the RFP for this project.

BACKGROUND:

Council commissioned a study in 2008 to evaluate and make recommendations on the existing 9 fire halls, equipment and staffing. The study was presented in 2009 and concluded that there was a need to increase staffing, make general repairs to some firehalls and to build and relocate Perth Road station out of the village but in the general area to the village and to relocate the Burnt Hills firehall to the area of Battersea Road and Burnt Hills. The location of the fire halls was based on the response area served by the hall and the location of volunteer firefighters. Following the study a number of upgrades were completed and staffing levels were increased.

A second report was commissioned by Council in 2013 and included an overall analysis of the fire halls, staffing and equipment utilized by the fire department. During the review, Emergency Management and Training Inc. (EMT) evaluated the following 12 specific items.

1. Evaluation of all Existing Fire Halls
2. Evaluate Response Areas
3. Evaluate Staffing Requirements
4. Determine the Number of Fire Halls Required
5. Determine the Location of Fire Halls
6. Assess the Impact of Changes to the number of or location of existing Fire Halls
7. Assess the Impact to Response Times
8. Determine any or all repairs to existing Fire Halls
9. Access all relevant legislation to ensure compliance
10. Provide detailed options to existing Fire Halls and agreements
11. Review OFM statistical data
12. Review existing simplified risk assessment

The complete report is attached for review

Following the review Council approved resources in the 2014 budget to address the immediate health and safety concerns, wiring upgrades, parking lot repairs and paving, removing of vegetation around buildings, exterior building repairs and protection of propane and fuel lines. In 2014 another recruitment of volunteers was completed with the addition of 30 new firefighters.

Other items such as the lack of washrooms were identified in the 2013 study as needing to be addressed as halls were renovated / replaced. The Perth Road hall was identified as needing more to be invested in it than made sense given the buildings limitations. Additional funds were approved in the 2015 budget to continue with the recommendations identified in the2013 study.

STAFF REPORT
FIRE DEPARTMENT

The 2013 report addressed the 9 fire halls and their current locations. Options were provided to maintain the current 9 halls or reduce and consolidate some of the halls. In considering any change in location, consolidation or possible reduction in the number of halls Council has to consider a number of issues:

- longer response times to certain areas based on the closest responding station
- the loss of the superior tanker shuttle to some residents who will be outside the 8 kilometer range
- potential reduction in the number of firefighters who are prepared or able to respond to halls that are further from their homes/businesses,
- in the event of a second emergency call other stations would be required to respond creating a further delay.
- the demands for service as a result of the projected 36% population growth forecast over the next 20 years.

For coverage areas for the current halls see page 93 Map #4 of the attached report. The study evaluated responses for 2011 and 2012. During this period, the Perth Road station responded to approximately 20 calls a year, however the actual quantity of calls is not a true reflection of activity. South Frontenac provides a 2 station response; ie 5 & 6 or 7 & 6 etc., to ensure adequate equipment and staffing. When responses are entered into the Ontario Fire Marshals software only a single station is reflected on the report, therefore when retrieving statistical data for each station you will only be able to identify the first station that is dispatched. We are currently reviewing how data is entered to capture more accurate response data for each station. Conversations with Kingston dispatch will take place to make changes to assist in this data collection.

Council approved $250,000.00 in the 2014 budget for a conceptual design, land acquisition and property servicing to replace the Perth Road firehall. The conceptual design was completed and presented to Committee of the Whole at the January 27, 2015 meeting. This was a four bay, single depth hall with training room, the associated staff space, required storage and mechanical services. The architect provided a cost estimate based on his recent experience and with the unknowns site conditions of $2.2 million.

The 2015 budget submission included 2.2 million dollars for the replacement of the Perth Road station based on the conceptual design. In approving the budget Council reduced the amount to 1 million dollars with the remaining amount retained in reserves and set aside $30,000 for a Master Fire Plan to support any further decisions.

A Master Fire Plan is often referred to as a strategic plan for the fire department and includes many of the same issues that have been prepared in the previous studies. The one part that has been missing is the plans for handling the long term growth projections, in terms of staffing and facilities. While increased growth will not reduce the need for both staffing and facilities, the question is where these resources should be stationed.

Council expressed concerns about the precedent that the conceptual design would set and the impact on the future needs. As Fire Chief I am conscious of this and provide my own insight as to what the future needs look like, however I have not contemplated a timeline for this.

STAFF REPORT
FIRE DEPARTMENT

Current Fire hall Configuration	Future Fire hall Configuration
Station 1 Bradshaw 2 bays, no drive through, 1 office, 2 washrooms, no training room	2 bay double length drive through, small training room, men and women's washrooms with showers, 1 office, 1 storage room, mechanical room (heating, electrical)
Station 2 Burridge 2 bay, single length no drive through, kitchen, training room, men and women's washroom rooms, 1 shower, no storage room	3 bay double length drive through, training room, kitchen, storage room, men and women's washroom with showers, cleaning room, washer and dryer room, mechanical room (heating, electrical) 2 offices
Station 3 Verona 2 bay single length no drive through, training room, men and women's washroom, storage room, 1 office	**Option 1** - Add 1 bay and men and women's shower. **Option 2 -** 3 bay double length drive through, training room, kitchen, storage room, men and women's showers, cleaning room, washer and dryer room, mechanical room (heating, electrical)
Station 4 Hartington 4 bay single length no drive through, training room, kitchen, 1 washroom, 1 office, 1 radio room	4 bay double length drive through, kitchen, training room, men and women's washrooms with showers, 2 offices, storage room, mechanical room (heating, electrical), cleaning room, washer and dryer room
Station 5 Sydenham 3 bay single length no drive through, training room, kitchen, 2 washrooms, 1 office, 1 storage room	4 bay double length drive through, kitchen, training room, men and women's washrooms with showers, 3 offices, storage room, mechanical room (heating, electrical), cleaning room, washer and dryer room, compressor room
Station 6 Perth Road 1 bay double wide, no drive through, 1 office, 2 washrooms, training room, kitchen, storage room, washer and dryer room	3 bay double length drive through, training room, kitchen, storage room, men and women's washrooms with showers, cleaning room, washer and dryer room, mechanical room (heating, electrical)
Station 7 Latimer 1 bay double wide, 1 side single bay, 1 office	3 bay double length drive through, training room, kitchen, storage room, men and women's washrooms with showers, cleaning room, washer and dryer room, mechanical room (heating, electrical)
Station 8 Sunbury 3 bay single length no drive through, training room, kitchen, 3 washrooms, 2 office, 2 storage room, compressor room	4 bay double length drive through, kitchen, training room, men and women's washrooms with showers, 3 offices, 2 storage rooms, mechanical room (heating, electrical), cleaning room, washer and dryer room, compressor room
Station 9 Burnt Hills 1 bay no drive through	2 bay double length drive through, small training room, men and women's washrooms with showers, 1 office, 1 storage room, mechanical room (heating, electrical)

Submitted/approved by:
Rick Chesebrough, Fire Chief

Fire Hall and Equipment Study

Township of South Frontenac Fire & Rescue

Sydenham, Ontario

September 2013

Submitted by:
Emergency Management and Training Inc.
Barrie, Ontario

Executive Summary

This report is an overall analysis of the fire halls, staffing and equipment utilized by the South Frontenac Fire & Rescue (SFFR). During the review, Emergency Management and Training Inc. (EMT) has evaluated the 12 specific items as requested by the Township of South Frontenac. These 12 specific items relate to:

1. Evaluation of all Existing Fire Halls
2. Evaluate Response Areas
3. Evaluate Staffing Requirements
4. Determine the Number of Fire Halls Required
5. Determine the Location of Fire Halls
6. Assess the Impact of Changes to the number of or location of existing Fire Halls
7. Assess the Impact to Response Times
8. Determine any or all repairs to existing Fire Halls
9. Access all relevant legislation to ensure compliance
10. Provide detailed options to existing Fire Halls and agreements
11. Review OFM statistical data
12. Review existing simplified risk assessment

Through meetings with Township management, the Fire Chief, and other stakeholders, the consulting team was able to complete a thorough review of what is working well and what areas require improvement within the SFFR. During the project the consulting team conducted a review of staffing, fire facilities, vehicles and related operations. Data provided by the fire service was also reviewed in relation to all of the 12 previously noted items contained in the Township's request for proposal (RFP). Based on the facilities, equipment and data review, EMT is submitting several recommendations that can be implemented in whole or in part by the Township as it sees fit.

Recommendations:

The information obtained during the four month review (June 2013 to September 2013) was carefully analyzed and weighed, which concluded in the following recommendations.

1) The fire department does not have a current strategic or master plan in place. One should be developed that takes into consideration the Township's 2013 Growth Study and other related information such as population and demographics that will affect the demands and response challenges placed on the fire service.

2) To ensure that the fire department is meeting the needs of the community and the expectations of its Council; the Fire Chief should work towards identifying a baseline response criteria. This will assist in identifying future equipment and staffing requirements as the community continues to grow.

   a) A detailed review and annual update on response times should be reported and quantified to Township Council to offer them a clear understanding of how the fire service is meeting the expectations of the community.

3) Because fire prevention is the least costly way of providing loss control, additional focus on fire prevention is required, based on the Township's size and forecasted growth.

   - To accomplish this volunteer firefighters should be utilized as much as possible to assume more responsibility for inspections of existing structures and for educating the public about fire safety.

4) Work on the present Simplified Risk Assessment should be started in 2014 to meet the SRA program's goals and expectations of a three to five year review as recommended by the Ontario Fire Marshal's Office.

5) A detailed review and annual update on response times should be reported and quantified to Township Council to offer them a clear understanding of how the fire service is meeting the expectations of the community.

6) Fire stations closings or relocations:

   Based on call volume and related response times; stations 1, 7 and 9, on the average, are responding to less than 10 calls (each) per year in their station's area (based on the dispatch response data received, which only notes the primary station to respond). In fact station 9 is noted as not being the primary station to respond to any calls in its response zone in 2012. Based solely on this data, the following recommendations are being made.

   a) It is recommended fire station 9 be relocated from its present location and moved closer to a main roadway as noted in maps 2 and 5 In Appendix "C". This would make station 9 more effective and useful in the overall response coverage for the Township.

      i) If this station is relocated; the health and safety recommendations noted in report are to be addressed in the new fire station

   b) If relocation of station 9 is not a consideration of Council then it is recommended that fire station 9 be closed due to the level of call volume and related volunteer firefighter staffing level. Station 8 is well situated to meet the present call demand. Volunteers from stations 9 should be retained (if possible) to work out of a station that is close to their homes for a more efficient level of response.

c) Station 1, (based on the primary station response data) responded to fewer than 10 calls in 2012, however due to its unique location in the upper northern area of the township, a need for this station still exists. If Council decides to close station 1 and adopt a 14 minute response standard for this area (as noted by NFPA 1720), it must be cognizant that station 2 will be the only station in this upper northern part of the Township.

   i) A fire service "automatic aid" agreement could be entered into with the bordering departments.

7) The list of fire station repairs, upgrades and associated costs identified in Appendix "B" need to be evaluated and prioritized to ensure future functionality of the existing fire stations.

   a) All health and safety related repairs/upgrades need to take precedence.

8) During the station visits it was noted that none of the fire stations contained an emergency backup power source. Each fire station or at the very least, "key" identified stations (i.e. one in each main geographical area) should have a backup power system installed.

9) At this time it would appear that the department is well set up to conduct the OFM Firefighter Curriculum program to its firefighters. However, the department should enhance its training programs in the areas of any specialized and officer training programs. This might require sending staff to the fire college.

   As such, SFFR should work with neighbouring fire departments to bring any required programs to a regional facility whenever possible.

   a) A general review and needs analysis should be conducted by the Fire Chief to identify future firefighter and officer training needs.

10) The Fire Chief should contact Kingston Fire Dispatch to request that the SFFR dispatch data reflects the primary and secondary units that are being dispatched to all types of calls. This will better reflect the actual number of responses from all stations.

11) In relation to vehicle life cycling, the Township should continue to adhere to an appropriate schedule for both the replacement and progression of the vehicles being moved from "first run" to "2nd run (back up)" units.

12) Based on the "a and b" points noted below, staffing levels need to be enhanced in many of the fire stations. Recruitment and retention is always a challenge for volunteer fire departments.

   a) Fire stations 1, 2 and 9 have less than 10 volunteers each to respond to calls, with stations 1 and 9 being of greatest concern as they only have 4 and 5 respectively. This means that on average, there is less than an effective response force from each station. This necessitates a two station call out for all calls.

   b) To be effective on even a minimal level, each station must be able to count upon 4

firefighters being able to respond at any given time.

13) In relation to the Capital Budget, SFFR should periodically review its replacement forecasts to ensure that the Township will be able to meet these targeted timelines.

    a) SFFR should establish a capital forecast for the renovation / replacement of fire stations

These recommendations are discussed in more detail in the body of this report.

Contents

Purpose

The key purpose of this Fire Station and Equipment review is to evaluate the present status of the fire department in relation to its present physical setup and ability to effectively respond to emergencies and other calls for service within the community of South Frontenac.

To ensure that this review was complete in its analysis, meetings were held with the Township's CAO and Fire Chief; physical reviews of the fire stations and equipment located at each station were conducted; and a final interview was also conducted with the volunteer Deputy Chiefs of the department.

Performance Measures

This report has been generated by Emergency Management & Training Inc. (EMT) and is based upon key performance indicators that have been identified in standards and safety regulations such as:

- The Ontario Fire Marshal's Office (OFM) Public Safety Guidelines,
- The Fire Prevention and Protection Act,
- The National Fire Protection Association (NFPA)
- The Commission on Fire Accreditation International
- The Ontario Health and Safety Act., NIOSH (national institute for occupational safety and health) and Ontario Fire Service – Section 21 Guidelines.

Review Process

This report has utilized a seven-step process in determining the present status of the South Frontenac Fire & Rescue facilities, staffing and related operations.
Emergency Management and Training Inc. (EMT) has based its review process on the Township's initial Request for Proposal and the response document submitted by EMT. This review covers the following areas:

1) A thorough review of fire station locations; their ability to meet the response needs of the community and needs of the firefighters themselves
2) Reviewing fire department statistics, station locations, infrastructure and equipment resources, staffing levels/structure and related budgets
3) Examining relevant supporting documents including current Simplified Risk Assessment, bylaws, population statistics and growth forecasts, business plans, and other pertinent and available documents
4) Engaging appropriate Township and Fire Department personnel through open communications including stakeholder consultation meetings

5) Completing a gap analysis using references to Occupational Health and Safety Act., the NFPA standards 1500, 1581, 1720, 1851, 1911 and 1989 along with the Ontario Fire Marshal's (OFM) public fire safety guidelines to determine the steps required to move forward with plans for the future
6) Identifying options and making recommendations, including approximate budgetary implications and associated timelines for the recommendations
7) Ensuring the recommendations assists the Township of South Frontenac Fire and Rescue to be sustainable – from an economic, environment and people perspective.

As such, the final report will include comments/recommendations on the following key areas:

- Fire department organization and administration
- Fire prevention and public education
- A review of the most recent Simplified Risk Assessment
- Fire suppression response
- Fire station location and facilities
- Apparatus and equipment suitability and replacement
- Volunteer staffing
- Training
- Dispatching services
- Capital investment forecasts

Project Consultants

Although several staff at Emergency Management and Training were involved in the collaboration and completion of this report, the overall review was conducted by:

- Darryl Culley, President Emergency Management and Training Inc., and
- Lyle Quan, Senior Fire Consultant

Together, Darryl and Lyle have a combined emergency services experience of almost 60 years. Both have worked on many projects that range from service reviews, creation of strategic and master plans and development of emergency response programs for clients.

Community Overview

The Township of South Frontenac is located in the southern portion of Frontenac County. South Frontenac's main bordering communities are – Central Frontenac to the north, the City of

Kingston to the south, Tay Valley Township, Rideau Lakes Township and the Township of Leeds and the Thousand Islands to the east and Stone Mills Township and Loyalist Township to the west.

The Township was amalgamated in 1998 and is home to approximately 18,300 residents (2011 Census). A 2013 Township of South Frontenac Growth Study projects the Township's population to grow by approximately 6,700 people to approximately 25,000 by 2036. This 36% population growth forecast and accompanying development in the next 20 plus years must be factored into any long term fire service planning.

The Township's fire department is comprised of nine fire stations that are referred to as the following:

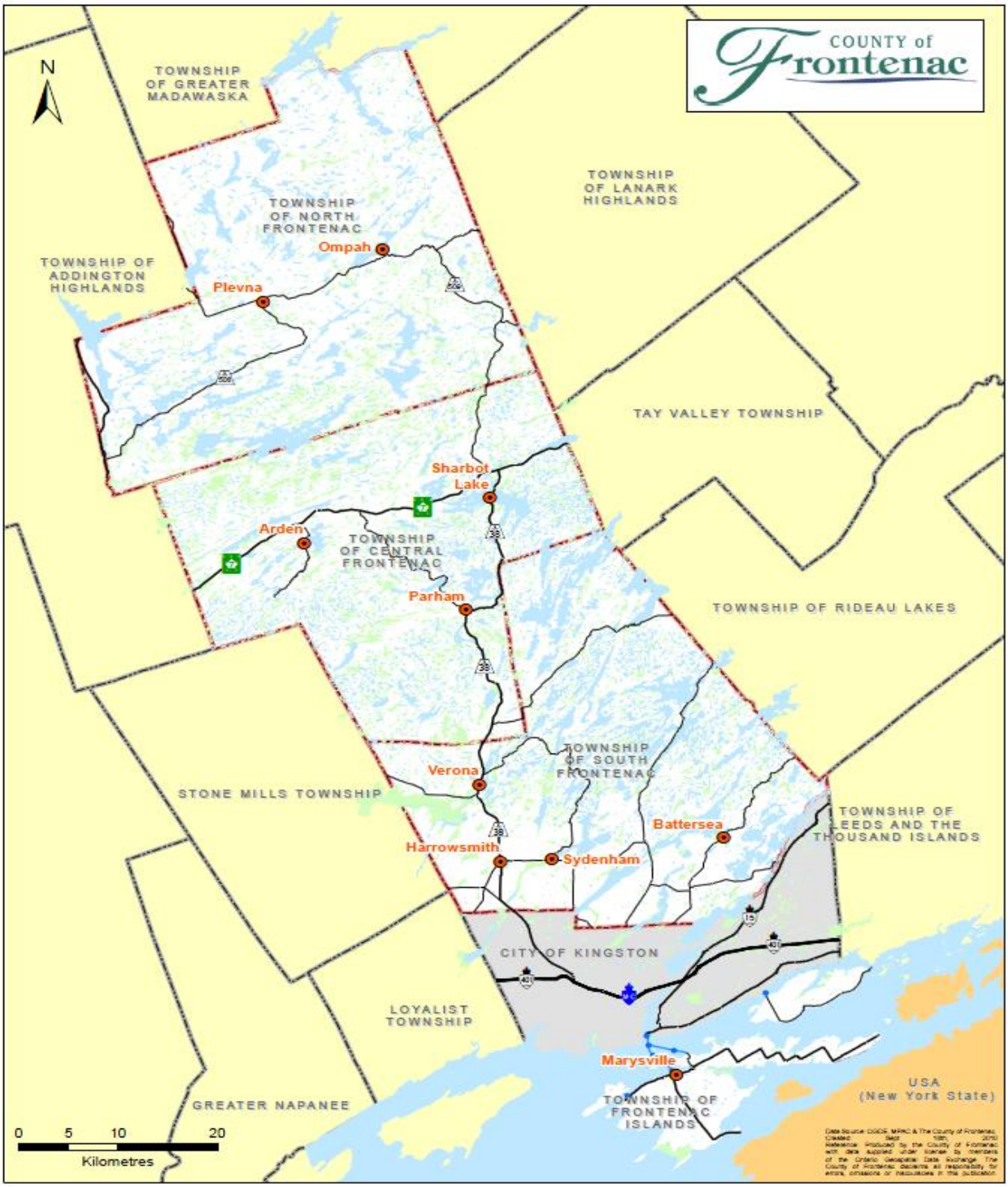
- Station #1 – Bradshaw Rd
- Station #2 – Burridge Rd
- Station #3 – Hwy 38, Verona
- Station #4 – Holleford Rd, Hartington
- Station #5 – Stage Coach Rd, Sydenham
- Station #6 – Perth Rd Station
- Station #7 – Latimer Rd, Inverary
- Station #8 – Battersea Rd, Sunbury and
- Station #9 – Carrying Place Rd, Burnt Hills.

The department's nine fire stations are staffed by volunteer firefighters, with a current total compliment of approximately 140+ volunteers. The only full time staff member of the department is the Fire Chief.

South Frontenac is a community that is approximately 65% land based and 35% water based which can present some unique challenges for the fire department when responding to calls for help.

There are 24 fire apparatus distributed amongst the nine fire stations. These apparatus include pumper trucks, tankers and rescue trucks. There is also some special rescue equipment, such as boats, ATV's, utility trucks and a lighting unit.

FIGURE 1: South Frontenac – In relation to the County of South Frontenac

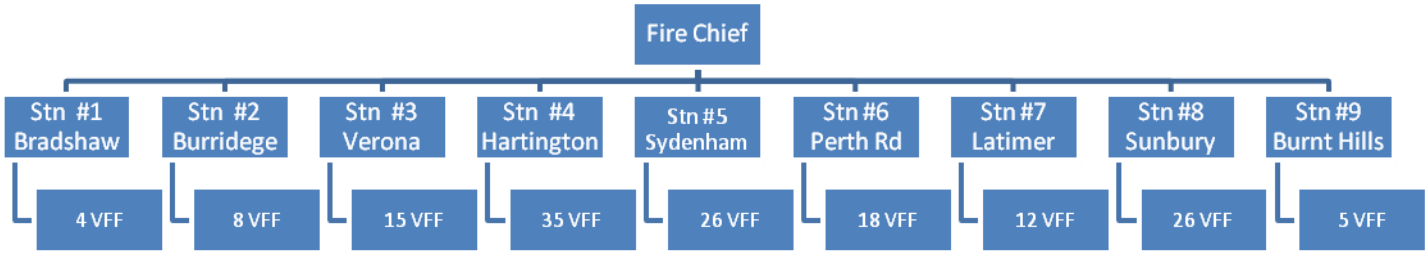


Fire Department Composition and Administration

The Fire Chief of South Frontenac Fire & Rescue reports to the Township's Chief Administrative Officer (CAO) in a council-manager style of government. The Fire Chief serves as the head of the South Frontenac Fire & Rescue service and is supported by one (shared) administrative assistant; there is no full time deputy chief, fire prevention officer or training officer for the fire department.

The department's organizational chart (fig #2) reflects the nine fire stations with a present strength of approximately 140+ positions. This is broken down into the Fire Chief and volunteer firefighters. As already noted, there is no full time deputy fire chief to assist with the day to day operations of the fire department.

FIGURE 2: Organizational/Fire Station Chart



There appears to be a good level of communication between the Fire Chief and the CAO. The CAO is aware of the ongoing issues facing fire management and the fire department itself in relation to the fire stations and related response challenges.

Assessment and Planning

Planning is a key function of any organization and should be done with a focus on the present needs of the community, coupled with its future growth and how this will affect the service demands on the fire service. The Ontario Fire Marshal's Office has identified three lines of defense for communities in relation to fire and life safety. These three lines are:

1. Education – fire safety education is the key to mitigating the fire and life hazards before they start

2. Inspections and Enforcement – if the public education program does not prove effective then the next step is for the fire department to enforce fire safety requirements through inspections and possible charges

3. Emergency Response – if the first two lines of defense fail for whatever reason, the community, through its fire department should be prepared to respond in an efficient and effective manner to put the fire out and/or mitigate the emergency itself.

By conducting this fire service review, the department and the Township have demonstrated a genuine investment in the future of the fire service and the community they serve.

One document that plays a critical role in the future of any organization is its strategic or master plan. Presently, the fire department does not have a current strategic or master plan in place and as such should consider developing one which should be based on the outcomes of this report and future growth projections.

Components of a strategic or master plan would include such things as:

- Developing the Mission, Vision and Values of the department
- Conducting a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) of the department
- Developing some short term and long term strategies
- Action plan for implementation
- A method to monitor the plan and implementation of related action items
- Financial requirements to implement components of the plan

Over the past 10 years, the Township of South Frontenac has witnessed many changes that equate to quite a few shifts in demographics; such as a reduction in industry, yet a growth in residential housing. As such, as thorough review of the Township's and the Fire Service's future planning documents, goals and related objectives should be evaluated to ensure proper alignment with the future needs.

Development of a strategic or master plan would be a three to four month project.

Recommendation:

- The fire department does not have a strategic or master plan in place. One should be developed that takes into consideration the Township's 2013 Growth Study and other related information such as population and demographics that will affect the demands and response criteria on the fire services

Associated Costs: - two options

1. This could be accomplished by the Fire Chief if given the time and resources to do it. However, based on the present demands on his time, the Fire Chief may not have the capacity to accomplish this as an internal project. Costs – staff related for this option.

2. Due to the present time restraints on the Fire Chief, if contracted out to a consulting firm an approximate cost of 20,000 to 40,000 dollars should be anticipated (depending on the scope of the program).

Goals and Objectives

The goal of any fire service is to ensure an efficient and effective response to the community's needs when called. The National Fire Protection Association (NFPA) suggests that response times should be used as a primary performance measure in fire departments. Although South Frontenac Fire & Rescue (SFFR) has adopted the use of response time measurement as a guide to evaluate their capabilities, these times are not clearly identified in any official township document. NFPA standards recommend two levels of response criteria that relate to South Frontenac's population densities, these are:

- In Suburban areas (population of 500 – 1000 per square mile), there should be a minimum response of **10 staff within 10 minutes** 80 percent of the time
- In Rural areas (population of less than 500 per square mile), there should be a minimum response of **6 staff within 14 minutes** 80 percent of the time.

During the review of response times, it was noted that the Fire Chief does review the department's responses and that he did demonstrate and voice a sincere interest towards ensuring that his department does embrace nationally recommended response standards as benchmarks to work towards in meeting the needs of the community.

Based on the response data received, the 2012 response times range from a minimum of approximately 2.5 minutes to a maximum of approximately 56 minutes; with an overall average of approximately 15 minutes. There will always be anomalies in response times based on such things as available staffing, time of day, weather and the actual location of the incident (due to geographical challenges).

<u>Note:</u> none of the above noted numbers should be taken into isolation as they are on a

general reflection of the upper, lower and average response times. No percentages have been affixed to them to determine if they are in line with the NFPA recommended standards.

In order to set its goals and objectives, the fire service must confirm: ***what are the expectations of Council in relation to response time criteria, if any***. By knowing this, the Fire Chief will be able to better determine and identify the future requirements of the department in relation to staffing, fire stations and vehicle needs.

Recommendation:

- To ensure that the fire department is meeting the needs of the community and the expectations of its Council; the Fire Chief should works towards identifying a baseline and benchmark set of response criteria. This will assist in identifying future equipment and staffing requirements as the community continues to grow.

Associated Costs:

- There are no immediate costs associated with this recommendation. However, based on the level of response criteria that may be supported by Council, future costs relating to staffing and equipment could be a factor.

Programs

Six separate programs, each of which is integral to the mission and operations of the South Frontenac Fire & Rescue service, are discussed in this section:

1. fire prevention and public education
2. fire suppression/emergency response
3. fire stations
4. training
5. special operations
6. Communications

1. Fire Prevention and Public Education

The Fire Protection and Prevention Act (FPPA) notes that a community must supply fire safety education and fire prevention programs to its community. Along with this, there must be a public safety officer for the community. In many smaller communities, the fire chief is the one who wears both hats (fire chief and public safety officer).

In relation to having a fire department; the FPPA notes that once a fire department is established, it must maintained by the municipality.

To assist each community in identifying its goals and expectations in relation to fire safety, a fire department is expected to complete a Simplified Risk Assessment (SRA) of their Community every three to five years. This SRA is mandated by the Ontario Fire Marshal's Office to help communities pinpoint the areas that are being addressed along with those which require improvement. The SRA identifies what the plan is to ensure compliance in the areas of fire education and safety.

The South Frontenac Fire & Emergency Services does not have an actual fire prevention division. This task is handled by the fire chief, the deputy chiefs and volunteer firefighters. Fire inspections and complaint inspections remain a key responsibility of the fire chief and his deputies, but the entire department works together when it comes to meeting other prevention activities, including educating the public about fire prevention.

The fire chief understands the need for expanding prevention activities but is under staffing restraints (due to available hours) in relation to expanding this program. National best practices suggest that prevention activities can pay huge dividends in the areas of reducing fires and fire related injuries through education and aggressive fire safety enforcement practices.

The Fire Underwriters Surveys have recommend (as a general guideline) that the staffing of the of the fire prevention division should be one full time fire prevention officer per 20,000 population. Based on the Township's population, this would equate to one full time fire prevention office; or an identified person(s) whose main focus is fire prevention and public

safety education. The use of the volunteer firefighters in a manner to meet what would be an hourly equivalent to a full time firefighter would be a good measurement for the fire chief to utilize.

Simplified Risk Assessment (SRA) and Public Fire Safety Officer/Team

As noted in Public Fire Safety Guideline, PFSG 04-40-12A, a simplified risk assessment must be completed for the community to determine the needs and circumstances of the municipality along with establishing the level of fire prevention and public fire safety education required. Any significant risks identified through the analysis should be addressed. For example; if the risk assessment indicates a significant threat to life or fire loss in multi-unit residential buildings, a program that will adequately improve their fire safety - such as routine inspections - would be appropriate to address the specific need of the community.

As an accepted practice, an SRA should be completed every three to five years. However, if there is significant growth or change in the community an annual update should also be conducted to present a more realistic review and set of program upgrades/changes that are required to meet the needs of the community.

As a minimum requirement, a community fire safety program must include:

- a simplified risk assessment
- a smoke alarm program
- distribution of fire safety education materials, and
- participating in inspections upon complaint or when requested to assist with Fire Code compliance.

As each community is different, the simplified risk assessment and ensuing fire concern profile will assist in identifying the degree to which these activities are required in accordance with local needs and circumstances. The simplified risk assessment is made up of the following components:

- demographic profile
- building stock profile
- local and provincial fire loss profiles
- information analysis and evaluation
- priority setting for compliance
- implementing solutions

The most recent SRA for South Frontenac was completed in 2011, which means that it is coming to the end of its operational life. A new SRA study should be conducted and completed in 2014/15 to continue to meet the expectations of the Ontario Fire Marshal's Office.

Within the 2011 SRA, the following areas were identified as concerns by the Ontario Fire Marshal's Office:

1. Vulnerable groups such as seniors and those with physical difficulties
2. Certain barriers to public education due to such a high seasonal and transient population
3. Fire safety in campgrounds
4. Fires involving solid fuel burning systems and the disposal of ashes
5. That the "inspection upon complaint program" for non-residential high risk occupancies is not seen as adequate at the time the 2011 SRA was completed

Since 2011, SFFR has been working towards addressing the above noted areas of concern.

While working on the revised version of the Simplified Risk Assessment the fire department needs to note its successes in these areas and should also continue to incorporate these items in its new SRA to ensure that they continue to focus on these areas.

Community Fire Safety Officer/Team

While conducting a Simplified Risk Assessment and overview of the fire department and community's needs, the question of whether or not a fire station is required or if other options present themselves to the community in possibly a more cost effective manner. One option is related to the first line of defense as noted by the Fire Marshal's Office, which is education.

As noted in Public Fire Safety Guideline – PFSG 04-41-12; Municipalities are responsible for the provision of fire protection services within their area of jurisdiction. As a minimum, communities must establish and deliver programs which include public education with respect to fire safety, as well as certain components of fire prevention.

The Community Fire Safety Officer/Team is one method of providing a reasonable level of community fire safety, for certain circumstances in small communities that may lack traditional fire suppression resources. The primary focus of the Community Fire Safety Officer/Team is on fire safety, rather than on readiness for suppression.

Service Delivery Options:

- locally by the municipality
- purchased from another municipality, territory without municipal organization, or person
- jointly managed and operated with another municipality
- any combination of the above

The primary function of the Community Fire Safety Officer/Team is to ensure that each community provides an effective fire safety program. It is designed to supplement fire suppression activities, not replace them.

Recommendations:

- Because fire prevention is the least costly way of providing loss control, additional focus on fire prevention is encouraged based on the Township's size and forecasted growth.
    - To accomplish this, volunteer firefighters, should be utilized as much as possible to assume more responsibility for inspections of existing structures and for educating the public about fire safety.
    - This would include an annual program that outlines fire prevention and fire safety initiatives to be accomplished within that calendar year.
- Work on an updated Simplified Risk Assessment should be started early in 2014 to meet the SRA program goals and expectations.

Associated Costs:

- Minimal costs that are based on the increased use of volunteer firefighters for public education and fire safety inspections.
    - Can be budgeted for based on the identified needs/recommendations made by the fire chief.

2. Fire Suppression/Emergency Response

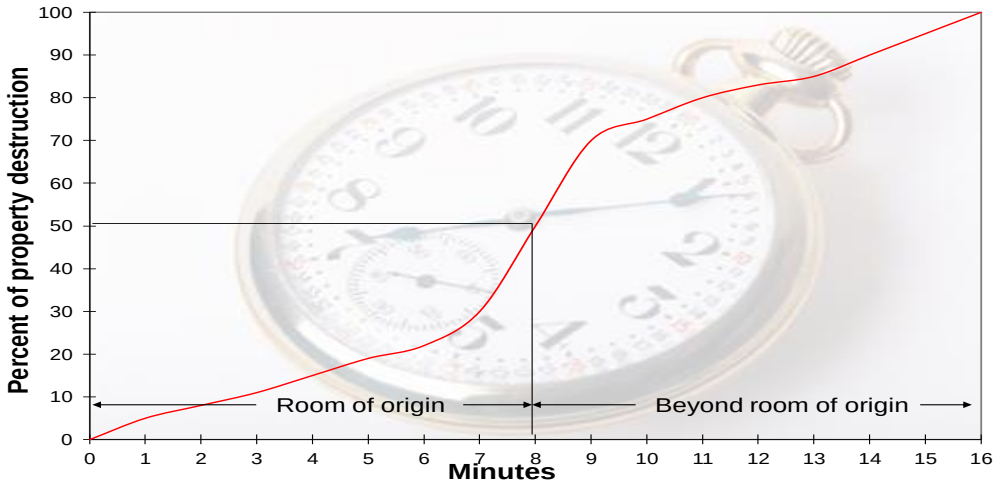
When considering the response times and related needs for a community; the fire response curve (fig 3) presents the reader with a general understanding of how fire can grow within a room over a short period of time.

As noted in the fire propagation diagram, after eight minutes a small fire can grow beyond the room of origin; hence the need for initiating fire suppression activities as soon as possible. It must also be noted that within the "overall response time criteria" other times must be taken into consideration, such as:

- receiving the call (from the place in need)
- dispatching the call (sending out the message to the fire station)
- turnout time (once the tones are set off, how long does it take for the firefighters to arrive at the station, gear up and get the fire truck rolling out of the fire station. This time varies greatly between fulltime and volunteer firefighters)
- actual travel time to the scene
- time to assess the situation, gear up, advance hose lines (if an actual fire)

It must also be noted that SFFR responds to more than just fires. For example, with medical calls brain death can occur if the body is starved of oxygen for more than four minutes. Hence the reason to be as efficient and effective as possible in responding to calls for assistance. To address this, SFFR has implemented a tiered response program that has two fire vehicles responding to all calls (which is monitored by the fire chief).

FIGURE 3: Fire Response/Propagation Curve



Based on this fire response curve information; the overall goal of any fire department is to arrive at the scene of the fire and/or incident as quickly and as effectively as possible. In other words, if a fire truck arrives on scene in eight minutes or less, then there is increased potential to contain the fire by reducing further spread of the fire to the rest of the structure.

However, if the first arriving fire attack team arrives with only three firefighters on board then it is limited to what operations it can successfully attempt. Based on NFPA and Fire Health and Safety Section 21 Guidelines, no interior attack can be made by the firefighters until more staff arrive on scene. The initial expectation is that a minimum of three firefighters and one officer arrive on scene to make up the initial response team.

More information in relation to response times and fire station locations will be presented later in this report.

3. Fire Station Location and other Considerations:

Fire stations should be situated to offer the most efficient and effective response to the community they serve. Centering them within a determined response zone that is simply based on "timed" responses is not always the best option to implement. Fire station location depends on many factors such as key risks within the response zone, future growth of the community and even whether or not this will be a station that is staffed (in the future by) full time or by volunteer firefighters. Another consideration is the geographical layout of the community that can include natural barriers or divides, such as water that makes it necessary to have some stations located within close proximity of each other.

Public Fire Safety Guideline – PFSG 04-08-13 on Fire Station Location notes fire stations should be situated to achieve the most effective and safe emergency responses. Distance and travel time may be a primary consideration; however, if a basic expectation is set by the community's decision makers, then a more realistic level of service and fire station location criteria can be identified.

For example; an expectation may be that the fire department will reach the core area of each hamlet within 5 minutes (travel time), the urban boundaries in 10 minutes, the rural area in 15 minutes and the remainder in 30 minutes. This topic of response times is noted further in this document and is supported by "response time maps" in Appendix "B".

Presently, all stations are staffed by volunteer firefighters only. The fire chief works out of the Township's offices, located in Sydenham. Being that this is where his (shared) administrative assistant is also located, this would appear to meet the fire chief's needs at this time. This office location also allows the fire chief access to the CAO and Council on a regular basis.

However, as the Township's population and staffing numbers grow, there may be the need to relocate the fire chief to the Sydenham station. This would still position the fire chief within close proximity of the Township offices, and would offer even closer contact with some of the

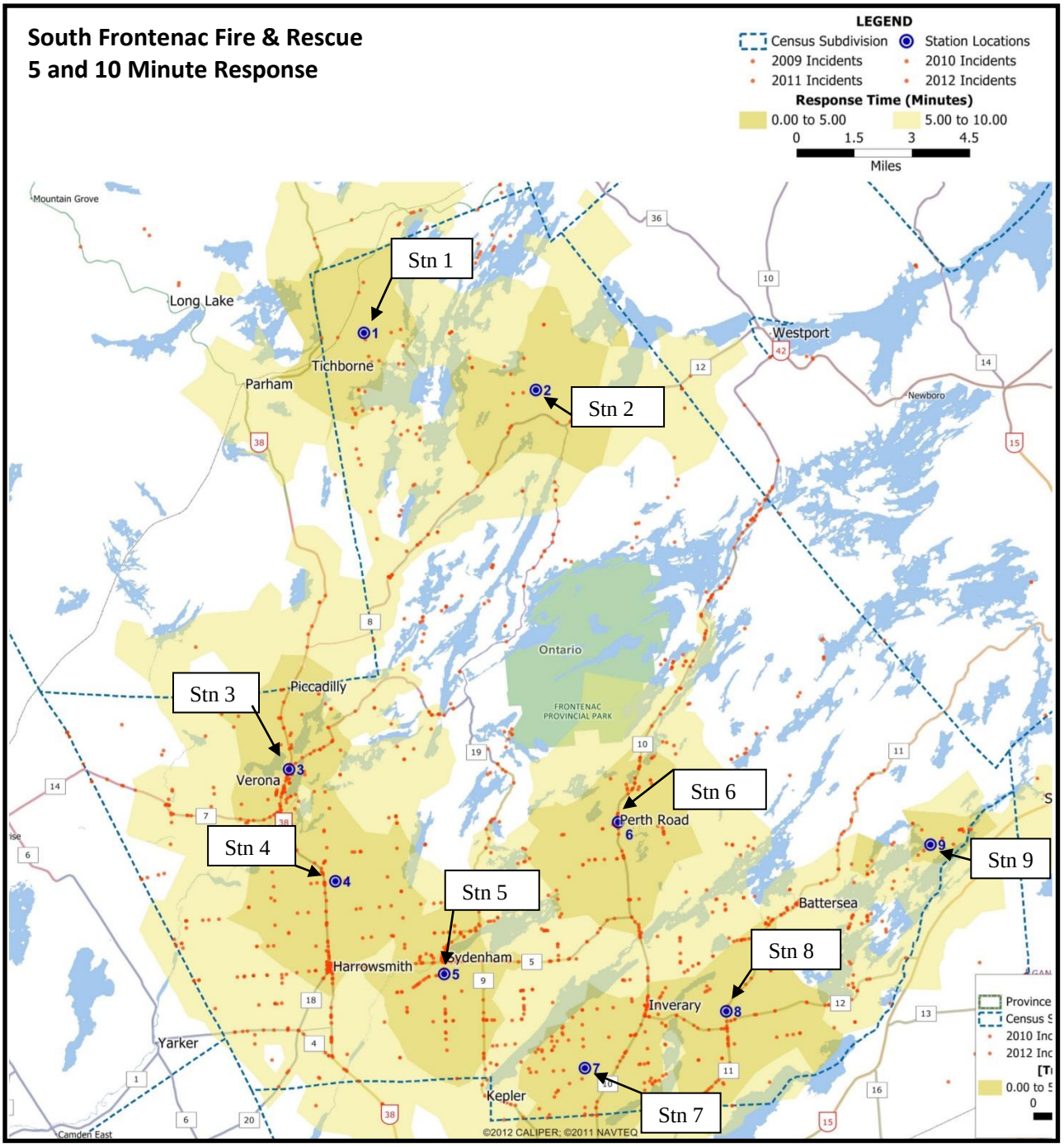
volunteer firefighters.

As noted in figure 4, the fire stations are located throughout South Frontenac in a manner that appears to offer a good level of coverage for the community. However, when considering fire station locations and response needs, it must be kept in mind that one station may not meet the needs of the response area that it is in because of its actual location, quick access by the volunteers and even the number of volunteer firefighters available to respond.

With this challenge in mind, a detailed review of each district's response statistics needs to be evaluated to identify where changes can and should be made to find efficiencies within the department.

Figure 4 is a map of the fire station locations along with the locations of calls for service. As the reader will note; the bulk of the responses are along highways and the more populated areas of the township. This is of no surprise; however it does support the need for fire stations in certain locations, along with the question as to the value of other fire stations due to the low or non-existent call volume.

FIGURE 4: South Frontenac Fire Station Locations



As already stated, there is no Township document that makes note of any actual response time criteria. However, the National Fire Protection Association (NFPA) does identify a general standard for recommended response times for volunteer fire departments. As such, the challenge is to determine the best location for each fire station to address the NFPA recommendations as closely as possible.

The noted NFPA standard notes:

- NFPA 1720 – section 4.3.2 "Staffing and Response Time notes that;
  - *In Suburban areas (population of 500 – 1000 per square mile), there should be a minimum response of **10 staff within 10 minutes** 80 percent of the time*
  - *In Rural areas (population of less than 500 per square mile), there should be a minimum response of **6 staff within 14 minutes** 80 percent of the time.*

Appendix "B" presents different response maps that depict 10 minute "travel time" response zones from the fire stations, along with 14 minute "travel time" response zones, both of which are recommendations as noted by NFPA 1720 for volunteer fire departments.

- Maps 1 and 4 are colour representations of 10 and 14 minute response areas by the present 9 fire stations in relation to the Suburban and Rural area criterion.
- Maps 2 and 5 represent the coverage for the 10 and 14 minute response criterion with station 9 relocated to a new highway site.
- Maps 3 and 6 are of the 10 and 14 minute response zones with station 9 removed from the mix.

Note: Even though station 1 also had a low number of responses for 2011 and 2012, its geographical location and related access issues (by other fire stations) to the response area make this station a required resource for the northern section of the Township; unless a service agreement can be entered into with other bordering fire departments.

Response Data

To support the variations of the previously noted response maps, the following seven charts identify a comparison of response types and the response breakdown among the nine fire stations between 2011 and 2012. It must be noted that none of this information should not be taken in isolation as it simply reflects actual response data. Further discussion between senior management and Council is required to confirm if a fire station is still required in a certain zone or if two fire station response areas can be captured by one. As noted earlier in this document, there also needs to be a review of the future growth statistics and demographics of the community to understand where the potential future needs will be and where some efficiencies can be made.

The OFM definition of response time will, for the purposes of this study, be expanded to include identification of the fire/incident, dispatch time, preparation time and travel time.

Hence, it is the time from fire ignition of the fire or start of the emergency incident to the point at which the first fire truck and the initial response team arrives at the incident.

Having noted the OFM definition, fire departments have used two different methods of calculating response times. Many departments have adopted the OFM method which, as noted (for the purposes of statistical reporting) is defined as follows: "The elapsed time between receipt of the call by the department and the arrival of the first unit at the occurrence location." Other departments have adopted "response travel time" which is considered to be the time from when the vehicles leave the station until arrival at the occurrence location. Therefore those departments which have adopted the OFM definition will have greater average response time results than those adopting response travel time.

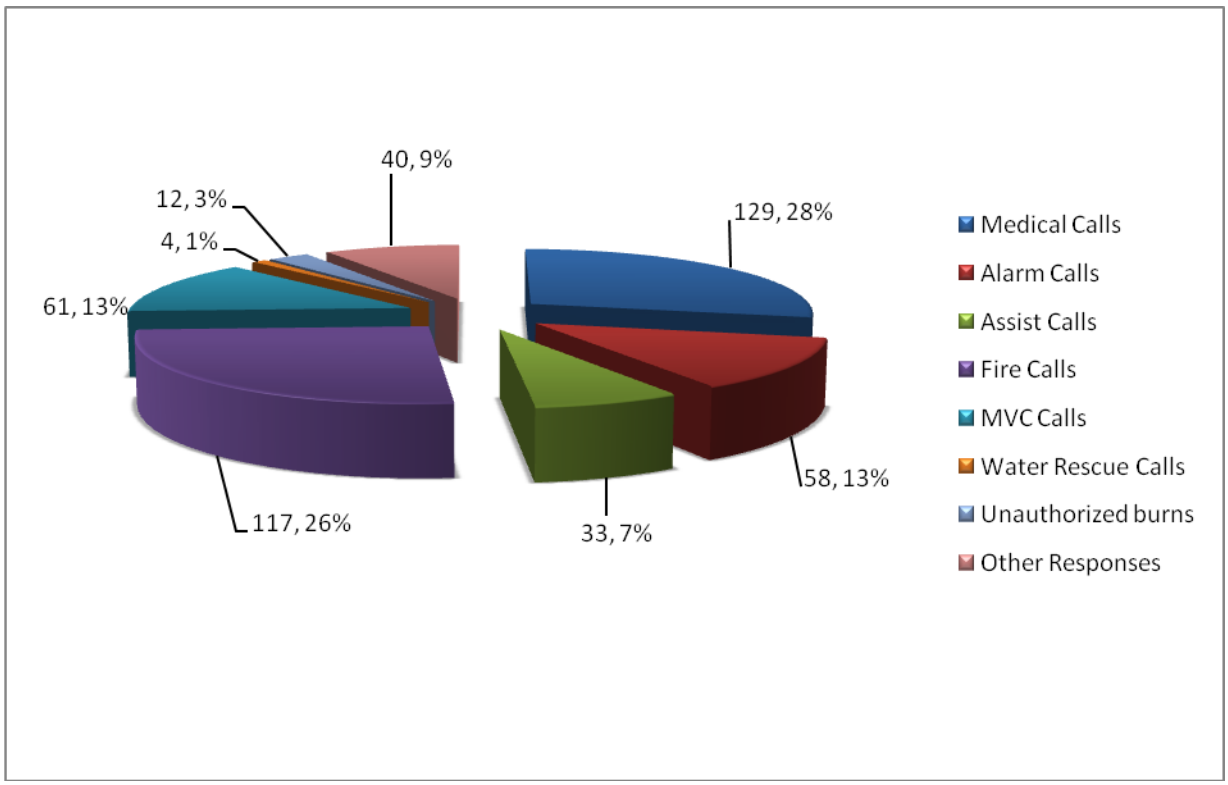
The South Frontenac Fire & Rescue service response times are calculated from “dispatch time, to time of arrival at the incident”.

Regardless of which definition is adopted, fire department response time is a function of various factors including, but not limited to:

- the distance between the fire department and response location
- the layout of the community
- impediments such as weather, construction, traffic jams, lack of roads
- notification time
- assembly time

These charts (through the use of the supplied data) help to identify the types of calls that are creating the bulk of response demands and which station(s) are called upon the most for these responses.

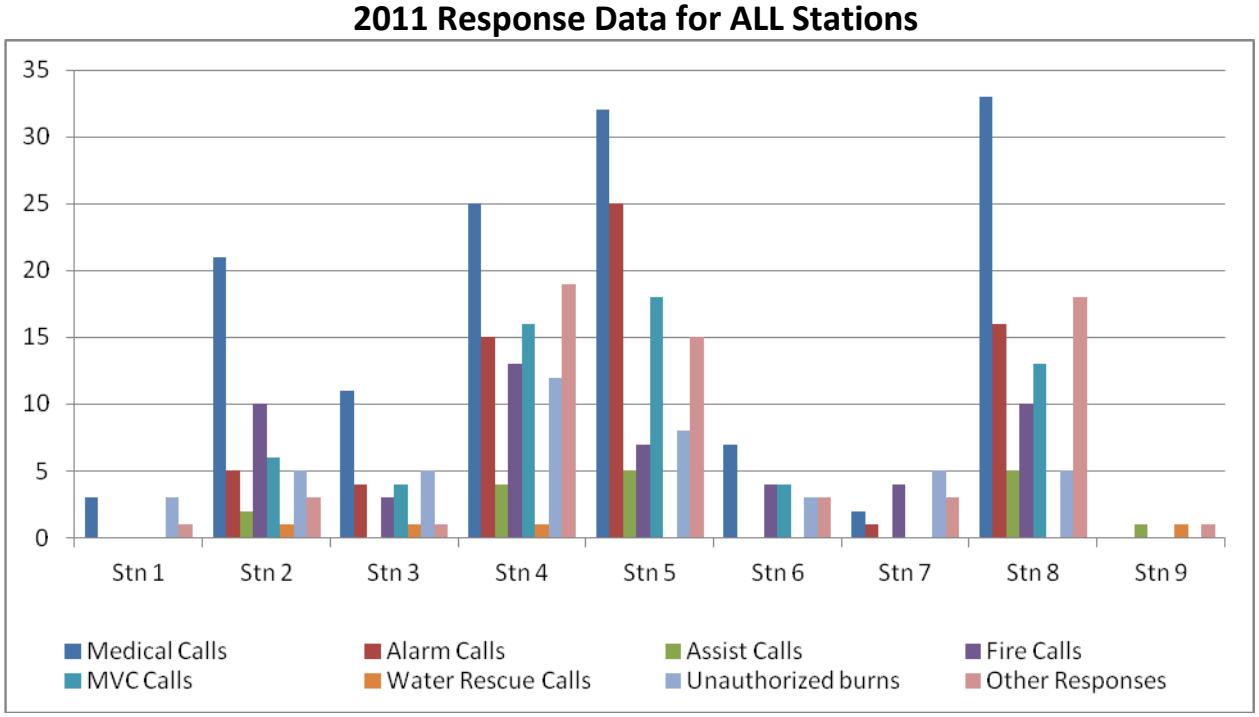
FIGURE 5: General Breakdown of Call Types and Percentages for 2012

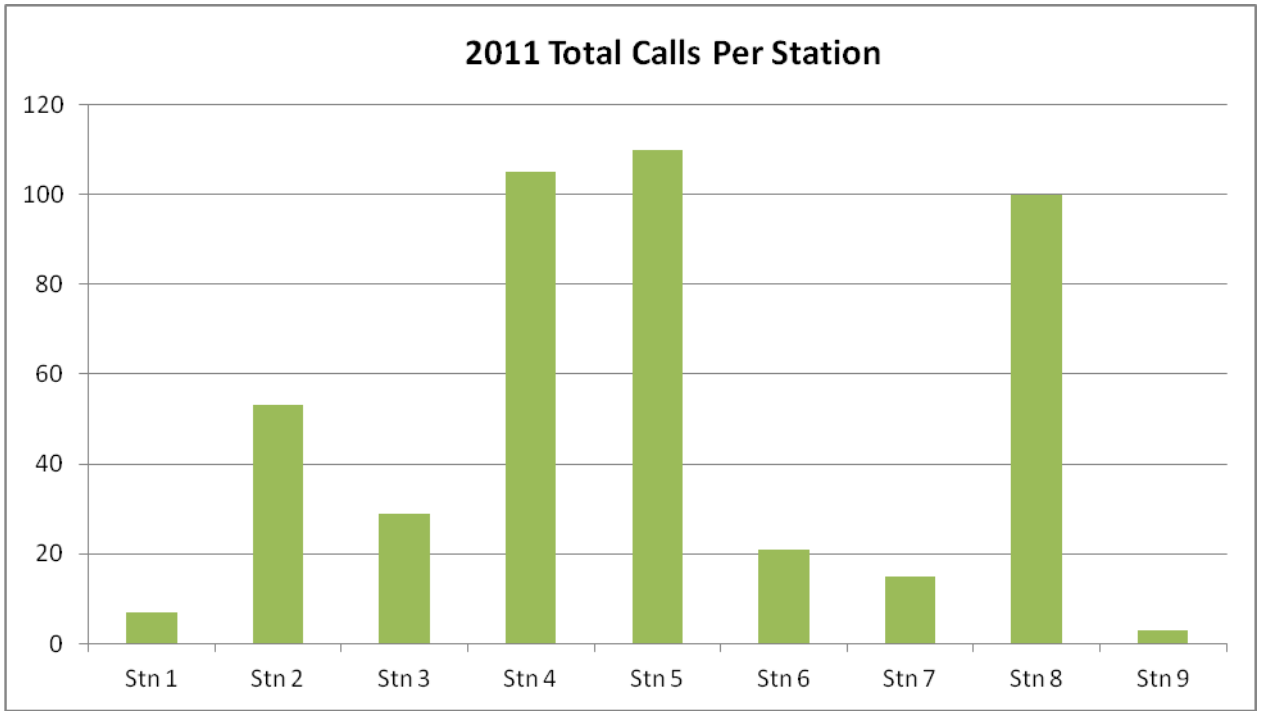


This pie chart outlines the call types and related percentages:

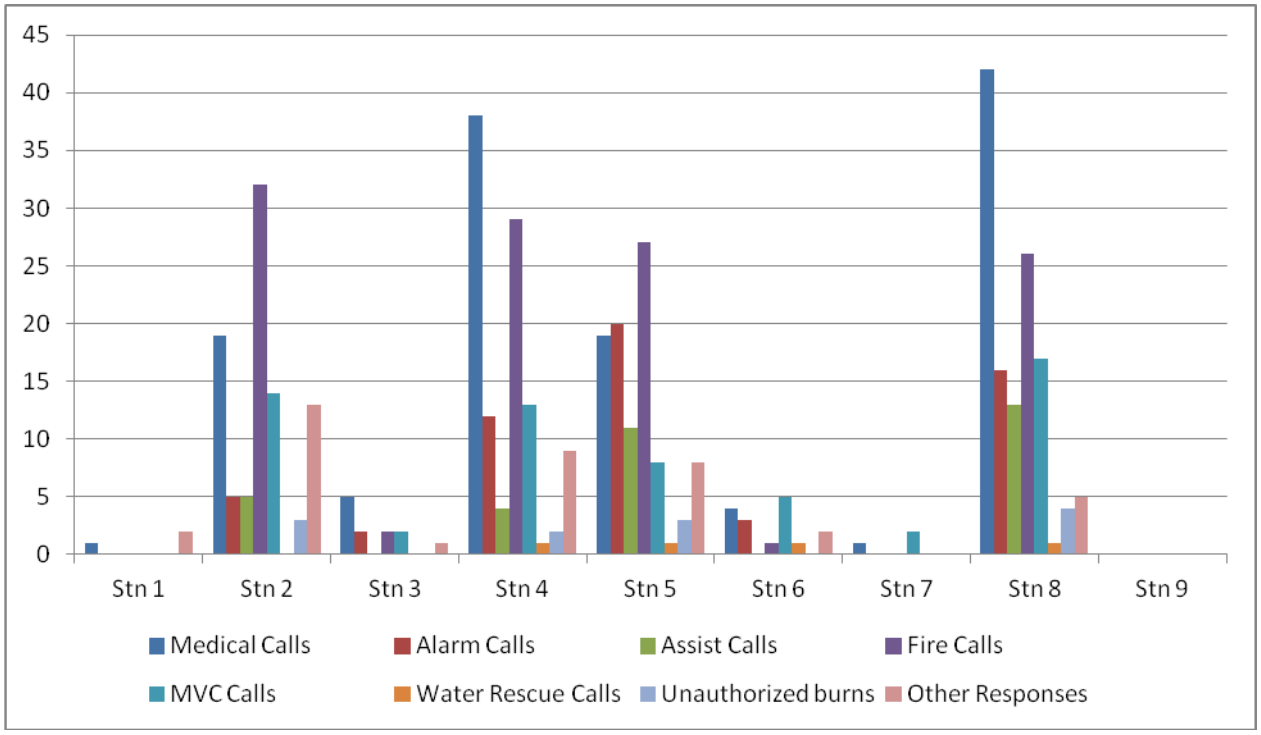
1. Medical = 28%
2. Fire = 26%
3. Motor Vehicle Collisions (MVC's) = 13%
4. Alarm calls = 13% each
5. Other (mutual aid and standby calls) = 9%
6. Assist (police assist and public assist calls) = 7%
7. Unauthorized burns 3%
8. Water rescues = 1%

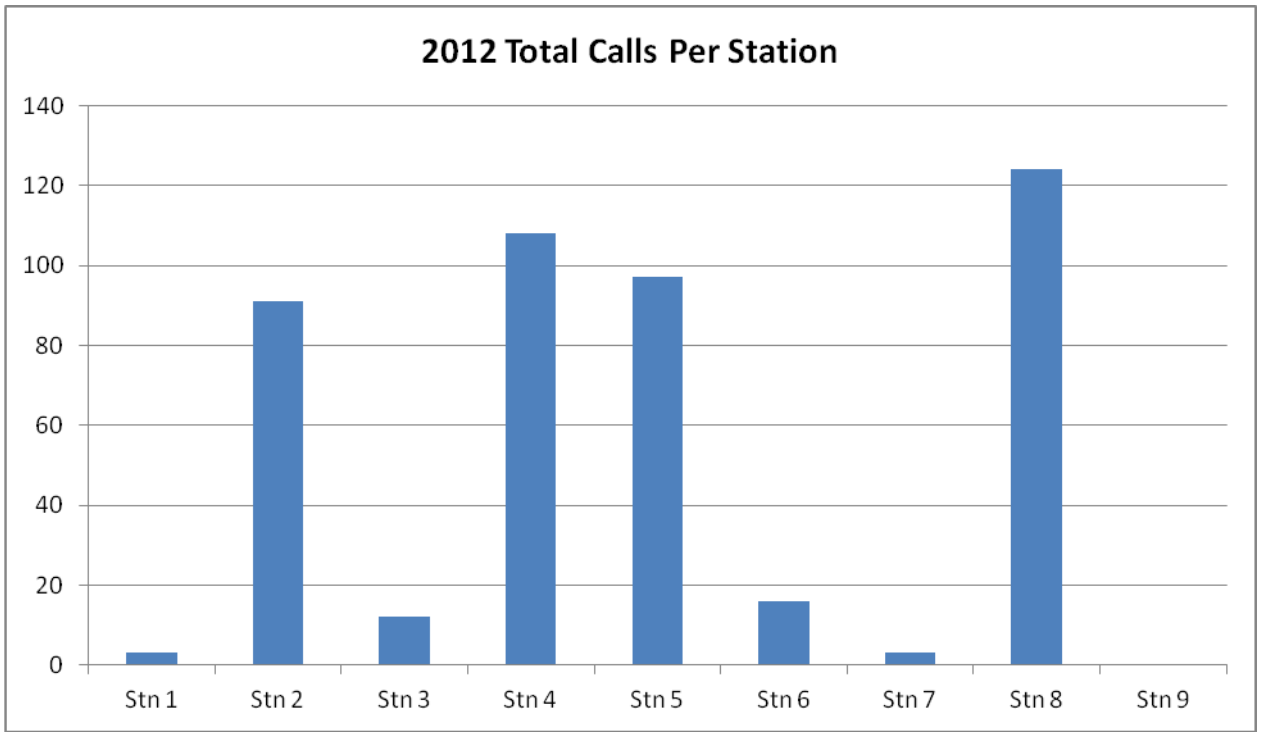
FIGURE(S) 6: Comparison of Responses Data between Fire Stations – Based on Response Data Supplied by Kingston Fire Dispatch





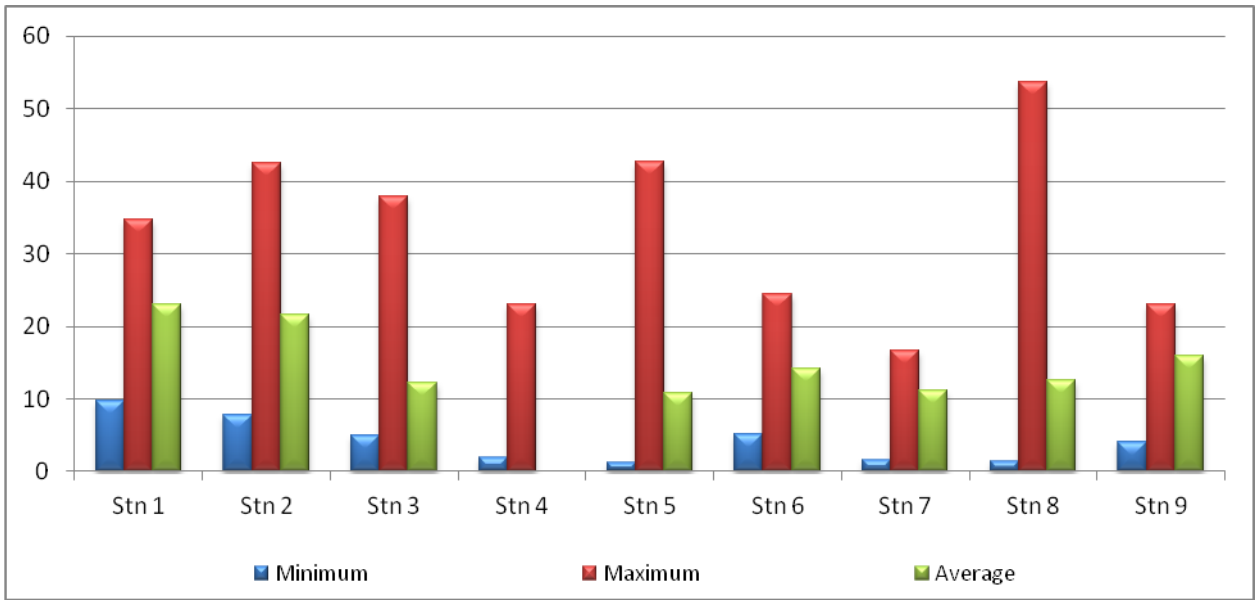
2012 Response Data for ALL Fire Stations



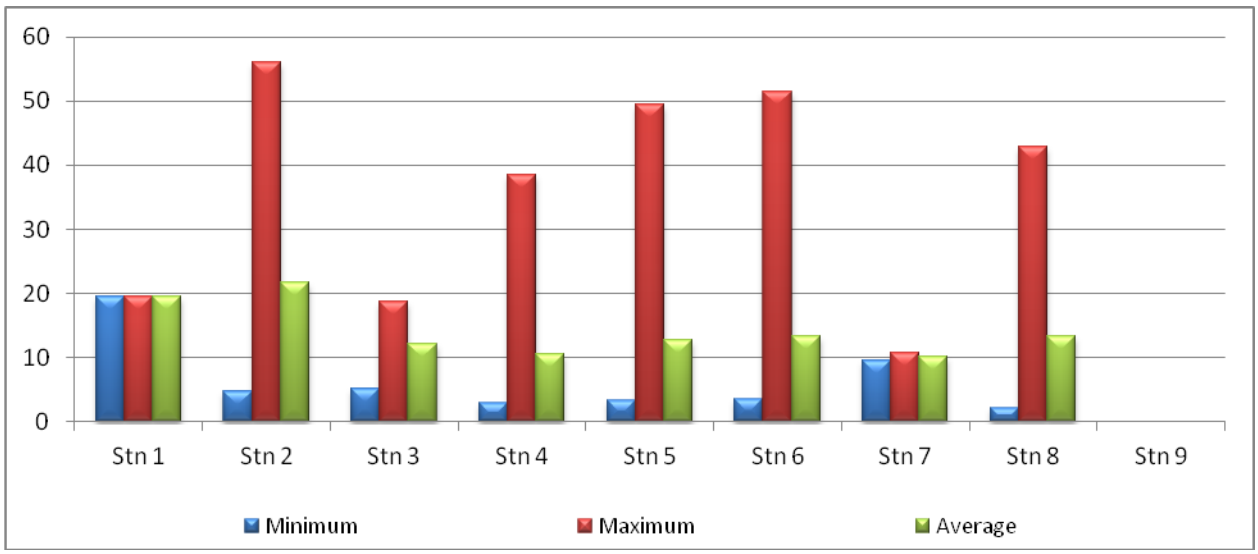


FIGURE(S) 6: Response Times for Fire Stations (minimum, maximum and average)

2011 Response Times	Stn 1	Stn 2	Stn 3	Stn 4	Stn 5	Stn 6	Stn 7	Stn 8	Stn 9
Minimum	9.8	7.7	5	1.9	1.2	5.1	1.6	1.4	4
Maximum	34.7	42.5	37.8	23	42.7	24.4	16.6	53.6	23
Average	22.97143	21.50769	12.2931	11.603.3	10.74124	14.225	11.16154	12.48854	15.96667



2012 Response Times	Stn 1	Stn 2	Stn 3	Stn 4	Stn 5	Stn 6	Stn 7	Stn 8	Stn 9
Minimum	19.5	4.8	5.2	2.9	3.3	3.5	9.6	2.2	
Maximum	19.5	56	18.7	38.4	49.5	51.5	10.8	42.9	
Average	19.5	21.63974	12.15	10.61512	12.77033	13.325	10.1	13.29244	



Recommendations:

- A detailed review and annual update on response times should be reported and quantified to Township Council to offer them a clear understanding of how the fire service is meeting the expectations of the community.

Based on the "call per station" data; it would appear that stations 1, 7 and 9 are responding to the least amount of calls as compared to the other six stations.

- It is recommended fire station 9 be relocated from its present location and moved closer to a main roadway as noted in the maps in Appendix "C". This would make station 9 more effective and useful in the overall response coverage for the township

- If relocation of station 9 is not a consideration of Council then it is recommended that fire station 9 be closed due to the level of call volume and related volunteer firefighter staffing levels for each station. Station 8 is well situated to meet the present call demand. Volunteers from 9 should be retained (if possible) to work out of other stations.

- Station 1 responded to less than 10 calls (as the primary response station) in 2012, however due to its unique location in the upper northern area of the township, a need for this station still exists. If closing of this station is a consideration then a review of an automatic aid response agreement with a neighbouring fire department should be investigated.

Associated Costs:

- The estimated costs are as follows:
    - If station 9 is relocated then an approximate building cost of $200 - $300.00 per square foot should be expected – for example if a one bay 3,500 sq ft building is constructed, the cost would be approximately $700,000.00 - $1,050,000.00 with a build timeline of approximately one year.
        - ***Further information on building considerations is noted below.***
    - If station 9 is decommissioned then a savings related to building taxes, services and maintenance would be realized along with the reduction of one fire truck to be replaced and maintained.
    - Any volunteer firefighters should still be retained and asked to respond from another station. Therefore no cost related to this part of the recommendations.

***Building Attributes for a Fire Station**

The above noted costs take into consideration major fire station functional areas such as:

- An apparatus bay: This is where the fire fighting and emergency response vehicles are stored.
- Apparatus bay support and vehicle maintenance: These industrial spaces are where the vehicles and other firefighting equipment are cleaned, maintained, and stored.
- Administrative and training areas: These include offices, dispatch facilities, and training and conference rooms.
- Residential areas: These include the day room/kitchen, and other areas such as showers and bathrooms.

The primary driver for a volunteer fire station layout and functional space is to separate the functions such as industrial maintenance spaces and residential spaces. These spaces need to be separated to eliminate the transmission of vehicle exhaust and other possible contaminates (such as dust and water) into the residential/office spaces.

Fire Stations

As previously noted, South Frontenac Fire & Rescue provides emergency service response from nine fire stations. Based on visits to the stations, the facilities appear to need varying levels of repairs, updating of facilities and even possible relocation.

Each station will be addressed individually.

Notes:

- *Appendix "A" contains a copy of the building inspector's reports*
- *Any health and safety related items have been **bolded and italicized***
- *A further overview of general health and safety related issues with accompanying pictures is also included at the end of this station review section.*

Station #1 – Bradshaw

Station #1 is located Anderson Rd. South, which is the northwest portion of the Township. This station was built in 1980 and contains two bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

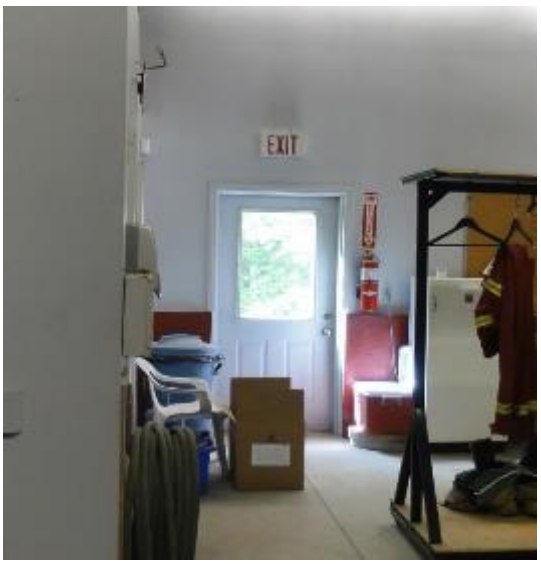
- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $75,000.00 and 4 weeks work)***

- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $4,000.00 and 1 weeks work)***
- Remove vegetation various locations of the building (Budget costs $1,000.00 and 2 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $25,000.00 and 3 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Repairs to concrete slab (no floor drainage) (Budget $20,000.00 and 3 weeks work)
- Various electrical and mechanical items (All small and too many to list) (Budget $5,000.00 and 1 weeks work)

Assign a working budget of $150,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $150,000.00 **Total approximate time = 12 – 13 weeks.**

Additional item of concern at station 1



The exit noted in these two pictures has a fall hazard as it opens out into a bush area and the step down is approximately 8 – 10 inches. Consideration should be given to incorporating a more gradual step down where possible.

Station #2 –Burridge

Station #2 is located on Burridge Rd, which is the northeast portion of the Township. This station was built in 1970 and contains two bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) (Budget $20,000.00 and 3 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 3 days work)***
- Damage to siding, soffit, fascia and eave troughs at various locations (Budget costs of $3,000.00 and 2 days work)
- Remove Vines various locations of the building (Budget costs $1,000.00 and 2 days work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Storage solutions Upper Area and Exterior (Shelving etc) (Budget $20,000.00 and 3 weeks work)
- Misc repairs too many to list (Budget $20,000.00 and 4 weeks work)
- Concerns over Propane protection and gas filling station (Budget $30,000.00 and 4 weeks work)

Assign a working budget of 130,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $130,000.00 **Total approximate time = 16 – 17 weeks.**

Pictures noting some of the items for station 2 requiring repairs


Wind damage to the siding needs to be repaired


Electrical issues as noted in the picture were observed and should be addressed.

Station #3 – Verona

Station #3 is located on Highway 38, which is the midwest part of the Township. This station was built in 1998 and contains two bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition and upgrade of washing facilities and various repairs (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $65,000.00 and 4 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 2 days work)***
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work)
- Damaged Mechanical Systems (Budget $3,000.00 and 2 days work)

Assign a working budget of $83,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $83,000.00 Total approximate time = 5 – 6 weeks.

Picture noting the electrical panel that needs to be protected from water contamination at station 3

Station #4 – Hartington

Station #4 is located on Holleford Rd, which is the southwestern area of the Township. This station was built in 1958 and contains four bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $65,000.00 and 5 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $8,000.00 and 1 weeks work)***
- Damage to metal soffit, fascia and eave troughs at various locations (Budget costs of $2,000.00 and 2 days work)
- Remove vegetation various locations of the building (Budget costs $1,000.00 and 2 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $35,000.00 and 3 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Repairs to concrete slab (Floor is various Heights) (Budget $30,000.00 and 3weeks work)
- Adjustments to overhead doors etc (Budget $2,000.00 and 3 days work)
- Various electrical and mechanical items (All small and too many to list) (Budget $10,000.00 and 2 weeks work)
- Open cistern in floor covered (adds much unneeded humidity to the building) (Budget unknown – work schedule unknown – more investigations might be needed)

Assign a working budget of $180,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $180,000.00 **Total approximate time = 15 – 16 weeks.**

Pictures noting some siding damage due to water/grading issues along with some front driveway paving repairs required for station 4

Station #5 – Sydenham

Station #5 is located on Stage Coach Rd, which is the Southern area of the Township. This station was built in 1972. It contains three bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $55,000.00 and 4 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 3 days work)***
- ***Repair worn floor tiles on stairs to second level (Budget $500.00 and 1 day work)***
- Wind damage to metal soffit, fascia and eave troughs by radio tower (Budget costs of $2,000.00 and 2 days work)
- Remove Vines various locations of the building (Budget costs $1,000.00 and 2 days work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 week work)
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work)

Assign a working budget of $85,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $85,000.00 Total approximate time = 7 – 8weeks.

Pictures of some items noted in station 5 relating to storage and washing of gear

Storage issues were noted throughout the building but were most prevalent in the upper floor area of the station.

Industrial washer and dryers should be installed to deal with the cleaning of firefighter bunker gear. This type of washing system should be available in at least 3 stations to afford access by all firefighters.

Station #6 – Perth Rd

Station #6 is located on Perth Road, which is the central part of the Township. This station was built in 1950. It contains two bays for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Repairs to building for mold (Daylight visible in exterior wall at corner on main room) (Budget $180,000 and 6 months work)***
- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $85,000.00 and 5 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $8,000.00 and 1 weeks work)***
- Damage to metal soffit, fascia and eave troughs at various locations (Budget costs of $2,000.00 and 2 days work)
- Remove vegetation various locations of the building (Budget costs $2,000.00 and 3 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $35,000.00 and 3 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Various electrical and mechanical items (All small and too many to list) (Budget $50,000.00 and 6 weeks work)

Assign a working budget of $400,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $400,000.00 **Total approximate time = 9 – 10 months.**

Pictures associated with mold and water damage issues at station 6

Some major mold and water damage issues were noted during the inspection of this station. A full mold remediation program needs to be implemented with this station.

Station #7 – Latimer Rd

Station #7 is located on Latimer Rd, which is the southern part of the Township. This station was built in 1990. It contains one front bay and one side bay for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Structural reinforcement of cement block wall as door between fire truck bays (Budget $5,000.00 and 1 weeks work)***
- ***Addition of washing facilities (Washroom, Shower and Laundry) - Addition of septic system needed (Budget $60,000.00 and 4 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $2,000.00 and 1 weeks work)***
- Wind damage to metal soffit, fascia and eave troughs to various locations of the building (Budget costs of $3,000.00 and 1 weeks work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Some deteriorate cement block foundation located on the rear corner by the oil tank (Budget cost of $6,500.00 and 1 1/2 weeks work)
- Adjustments to overhead door systems needed (Budget $1,500.00 and 1 days work)

Assign a working budget of $94,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $94,000.00 Total approximate time = 9 – 10 weeks.

Pictures of some items of concern at station 7

Wind damage to the siding and downspouts were noted.

The picture below identifies an area that was cut out in a block wall that requires some structural reinforcement with angle iron.

Station #8 – Sunbury

Station #8 is located on Battersea Rd, which is the south eastern part of the Township. This station was built in 1977 and contains three front bays and one side bay for fire apparatus. This is not a drive through station.

The following areas were noted as requiring attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition and upgrade of washing facilities (Washroom, Shower and Laundry) - Addition of new septic system may be needed due to increased flow (Budget $25,000.00 and 4 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $2,000.00 and 3 days work)***
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work)

Assign a working budget of $35,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $35,000.00 Total approximate time = 4 – 5 weeks.

Picture of additional item of concern for station 8

There were no other unique issues noted with this station other than what is identified in the building inspector's report. However, it was noted that during the winter months (November to March) the fire department is required to vacate this vehicle storage space to allow for snow plows to be parked.

Station #9 – Burnt Hills

Station #9 is located in the Seeley's Bay area which is the south eastern part of the Township. This station was built in 1983 and contains only one bay for fire apparatus. This is not a drive through station.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- ***Addition of washing facilities (Washroom, Shower and Laundry) - Addition of septic system needed (Budget $80,000.00 and 4 weeks work)***
- ***Separation of electrical systems for any exposure to water and enclosure of panels (Budget $2,000.00 and 1 weeks work)***
- ***Mold found in vehicle at station and signs of mold in station. More investigation required (budget and timing unknown)***
- Some deteriorate cement block foundation located at various locations (Budget cost of $6,500.00 and 1 1/2 weeks work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Damage to metal soffit and fascia to various locations of the building (Budget costs of $2,000.00 and 1 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Removal of vegetation at various locations around building (Budget $1,000.00 and 2 weeks work)
- Concerns of propane tank protection (Budget $10,000.00 and 2 weeks work)

Assign a working budget of $124,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

Total approximate cost = $124,000.00 Total approximate time = 12 – 13 weeks.

Additional pictures relating to concerns with station 9

During the review of station 9, electrical cords for the fire vehicle were found to be laid across the floor. There were also signs of mold found in the passenger cab of the vehicle.

As already noted, the health and safety related items for each fire station have been highlighted in ***bold and italicized***. It is these items that need to be addressed first.

The overall cost to implement all of the noted repairs for **the nine fire stations would be approximately = $1,281,000.00**

Following is a general overview (pictures included) of associated health and safety related items requiring attention at most if not all of the fire stations. Most of these pictures support items already noted in the building inspector's reports.

Review of General Health and Safety Items of Concern with MOST Stations

1) All of the fire stations lack suitable safe storage of the firefighter's personal gear. With all of the gear left out in the open, it is susceptible to contamination by the exhaust fumes from the vehicles. This contamination from the vehicle exhaust fumes is a concern as it can degrade the efficiency of the gear and also create an inhalation hazard to the wearer.

2) There is a lack of "self-closing" doors leading from the apparatus floor to the working, training and eating areas of the fire stations. To reduce exposure to the exhaust gases from the vehicles, all of these areas should have self-closing doors and/or proper separations.

3) There was also a notable lack of proper storage areas/facilities for the equipment. This in

itself creates a tripping/safety hazard to the staff. Some of the product is also stored around the furnace system which is a hazard in itself.

4) The furnace systems for all of the fire stations are located on the apparatus (vehicle) bays. This means that exhaust fumes are being taken into the furnace systems and spread throughout the fire station. An assessment should be conducted to see what effect this has on the air quality of each station's office/training areas.

5) Washroom facilities for both male and female firefighters were also an issue and should be addressed. However the main concern is the lack of shower/wash up facilities in all but one station – station 2.

With the exception of station 2, no other station has shower facilities for the firefighters. Based on the Occupational Health and Safety Act, workers who may come in contact with hazardous chemicals are to be afforded proper washing and clean up facilities.

Example of general washroom facilities found at most stations.

Example of shower facility found in station 2. At the very least a single shower facility should eventually be installed in ALL fire stations. A transitional period which offers "every other station" as a shower/wash up facility would still prove more effective that what is presently available.

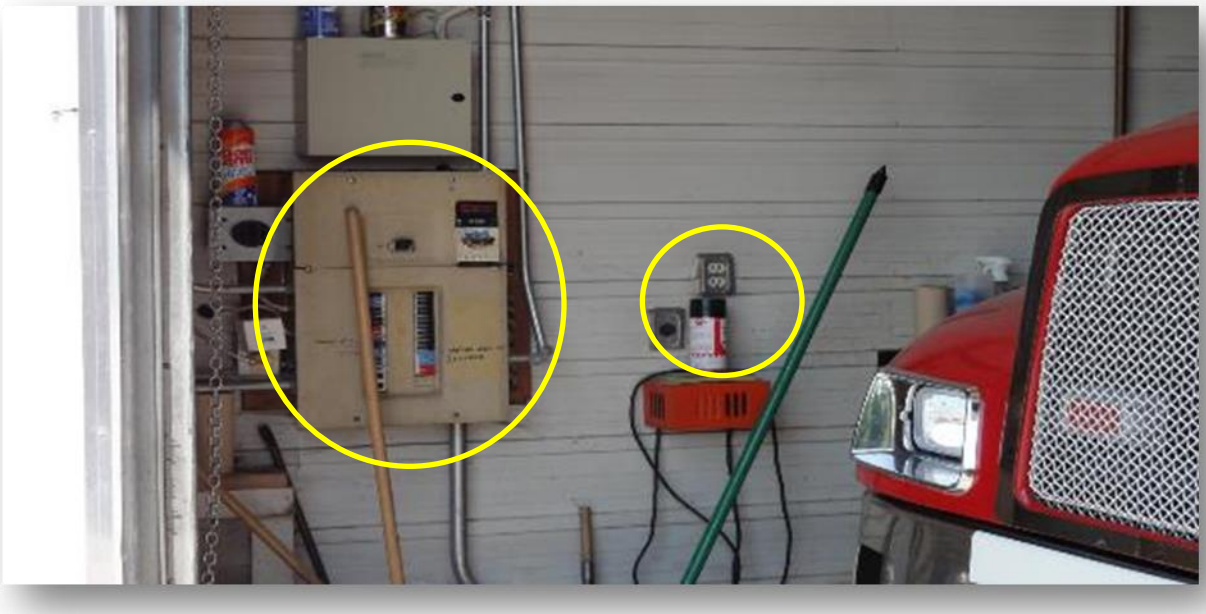
Firefighters who have become contaminated with such things as bodily fluids or products of combustion should not be expected to drive home in their personal vehicles and risk the chance of spreading these contaminants.

6) The tour of the fire stations also identified a lack of Eyewash Stations for the firefighters. In

the chance that they get foreign matter in their eyes; there are no eyewash stations to flush the contaminant out.

7) Receptacle's that are on the apparatus floor that are susceptible to water contamination should be outfitted with GFI's.

8) Electrical panels should be properly covered and protected from any physical damage or contamination from water.



9) Electrical plug ins for the vehicles should have the cords properly secured and suspended so

as not to create a safety hazard

10) Space between vehicles must allow for safe and easy access between vehicles to as to reduce the possibility of persons becoming trapped between vehicles as they are being driven in and

out of the fire station.

Following is a compilation of health and safety related information that addresses the 10 comments/recommendations noted in this set of photos.

Further information can be found in the building inspector's report included Appendix "A"

R.R.O. 1990, Regulation 851
Industrial Establishments

PART I – SAFETY REGULATIONS

PRE-START HEALTH AND SAFETY REVIEWS
7. (1) In this section
"Apparatus" means equipment or a machine or device (appareil")

PREMISES
11. A floor or other surface used by any worker shall,
(a) be kept free of,
i. (obstructions,
ii. hazards, and
iii. accumulations of refuse, snow or ice; and

(b) not have any finish or protective material used on it that is likely to make the surface slippery.

R.R.O. 1990, Reg 851, s. 11

Most fire stations have relied upon drains cut into the floor covered with metal grates (easily accessed floor clean outs) channeling the collected water into an oil/water separator. Currently some of the stations lack proper drainage or any type of drainage at all to aid in keeping the apparatus bay surfaces clear of any obstructions or hazards, such as snow, ice and water.

12. Clearances between a moving part of any machine or any material carried by the moving part of the machine and any other machine, structure or thing shall be adequate to ensure that the safety of any worker in the area is not endangered. R.R.O. 1990, Reg, 852, s. 12.

Some of the fire stations lack enough space between the vehicles to allow for safe passage between the vehicles. If a vehicle should be moved without the prior knowledge of the firefighter, an injury could occur.

PART III – INDUSTRIAL HYGIENE

124. Where a worker is exposed to a potential hazard of injury to the eye due to contact with a biological or chemical substance, an eyewash fountain shall be provided. R.R.O. 1990, Reg. 851, s. 124.

125. Where a worker is exposed to a potential hazard of injury to the skin due to contact with a substance, a quick-acting deluge shower shall be provided. R.R.O. 1990, Reg. 851, s. 125.

127. An industrial establishment shall be adequately ventilated by either natural or mechanical means such that the atmosphere does not endanger the health and safety of workers. R.R.O. 1990, Reg. 851, s. 127.

The firefighters have been at risk of exposure not only to themselves but also to the family who supports them when they return home. The current use of space in relation to washing and decontamination facilities should be updated to handle the contamination of the firefighters gear by diesel exhaust fumes and other contaminates.

The following are suggested options to help alleviate this exhaust contamination.

- ***Ensuring natural ventilation is supplied and maintained whenever a vehicle is started and moved***
- ***Separations from the apparatus floor and the training/living areas of the station need to be installed and maintained***
- ***Installation of mechanical ventilation systems designed for fire stations, and***
- ***Adequate clothing storage should be provided for personnel.***

134. Where workers are exposed to a substance that,
(a) is poisonous by ingestion; and
(b) can contaminate the skin,
Shower rooms and individual lockers for street and work clothes shall be provided. R.R.O. 1990, Reg. 851, s. 134.

The following is the list of amenities suggested for proper decontamination areas and medical clean up:

- ***Proper hot water system for each station***
- ***Separate shower and bathroom facilities must be provided. Some of the existing stations were designed to accommodate only men. To avoid potential problems men and women need separate showers and bathrooms. As a temporary fix, a system using prominent signs and an inside lock has worked in some situations.***
- ***Adequate clothing storage should be provided for personnel.***

Multiple waterproof GFI electrical outlets with 25 amp minimum capacity should be installed in the apparatus floor where water contamination is possible.

Generators/Emergency Power

One final point noted with each fire station was the lack of an emergency power source in the form of a generator. As an emergency response facility and a possible gathering place for emergency responders and other assisting agencies; all stations should have a backup power source in the event of a community power failure.

The Township should look at a gradual implementation plan for the installation of generators at "key" fire stations. These stations would be the gathering place for firefighters and other emergency personnel during a large spread power outage.

The cost for installing a permanent backup generator system would depend on the type of fuel and amount of kilowatts required at each station. However, a general estimate would be anywhere from $60,000.00 to $100,000.00 per station.

Recommendation:

- Each fire station or at the very least, "key" stations (one in each main geographical area) should have a backup power system installed

Associated Costs:

- Depending on power needs; costing could range from $60,000.00 to $100,000.00 per station.

4. Training

Although training was not a specific component of the initial study requested by the Township, a general review of this was conducted by Emergency Management and Training Inc.

During our interviews with the Fire Chief and his Deputies, it was noted that training nights for

the stations are regularly scheduled to ensure that all required training topics are completed by the firefighters. To ensure that they are following an approved program, the department follows the Ontario Fire Marshal's (OFM) Firefighter Curriculum as their basis for training its firefighters.

It was also noted that the department has 10 Trainer Facilitators who are certified by the Ontario Fire Marshal's Office to train and "sign off" the firefighters on the tasks associated with the Firefighters Curriculum.

To further ensure compliance with the OFM program, all related training hours are logged.

Recommendation:

- At this time it would appear that the department is well set up to conduct the OFM Firefighter Curriculum program to its firefighters. However, the department should enhance its training programs in the areas of any specialized and officer training programs. This might require sending staff to the fire college.
    - As such, SFFR should work with neighbouring fire departments to bring any required programs to a regional facility whenever possible.
    - A general review and needs analysis should be conducted by the fire chief to identify future firefighter and officer training needs.

Associated Costs:

- This would depend on programs available and related instructor costs or the cost of sending SFFR staff to take the program.

5. Special Operations

Special operations encompass such functions as hazardous materials response, water rescue, high angle and technical rescue. The department has response capability for water related incidents but does not conduct hazardous materials response to the technical level. If a hazardous incident occurs within the Township, Kingston Fire Department or another bordering fire department would be contacted to assist with the incident.

With the amount of calls related to these two areas of operations (hazmat and water rescue), there is no indication that further resources are required in this area.

Recommendation:

- At this time it would appear that the department is well set up to meet the needs of the community in relation to these types of calls.

Associated Costs:

- No new program costs recommended at this time.

6. Communications/Dispatch

Dispatch services for South Frontenac Fire & Rescue are provided by the Kingston Fire Department.

Presently, it would appear that the dispatching arrangement with Kingston Fire is meeting the needs and expectations of SFFR. However, it would be advantageous to more accurately track the station responses to all calls. For example, at this time the data received by Kingston Fire Dispatch notes only the primary station that responded to the call. To ensure that an effective response arrives at the scene, SFFR sends two stations for all calls. Therefore stations that appear to have a low call volume, may in fact respond to quite a few calls but the Kingston data does not presently identify this.

Recommendation:

- The fire chief should contact Kingston Fire Dispatch to request that SFFR dispatch data reflects the primary and secondary units that are being dispatched to all types of calls.

Associated Costs:

- No additional costs unless a service contract needs to be renegotiated to include the extra tracking of data.

Physical Resources

Fire Stations

Comments and recommendations in relation to the fire station locations and other

requirements have been already made under the headings of Fire Suppression and Fire Station Locations. Therefore no further discussion is required in this section.

Fire Vehicles

When assessing a fire department's ability to respond and meet the needs of the community; the Fire Underwriters Survey utilizes the age of a fire truck as one of its guidelines. In the following chart, the highlighted area is what South Frontenac should be considering when it comes to forecasting it fire truck replacements.

Fire Underwriters Survey – vehicle replacement recommendations

(Green area reflect South Frontenac's vehicle expectations for the community)

Apparatus Age	Major Cities [3]	Medium Sized Cities [4] or Communities Where Risk is Significant	Small Communities [5] and Rural Centres
0 – 15 Years	First Line	First Line	First Line
16 – 20 Years	Reserve	2nd Line	First Line
20 – 25 Years [1]	No Credit in Grading	No Credit in Grading or *Reserve* [2]	No Credit in Grading or *Reserve* [2]
26 – 29 Years [1]	No Credit in Grading	No Credit in Grading or *Reserve* [2]	No Credit in Grading or *Reserve* [2]
30 Years [1]	No Credit in Grading	No Credit in Grading	No Credit in Grading

1. *All listed fire apparatus 20 years of age and older are required to be service tested recognized testing agency on an annual basis to be eligible for grading recognition (NFPA 1071)*
2. *Exceptions to age status may be considered in a small to medium sized communities and rural centre conditionally, when apparatus condition is acceptable and apparatus successfully passes required testing*
3. *Major cities are defined as an incorporated or unincorporated community that has:*
    a. *a populated area (or multiple areas) with a density of at least 400 people per square kilometre; AND*
    b. *a total population of 100,000 or greater.*
4. *Medium Communities are defined as an incorporated or unincorporated community that has:*
    a. *a populated area (or multiple areas) with a density of at least 200 people per square kilometre; AND*
    b. *a total population of 1,000 or greater.*
5. *Small Communities are defined as an incorporated or unincorporated community that has:*
    a. *no populated areas with densities that exceed 200 people per square kilometre; AND*
    b. *does not have a total population in excess of 1,000.*

The Fire Underwrites Survey (FUS) is reviewed by insurance companies and as long as the fire department adheres to the recommended replacement timelines through an identified capital replacement schedule, then the department will retain its fire rating (in relation to this area).

By ensuring that the vehicles are being replaced on a regular schedule, the Township is also

demonstrating its due diligence towards ensuring a dependable response fleet for the fire department and the community it serves. This in turn will keep the community's fire rating in good stance, which subsequently reflects on commercial and residential insurance rates.

Another standard that supports a regular replacement schedule of fire vehicles is the NFPA 1911, Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. This standard includes guidance on retirement criteria for fire apparatus. This standard recommends that all front run vehicles are replaced on a 15 year cycle. It should be noted that this replacement cycle is an industry recommendation that is not always consistently adhered to throughout the fire service.

A brief survey (of other fire departments) noted that some departments are replacing their front run units as early as 12 years up to a maximum of 20 years. The only vehicles that are kept longer than 20 years are "back up" units that are put into service on a very sporadic basis.

There is no national standard that legally mandates the replacement of emergency vehicles, but it must be kept in mind that it is critical to replace these and other apparatus before they become unreliable. Over the long term, delaying the replacement is inadvisable because it will add to the overall costs of the apparatus. But more importantly, when these vehicles are needed to perform; they are needed.

For the most part, the SFFR is well equipped with pumper trucks, rescues and tankers. There also appears to be a good level of support vehicles and equipment to meet the general needs of the department.

Replacement schedules are identified in the capital forecast for the fire trucks and large cost items.

Recommendations:

- The Township should maintain a schedule that compiles with the FUS recommendations on the replacement of vehicles from a first line to a 2nd line unit.

Associated Costs:

- None, other than continued financial forecasting of equipment replacement

Volunteer Staffing

The South Frontenac Fire & Rescue organization chart identifies a present strength of approximately 140+ positions. This equates to one full time fire chief to manage 140

volunteer firefighters.

Volunteer firefighters are a dedicated group but due to job, family and other non-fire department demands or opportunities, retention of volunteer firefighters is an ongoing issue. The fire chief had noted that the department's turnover rate is approximately 30% over the past years. This turnover is not an isolated incident as all communities with volunteer firefighters are faced with this challenge of retention. This in itself creates a strain on the SFFR service in relation to being able to respond in an efficient and effective manner on an ongoing basis.

This turnover of staff also creates a training issue, in that all responding personnel must be trained to a level that allows them to effectively meet the demands of the job in a safe manner.

Recommendations:

- Staffing levels need to be enhanced in many of the fire stations. Recruitment and retention is always a challenge for volunteer fire departments.
    - Fire stations 1, 2 and 9 have less than 10 volunteers each to respond to calls, with stations 1 and 9 being of greatest concern as they only have 4 and 5 respectively. This means that on average, there is less than an effective response force from each station. This necessitates a two station call out for all calls.
    - To be effective on even a minimal level, each station must be able to count upon 4 firefighters being able to respond at any given time.

Associated Costs:

- Depending on the approved staffing levels as supported by council; the per-firefighter average costing could be applied by the fire chief in his report to council.

Finance

Operating Budget

The South Frontenac Fire & Rescue has an annual operating budget of approximately one million dollars and a capital forecast that fluctuates based on the equipment that has been identified for replacement.

Capital Forecasts

The capital forecast for the department has identified a replacement cycle for all of the larger ticket items such as fire trucks, utility vehicles and small equipment.

Recommendation:

- SFFR should periodically review its replacement forecasts to ensure that the Township will be able to meet these targeted timelines.
- SFFR should establish a capital forecast for the renovation / replacement of fire stations

Associated Costs:

- Required upgrades/repairs for the fire stations as noted in this report. Refer to pages 30 – 40.

External Relationships and Partnerships

South Frontenac Fire & Rescue has good working relationships with other fire departments in the Region and surrounding jurisdictions. Mutual aid agreements, which provide aid to South Frontenac and other agencies when requested, are in place. Some related training in relation to mutual aid is conducted with other fire agencies in the region.

Recommendation:

- None – external relationships and partnerships are reported to be working well.

Associated Costs:

- No additional costs identified at this time.

Final Summary of Recommendations and Possible Efficiencies

The following chart provides further overview of the recommendations found throughout this

report along with any related costs that can be realized in the associated areas.

Recommendation Number	Subject	Recommendations			
		Description	Solution	Estimated Time Line	Estimated Costs
1	Strategic or Master Plan	The fire department does not have a current strategic or master plan in place.	One should be developed that takes into consideration the Township's 2013 Growth Study and other related information such as population and demographics that will affect the demands and response criteria on the fire services	3-4 months	$20,000 - $40,000
2	Identify a baseline response criteria	Baseline and Benchmarks for response times are not formally recognized.	• To ensure that the fire department is meeting the needs of the community and the expectations of its Council; the fire chief should work towards identifying a baseline and benchmark set of response criteria.. • A detailed review and annual update on response times should be reported and quantified to Township Council to offer them a clear understanding of how the fire service is meeting the expectations of the community.	Ongoing with annual updates	No direct costs to this item
3	Fire prevention	Fire prevention is the least costly way of providing loss control, additional focus on fire prevention is required, based on the Township's size and forecasted growth.	Volunteer firefighters, should be utilized as much as possible to assume more responsibility for inspections of existing structures and for educating the public about fire safety.	Ongoing with annual review	Depends on level of increase usage of volunteer firefighters
4	Simplified Risk Assessment	The Simplified Risk has identified concerns within the Community	Work on the updated Simplified Risk Assessment Should be started in 2014 to meet the SRA program's goals and expectations.	Ongoing – every 3 to 5 years	No cost
5	Response Data	Reviewing of the SFFR response times is critical to ensuring timely responses.	A detailed review and annual update on response times should be reported and quantified to Township Council to offer them a clear understanding of how the fire service is meeting the expectations of the community.	Ongoing – annual updated	No cost
6	Fire station closings and/or relocations	Based on call volume and related response times; stations 1, 7 and 9, on the average are responding to less than 10 calls (each) per year (as the primary response station). In	• It is recommended fire station 9 be relocated from its present location and moved closer to a main roadway as noted in the maps in Appendix "C". This would make station 9 more effective and useful in the overall response coverage for the township. • If relocation of station 9 is not a consideration of Council then it is recommended that fire station 9 be	Dependant on option chosen	Depends on option chosen

		fact station 9 did not respond to any calls in 2012. Based simply on this data, the following recommendations are being made.	closed due to the level of call volume and related volunteer firefighter staffing levels for each station. Station 8 is well situated to meet the present call demand. Volunteers from 9 should be retained (if possible) to work out of other stations. • Station 1 responded to less than 10 calls (as the primary response station) in 2012, however due to its unique location in the upper northern area of the township, a need for this station still exists. If closing of this station is a consideration then a review of an automatic aid response agreement with a neighbouring fire department should be investigated.		
7	Fire Station repairs	Numerous upgrades and repairs for the fire stations were noted during the station visits.	The list of Fire station repairs, upgrades and associated costs located in the body of this report and in Appendix "B" need to be evaluated and prioritized to ensure future functionality of the existing fire stations. • All health and safety related repairs/upgrades need to take precedence.	Refer to inspection reports	Refer to inspection reports
8	Emergency Power	None of the fire stations contained an emergency backup power source.	Each fire station or at the very least, "key" identified stations (i.e. one in each main geographical area) should have a backup power system installed.	Depending on program	$60 - $100k Per station
9	Training	Ongoing training of the firefighters and officers is a requirement by the Occupational Health and Safety Act.	At this time it would appear that the department is well set up to conduct the OFM Firefighter Curriculum program to its firefighters. However, the department should enhance its training programs in the areas of any specialized and officer training programs. This might require sending staff to the fire college. • As such, SFFR should work with neighbouring fire departments to bring any required programs to a regional facility whenever possible. • A general review and needs analysis should be conducted by the fire chief to identify future firefighter and officer training needs.	Ongoing	Based on training needs of the staff
10	Communications	Dispatch operations are conducted by the Kingston Fire Dispatch	The fire chief should contact Kingston Fire Dispatch to request that SFFR dispatch data reflects the primary and secondary units that are being dispatched to all types of calls.	Depending on dispatch software to track information	No additional Costs – depending on dispatch contract.

11	Fire Department Apparatus	Appropriate schedule for vehicle replacement is recommended by FUS and the NFPA	In relation to vehicle life cycling, the Township should continue to adhere to an appropriate schedule for both the replacement and progression of the vehicles being moved from "first run" to "2nd run (back up)" units.	Replace as identified by FUS	Depends on vehicle as noted in budget
12	Staffing levels	Staffing levels need to be enhanced in many of the fire stations. Recruitment	Recruitment and retention is always a challenge for volunteer fire departs due to the firefighters moving due to career of family pressures. • Fire stations 1, 2, 7 and 9 have less than 10 volunteers each to respond to calls. This means that on average there is less than an effective response force from each station. This necessitates a two station call out for all but the simplest of calls. • To be effective on even a minimal level, each station should be able to count upon 4 firefighters being able to respond at any given time.	Ongoing issue	Ensure budget support to keep staffing levels as required
13	Finance	Capital budget	• SFFR should periodically review its replacement forecasts to ensure that the Township will be able to meet these targeted timelines. • SFFR should establish a capital forecast for the renovation / replacement of fire stations	Ongoing	As Required

Conclusion

During the review conducted by Emergency Management and Training Inc., it was noted that the volunteer firefighters are truly dedicated to the community they serve. It was further noted that the Council, CAO and fire chief are sincerely committed to ensuring the safety of the community and the firefighters of SFFR.

Based on the present staffing, equipment and fire stations locations, South Frontenac Fire & Rescue is endeavoring to offer the most efficient and effective service possible.

As noted in the recommendations (throughout this report), there are some savings that can be realized by the reduction of a fire station, however, the present compliment of volunteer firefighter staffing should be retained and increased if possible as this would help to ensure a more fulsome response to incidents.

The key concerns noted in this report are more related to the state of some of the fire stations. Some suggestions are there to increase the overall efficiency of each fire station in relation to meeting the needs of the firefighters. Whereas other recommendations are items that affect the health and safety of the firefighters and must be addressed.

All costs and associated times are approximate estimates that can implemented through prioritization between the Fire Chief, CAO and Council. As noted in this report, any health and safety related issues need to be at the top of the list.

The community of South Frontenac is served by dedicated group of volunteers that for the most part are well equipped to meet the response needs of the community.

Definitions and References

Automatic Aid Agreements – Fire Prevention and Protection Act, 1997 (FPPA 1997)

4. For the purposes of this Act, an automatic aid agreement means any agreement under which,

a) a municipality agrees to ensure the provision of an initial response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department in the municipality is capable of responding more quickly than any fire department situated in the other municipality; or

b) a municipality agrees to ensure the provision of a supplemental response to fires, rescues and emergencies that may occur in a part of another municipality where a fire department situated in the municipality is capable of providing the quickest supplemental response to fires, rescues and emergencies occurring in the part of the other municipality. 1997, c. 4, s. 1 (4).

- *Automatic aid is generally considered in other jurisdictions as a program designed to provide and/or receive assistance from the closest available resource, irrespective of municipal boundaries, on a day-to-day basis.*

National Fire Protection Association (NFPA) Documents:

- NFPA 1851 – Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2008 edition
- NFPA 1500 – Standard on Fire Department Occupational Safety and Health Program, 2013 editions
- NFPA 1581 – Standard on Fire Department Infection Control Program, 2010 edition
- NFPA 1720 – Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Volunteer Fire Departments, 2010

Municipal responsibilities (FPPA 1997)

2. (1) Every municipality shall,

a) establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and

b) provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.

Mutual Aid

a) Mutual aid plans allow a participating fire department to request assistance from a neighbouring fire department authorized to participate in a plan approved by the Fire Marshal.

b) Mutual aid is not immediately available for areas that receive fire protection under an agreement. The municipality purchasing fire protection is responsible for arranging an

acceptable response for back-up fire protection services. In those cases where the emergency requirements exceed those available through the purchase agreement and the backup service provider, the mutual aid plan can be activated for the agreement area.

Public Fire Safety Guidelines:

- PFSG 04-40A-12, Fire Prevention and Public Safety Education; Simplified Risk Assessment March 2001
- PFSG 04-41-12, Fire Prevention and Public Safety Education; Community Fire Safety Officer/Team, January 1998
- PFSG 04-08-13 on Fire Station Location, September 2004

Shared Responsibilities (FPPA 1997)

FPPA notes that;

1. Two or more municipalities may appoint a community fire safety officer or a community fire safety team or establish a fire department for the purpose of providing fire protection services in those municipalities

Appendix "A"

Fire Station Repair Recommendations and Associated Costs

Green Earth Contracting

o/o by Curby's Technical Inc.
91 Exeter Drive, Ottawa, Ontario
(613) 323-4136
curbytec1@gmail.com

August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Bedford District Station #1

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 15 years of age and is single storey wood building; exterior is clad in metal siding with wood roof trusses. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in fair to reasonable good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Remove vegetation various locations of the building (Budget costs $1,000.00 and 2 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $25,000.00 and 3 weeks work)
- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $75,000.00 and 4 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $4,000.00 and 1 weeks work)
- Repairs to concrete slab (no floor drainage) (Budget $20,000.00 and 3weeks work) - Various electrical and mechanical items (All small and to many to list) (Budget $5,000.00 and 1 weeks work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in over all budget)
- No Building Roof Inspection Was Completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $150,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
91 Exeter Drive
Ottawa, Ontario
K2J 1V6
(613) 323-4136

Green Earth Contracting

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91 Exeter Drive, Ottawa, Ontario
(613) 323-4136
curbytec1@gmail.com

August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Bedford District Station #2

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 30 years of age and is single storey wood building with wood trusses and vinyl siding, with a wood addition. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in good to better than good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Damage to siding, soffit, fascia and eave troughs at various locations (Budget costs of $3,000.00 and 2 days work)
- Remove Vines various locations of the building (Budget costs $1,000.00 and 2 days work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) (Budget $20,000.00 and 3 weeks work)
- Storage solutions upper area and exterior area at back of station (Shelving, etc) (Budget $20,000.00 and 3 weeks work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 3 days work)
- Misc repairs too many to list (Budget $20,000.00 and 4 weeks work)

- Concerns over Propane protection and gas filling station (Budget $30,000.00 and 4 weeks work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in over all budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of 130,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
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August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Verona Station #3

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 10 years of age and is single storey steel building, exterior is clad in metal siding and brick. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in good to better than good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Addition and upgrade of washing facilities and various repairs (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $65,000.00 and 4 weeks work)
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work) - Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 2 days work)
- Damaged Mechanical Systems (Budget $3,000.00 and 2 days work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in overall budget)

- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $83,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
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curbytec1@gmail.com

August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Portland District Station #4

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 25 years of age and is single storey steel "Butler" building, exterior is clad in metal siding with multiple additions of concrete blocks and various style of roof trusses. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in fair to reasonable good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Damage to metal soffit, fascia and eave troughs at various locations (Budget costs of $2,000.00 and 2 days work)
- Remove vegetation various locations of the building (Budget costs $1,000.00 and 2 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $35,000.00 and 3 weeks work)
- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $65,000.00 and 5 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $8,000.00 and 1 weeks work)
- Repairs to concrete slab (Floor is various Heights) (Budget $30,000.00 and 3weeks

work)
- Adjustments to Overhead doors etc (Budget $2,000.00 and 3 days work)
- Various electrical and mechanical items (All small and to many to list) (Budget $10,000.00 and 2 weeks work)
- Open cistern in floor (covered adds much unneeded humidity to the building) (Budget unknown – work schedule unknown – more investigations might be needed)

What was not included in review and budgets:
- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in overall budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $180,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
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August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Sydenham Station #5

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 25 years of age and is single storey steel "Butler" building, exterior is clad in metal siding. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in good to better than good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Wind damage to metal soffit, fascia and eave troughs by radio tower (Budget costs of $2,000.00 and 2 days work)
- Remove Vines various locations of the building (Budget costs $1,000.00 and 2 days work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $55,000.00 and 4 weeks work)
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $5,000.00 and 3 days work)
- Repair worn floor tiles on stairs to second level (Budget $500.00 and 1 days work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in over all budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $85,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
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(613) 323-4136

Green Earth Contracting

o/o by Curby's Technical Inc.
91 Exeter Drive, Ottawa, Ontario
(613) 323-4136
curbytec1@gmail.com

August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Perth Road Station #6

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 40 years of age and is single storey wood building, exterior is clad in metal siding with multiple additions and wood roof trusses (I am assuming it was a repair garage) . Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in very condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Damage to metal soffit, fascia and eave troughs at various locations (Budget costs of $2,000.00 and 2 days work)
- Remove vegetation various locations of the building (Budget costs $2,000.00 and 3 days work)
- Major adjustments to the exterior grading adjacent to the building (Budget $35,000.00 and 3 weeks work)
- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $85,000.00 and 5 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $8,000.00 and 1 weeks work)
- Repairs to building for mold (Daylight visible in exterior wall at corner on main room) (Budget $180,000 and 6 months work)

- Various electrical and mechanical items (All small and to many to list) (Budget $50,000.00 and 6 weeks work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in over all budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $400,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
91 Exeter Drive
Ottawa, Ontario
K2J 1V6
(613) 323-4136

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August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Latimer Station #7

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 25 years of age and is single storey concrete block with wood trusses style structure, exterior is clad in metal siding. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in fair to good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Wind damage to metal soffit, fascia and eave troughs to various locations of the building (Budget costs of $3,000.00 and 1 week work)
- Some deteriorate cement block foundation located on the rear corner by the oil tank
- (Budget cost of $6,500.00 and 1 1/2 weeks work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Addition of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system needed (Budget $60,000.00 and 4 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Adjustments to overhead door systems needed (Budget $1,500.00 and 1 days work)
- Structural reinforcement of cement block wall as door between fire truck bays (Budget $5,000.00 and 1 weeks work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in overall budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $94,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
91 Exeter Drive
Ottawa, Ontario
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(613) 323-4136

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August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Sunbury Station #8

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 30 years of age and is multi storey steel and concrete building, exterior is clad in metal siding and brick (Township Yard Garage and Library Building). Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in good to better than good condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Addition and upgrade of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system may be needed due to increased flow (Budget $25,000.00 and 4 weeks work)
- Interior storage solutions Upper Area (Shelving etc) (Budget $2,000.00 and 3 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $2,000.00 and 3 days work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve

in overall budget)
- No Building Roof Inspection was completed and this report does not make statements on any condition
- No assessment of Life Emergency Systems (Emergency Lighting and Smoke Detectors etc)

I would assign a working budget of $35,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On

Request. Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
91 Exeter Drive
Ottawa, Ontario
K2J 1V6
(613) 323-4136

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August 12, 2013

Emergency Management and Training Inc.
65 Cedar Pointe Drive, Suite 144
Barrie, Ontario
L4N 9R3

Re: Suggested List of Maintenance for South Frontenac Township – Fire Department – Burnt Hills Station #9

Attn: Lyle and Darryl,

After my site visit, I am pleased to offer options for consideration. I have based my budget on the following:

General Observations:
This building is approximately 35 years of age and is single storey concrete block with wood trusses style structure, exterior is clad in metal siding. Based on a general visual review of the structure and surrounding areas, that did not include any destructive investigation or testing; the building was found to be in fair condition.

The Following Areas Were Noted As Requiring Attention: (All Costs are plus H.S.T. and are approximate and include a possible construction period)

- Damage to metal soffit and fascia to various locations of the building (Budget costs of $2,000.00 and 1 weeks work)
- Some deteriorated cement block to the foundation located at various locations (Budget cost of $6,500.00 and 1 1/2 weeks work)
- Some adjustments to the exterior grading adjacent to the building (Budget $10,000.00 and 1 weeks work)
- Addition of washing facilities (Washroom, Shower and Laundry) – Addition of new septic system needed (Budget $80,000.00 and 4 weeks work)
- Interior storage solutions (Shelving etc) (Budget $1,000.00 and 2 days work)
- Separation of electrical systems for any exposure to water and enclosure of panels (Budget $2,000.00 and 1 weeks work)
- Removal of vegetation at various locations around building (Budget $10,000.00 and 2 weeks work)
- Concerns of propane tank protection (Budget $10,000.00 and 2 weeks work)

What was not included in review and budgets:

- BCIN and Structural review if required (available at additional cost)
- Destructive investigation to confirm existing building structure
- Bonding (available at additional costs if required)
- Professional Costs (Architects and Engineers and Building Permits, but suggested valve in overall budget)

I would assign a working budget of $124,000.00 + H.S.T. to cover the cost professional fees, plans, permits and construction costs.

I thank you for the opportunity to provide quote to you on your project. If you have any questions, please feel free to contact me. I look forward for the opportunity to work with you in the future.

Client References Available On Request.

Warmest Regards,

Gregg Buscombe,
Project Manager / Proprietor
Green Earth Contracting (o/o by Curby's Technical Inc.)
91 Exeter Drive
Ottawa, Ontario
K2J 1V6
(613) 323-4136

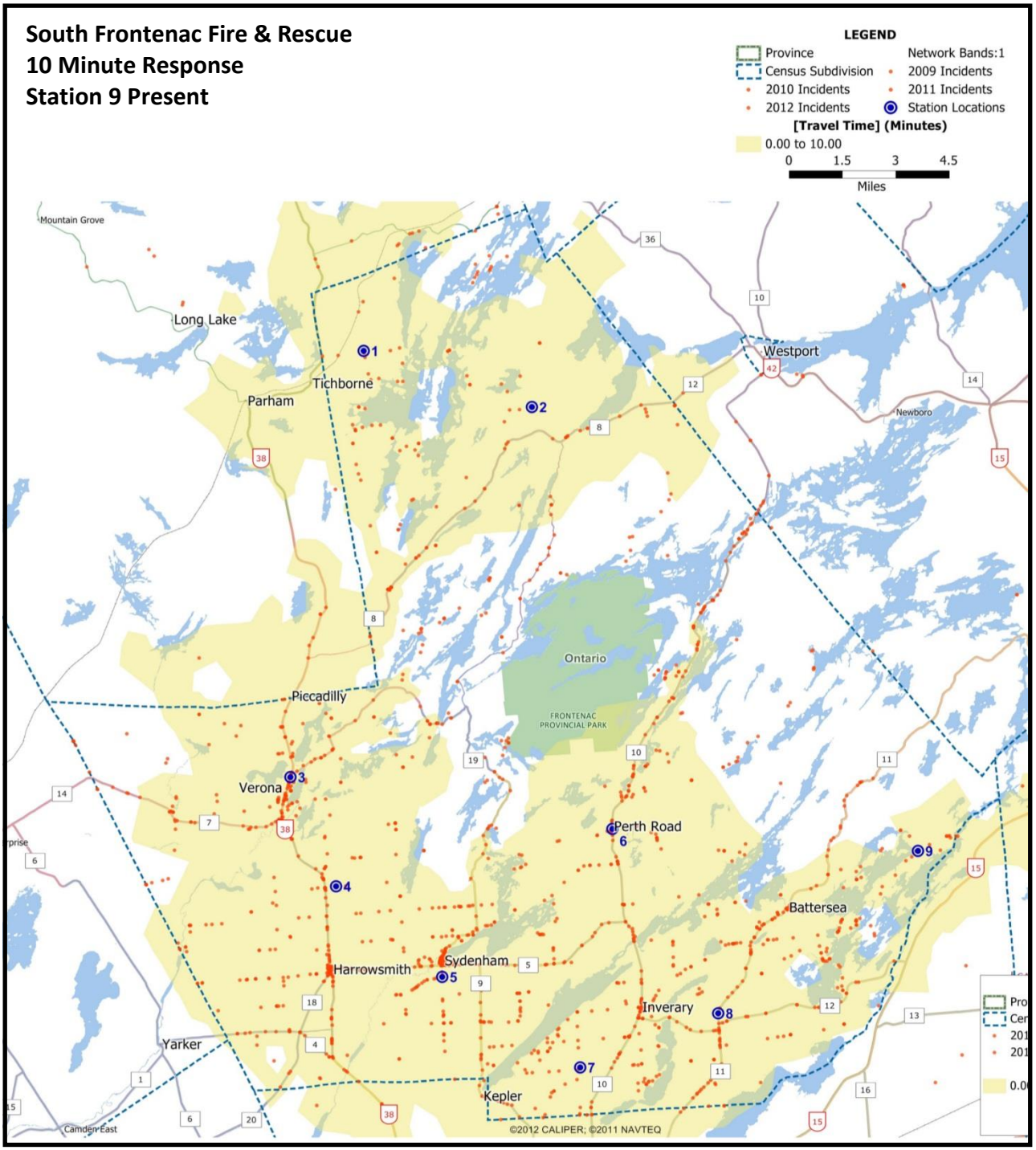
Appendix "B"

Response Time Maps

Map #1 – 10 Minute Response Zones

Demonstrates NFPA 10 Minute "Suburban" Response Recommendation

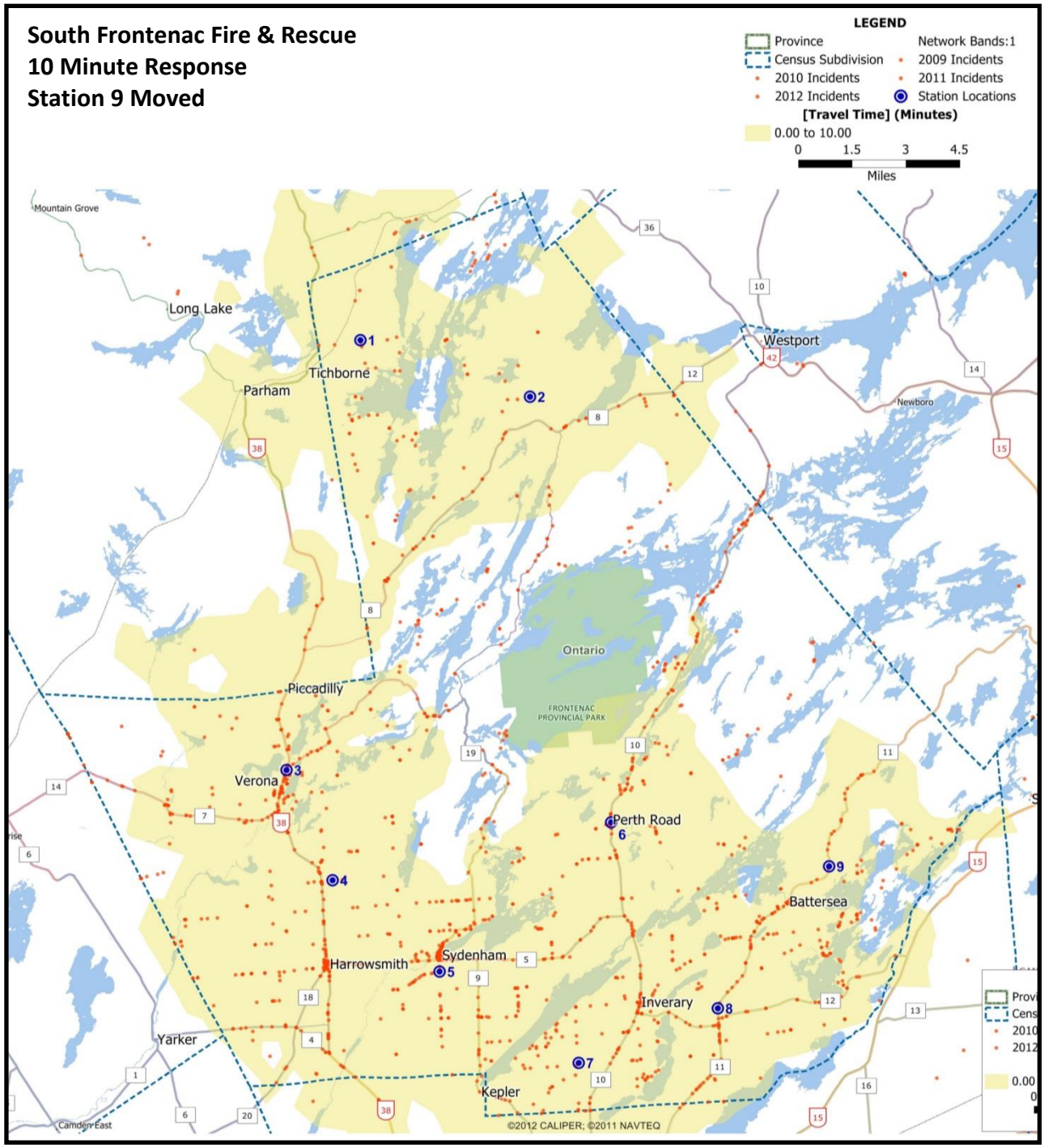
With Present Station Configuration



Map #2 – 10 Minute Response Zones

Demonstrates NFPA 10 Minute "Suburban" Response Recommendation

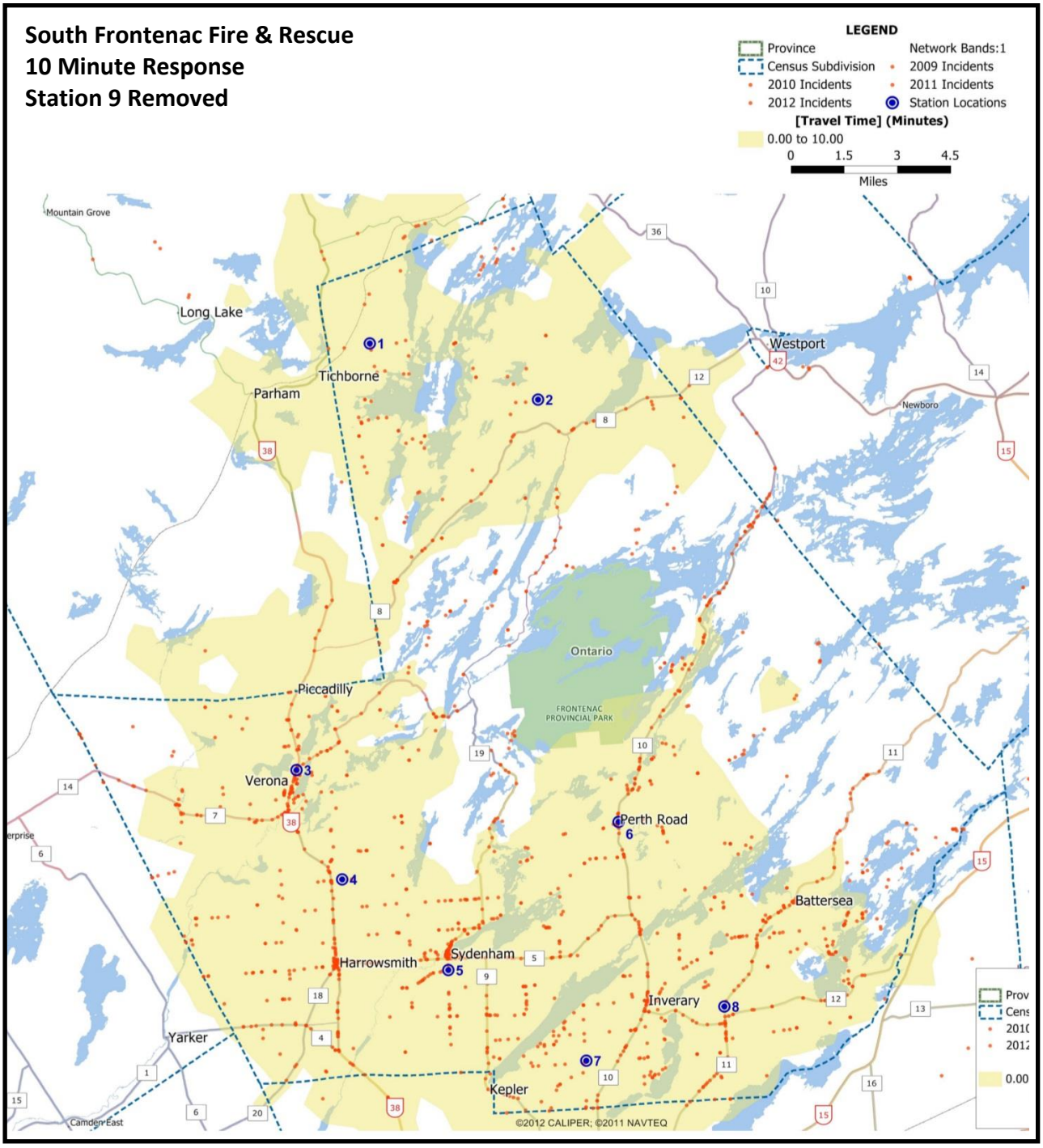
With Station 9 Moved to a Highway Location for Better Response Ability



Map #3 – 10 Minute Response Zones

Demonstrates NFPA 10 Minute "Suburban" Response Recommendation

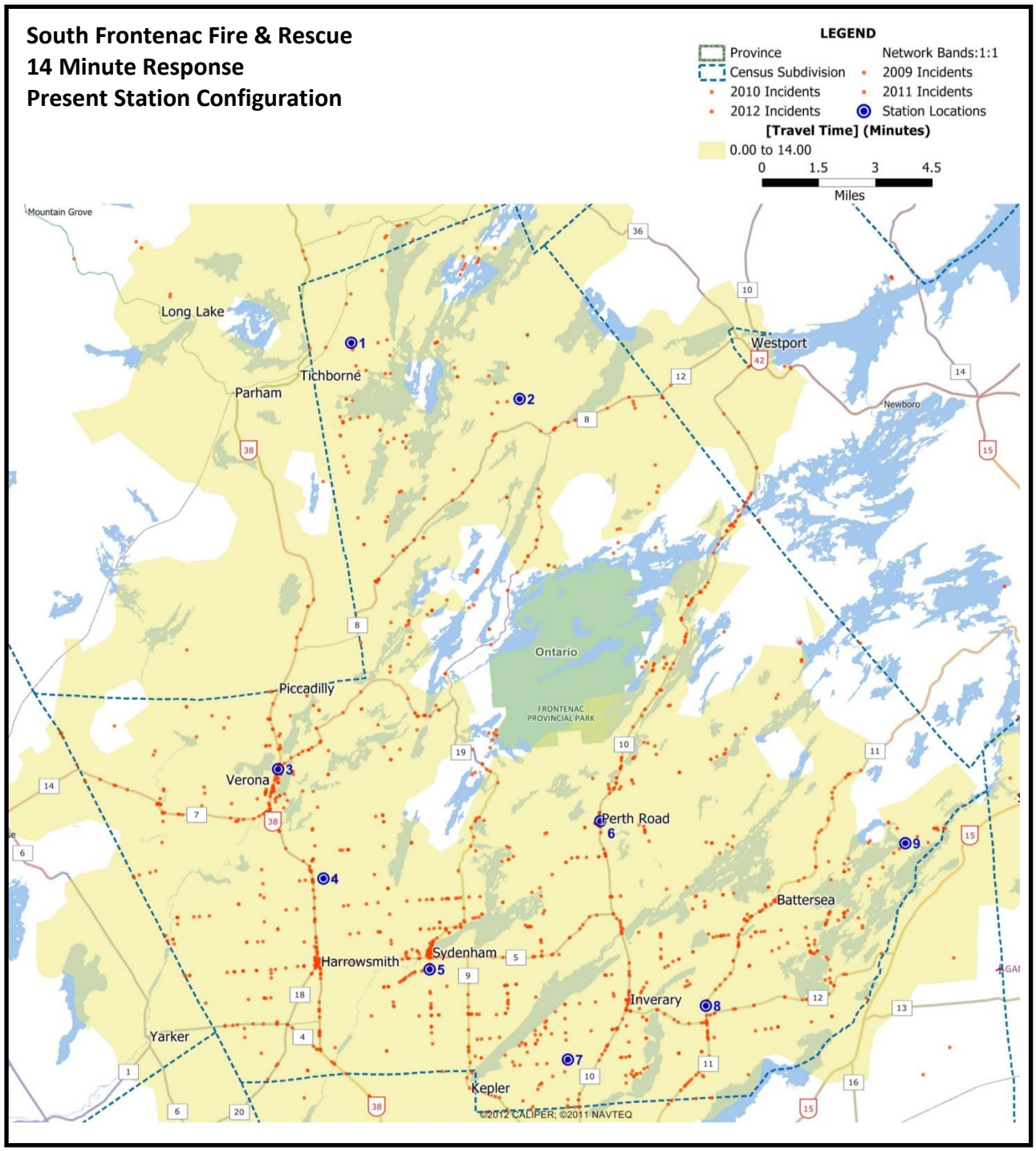
With Station 9 Removed



Map #4 – 14 Minute Response Zones

Demonstrates NFPA 14 Minute "Rural" Response Recommendation

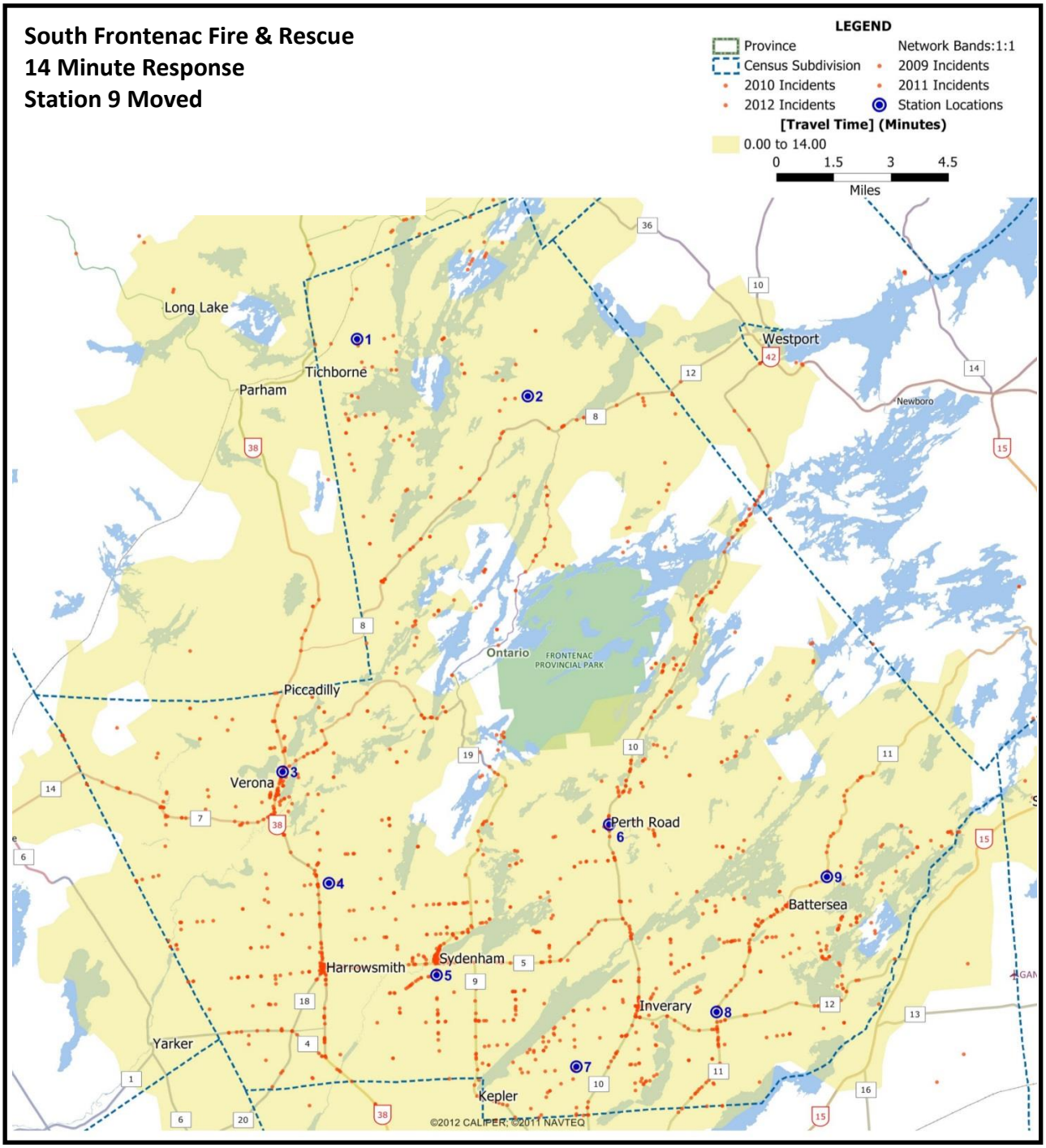
With Present Station Configuration



Map #5 –14 Minute Response Zones

Demonstrates NFPA 14 Minute "Rural" Response Recommendation

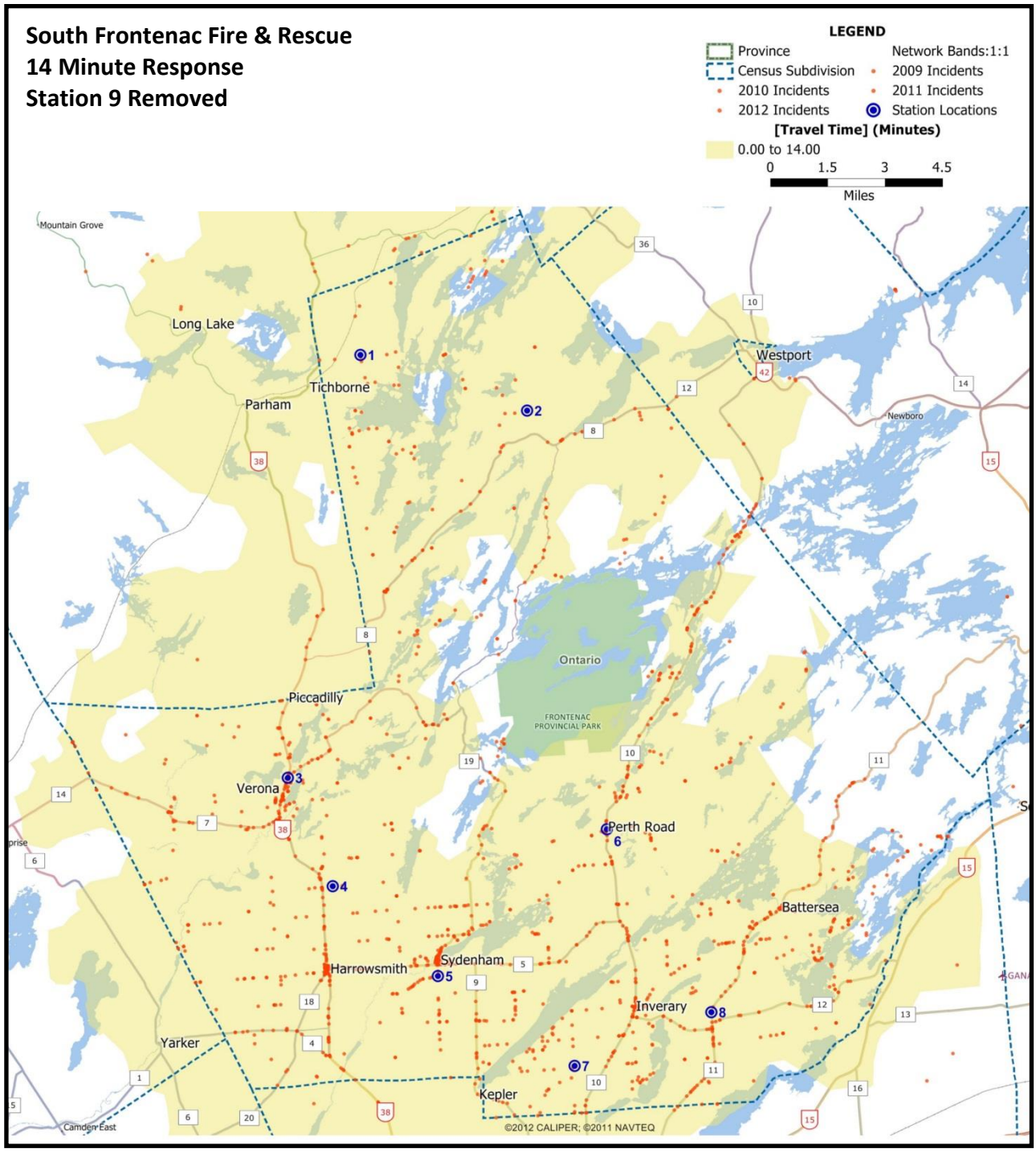
With Station 9 Moved to a Highway Location for Better Response Ability



Map #6 –14 Minute Response Zones

Demonstrates NFPA 14 Minute "Rural" Response Recommendation

With Station 9 Removed



STAFF REPORT
PUBLIC WORKS DEPARTMENT

Prepared for Council: March 17, 2015

Agenda Date: March 24, 2015

REPORT TO COMMITTEE OF THE WHOLE

SUBJECT: PARTIALLY MAINTAINED ROADS

BACKGROUND:

Council initiated a review, in 2014 of partially maintained roads within the Township. The objective is to develop criteria to assess which of these roads should receive full maintenance.

ANALYSIS:

The Public Services Committee, at its meeting of September 23, 2014, supported the following criteria for the development of weighting and scoring:

- Volume (AADT or estimate based on residency)
- Number of dwellings
- Emergency Services Access use
- Alternate routes available
- Recreational use
- Commercial use
- Structural adequacy
- Topography
- Through road (or dead end)
- Dwelling density
- Road allowance width
- Adjacent to waterways
- Structures over 3 meter span

Staff have attempted to gather data on the above mentioned criteria. This is summarized on the attached chart titled “Partially Maintained Roads Criteria”. At this time, no attempt has been made to weigh any of the criteria.

Also attached is an excerpt from the Draft Report initiated last year identifying relevant legislation and practices of some municipalities with regards to low volume/seasonal roads.

FINANCIAL/STAFFING IMPLICATIONS:

Operating and Capital costs for extending full maintenance over these partially maintained roads have not been estimated at this time.

RECOMMENDATIONS

It is suggested that the COW assess weightings to the proposed criteria to develop an objective approach to determining which Township roads receive full maintenance.

ATTACHMENTS:

1. Partially Maintained Roads Criteria
2. Excerpt from Draft Report, Low Volume/Seasonal Roads, Cursory Literature Review

Submitted/approved by:

Mark Segsworth P. Eng.
Public Works Manager

Prepared by:

Brian Kirk, CRS 1
Area Supervisor

Partially Maintained Roads													
Road Name	**Location that is Partially Maintained**	**Access** **TR-Through Road** **DE- Dead End** **NTA- No Turn Around**	**Road Width**	**Gravel Resurfaced?**	**Topography (1-Good 10-Poor)**	**Graded?**	**Cloride Applied?**	**Structural Adequacy (1-Good 10-Poor)**	**Adjacent to Water**	**# of Structures over 3m**	**# of Perm. Residence**	**Speed Limit (km/h)**	**AADT**
Winter Maintained But No Summer- Entire Road													
Bradford Rd East (Gravel)	N/A	DE / Cul-De-Sac	14-18 ft	No	1	No	No	1	N	0	1	80	-
Meeks Rd	N/A	DE / NTA	10-14 ft	No	8	No	No	5	N	0	1	80	6
Reynolds Rd	N/A	DE / NTA	10-14 ft	Once/yr	8	No	No	8	N	0	1	80	4
Bellrock Pepper st (West)	N/A	DE / NTA	12-14 ft	No	8	No	No	8	N	0	1	80	-
No Winter Maintenance- Entire Road													
Corkey Rd	From Latimer to end- 450 m Total	DE / NTA	10-12ft	Yes	4	Once/yr	No	3	N	0	6	80	-
Draper Lk Rd	From Norway to end- 2.9km Total	DE / NTA	10-14 ft	Yes	8	Yes	No	9	N	0	5	80	-
Fishing Lk Rd	From North Shore to end- 8.0km Total	DE / NTA	10-14 ft	Yes	8	Yes	No	8	N	0	0	80	-
Fitzgerald Rd	From Westport Rd to gate- 1.5 km Total	DE / NTA	10-14 ft	Yes	8	No	No	8	N	0	0	80	-
McNeil Rd	From Burridge Rd to Lee Rd- 3.1km Total	TR	10-14 ft	Yes	7	Yes	No	6	N	0	0	80	-
Sleeth Rd	From Ernie Rd to end- 180m Total	TR	10-12 ft	Yes	7	Yes	No	6	Y	0	1	80	-
Split Rail Lane	From Opinicon Rd in 1 km	DE / NTA	10-14 ft	Yes	5	Yes	No	4	N	0	0	80	-
Tobin Rd	From Devil Lk Rd to end- 1 km	DE / NTA	10-14 ft	Yes	9	Once (w/dozer)	No	8	N	0	1	80	-
Partial Winter Maintenance- Section of Road													
12 Cons. (Back end)	Last 700m	DE / NTA	14-16 ft	Yes	6	Yes	No	5	N	0	0	80	-
Breese Rd (Back end)	Last 300m	DE / NTA	12-16 ft	No	7	Once/yr	No	9	N	0	0	80	-
Burridge Lk Rd (Back end)	Last 400m- From Space Lane in	DE / NTA	10-12 ft	Yes	10	Yes (w/dozer)	No	10	Y	0	0	80	-
Clear Lk Rd (Back end)	Last 2.7km- 700 m in from Rd 10 to end	DE / NTA	12-16 ft	Yes	9	Yes (w/dozer)	No	9	Y	0	0	80	81
Darling Rd	North of Farm- 600m	DE / NTA	10-14 ft	No	5	No	No	5	Y	1	1	80	-
Gully Rd (Freeman Rd)	Boundary Rd to culdesac (Freeman Rd)	TR	10-14 ft	Yes	6	Yes	No	5	N	0	0	80	-
Hanna Rd	Last 180m	DE / NTA	10-14 ft	Yes	6	Yes	No	5	Y	0	3	80	-
Hinchinbrooke Rd N(HighFalls)	Last 1.7 km	TR	12- 14 ft	Once/yr	8	Twice/ yr	No	7	Y	1	0	80	-
James Wilson Rd	Middle 2.0 km (1.0km off CanoeLake)	TR	12-16 ft	Yes	7	Yes	No	6	Y	1	2	80	143
Kingsford Lake Dam Rd	Beyond Parking Lot- Last 250m	DE	14-16 ft	Yes	4	Yes	No	5	Y	0	1	80	-
Lake Rd	Last 100m	DE / NTA	10-14 ft	Yes	5	Yes	No	4	Y	0	1	80	-
Little Long Lk Rd	Middle 1.1km (150m off Charlie Green)	TR	10-14 ft	Yes(Only 700m)	7	Yes(Only 700m)	No	8	Y	0	5	80	55
	400m of the above 1.1km(850m off CG Rd)	TR	10-14 ft	No	6	No	No	7	Y	0	0	80	-
Long Swamp Rd	From Bellrock Rd South 2.0 km	TR	12-14 ft	Yes	8	Yes	No	10	Y	1	0	80	45
Massassauga Rd (Back end)	Massassauga Ln. (Boyscouts)	DE / NTA	12-14 ft	Yes	8	Yes (w/dozer)	No	7	Y	0	0	80	244
New Rd	1 km in from Rd 8 to Green Bay Rd	TR	10-14 ft	Yes	9	Yes	No	9	N	0	1	80	-
Steele Rd	Last 200m	DE / NTA	10-14 ft	Yes	7	Yes	No	7	Y	0	1	80	262
Steve Babcock Rd	Last 150m	DE / NTA	10-14 ft	Once/yr	7	Yes	No	6	Y	0	0	80	-
Timmerman Rd (Back end)	Last 700m	DE / NTA	10-14 ft	Yes	7	Yes	No	6	N	0	0	80	-

The following contains a brief overview of relevant provincial law and common practices of other municipalities in relation to low volume and seasonal roads.

This document by no means represents a legal opinion or interpretation of the applicable laws and/or regulations but rather provides a summary of the key concepts as they apply to low volume/seasonal roads in the Township.

Part III of the Municipal Act and the Minimum Maintenance Standards Act

The legal definition of a highway is contained within the Municipal Act, 2001:

> 26. The following are highways unless they have been closed:
>
> 1. All highways that existed on December 31, 2002.
> 2. All highways established by by-law of a municipality on or after January 1, 2003.
> 3. All highways transferred to a municipality under the Public Transportation and Highway Improvement Act.
> 4. All road allowances made by the Crown surveyors that are located in municipalities.
> 5. All road allowances, highways, streets and lanes shown on a registered plan of subdivision.

However, the legal meaning of highway here does not imply that it is passable by a motorized vehicle. This meaning refers to a legal route which may be used for travel by the public. How a "Municipal Act" highway becomes what is typically considered a public highway is defined by Section 31 (4) of the Municipal Act, 2001:

> A municipality may by by-law assume the following highways for public use and section 44 does not apply to the highways until the municipality has passed the by-law:
>
> 1. An unopened road allowance made by the Crown surveyors.
> 2. A road allowance, highway, street or lane shown on a registered plan of subdivision. 2001, c. 25, s. 31 (4).

Section 44 of the Municipal Act sets the legal basis of highway maintenance. Paragraphs 1 and 4 are as follows:

> (1) The municipality that has jurisdiction over a highway or bridge shall keep it in a state of repair that is reasonable in the circumstances, including the character and location of the highway or bridge.
>
> (4) The Minister of Transportation may make regulations establishing minimum standards of repair for highways and bridges or any class of them.

The Minimum Maintenance Standards for Municipal Highways (MMS, O. Reg. 239/02) is a regulation as established by the previous paragraph. It details the responsibilities (from surface condition, signage, patrol frequency and snow/ice maintenance) of municipalities in relation to their road network. A copy of the MMS is included as an Appendix.

The MMS classifies highways into six categories based on traffic and posted speed limits. The lowest category, Class 6, consists of roads that have both a posted speed of 80 km/h or less and traffic from 0-49 annual average daily traffic (AADT). Rural municipalities typically have a significant amount of Class 6 highways. Although Class 6 highways are not regulated by the MMS, the municipality is still responsible for keeping them in a state of repair suitable to their location and character as per Section 44, paragraph (1). To contrast, any unopened allowance, unassumed road, or private road –even if it is on a road allowance and has relatively high traffic– is not subject to Section 44.

Related By-Laws in Other Municipalities

Some municipalities have enacted by-laws to clearly define its maintenance program for Class 6 highways. Tudor and Cashel's By-Law 2012-15, *Minimum Maintenance Standards & Roadway Level of Service for Municipal Roads*, subdivides Class 6 roads into those both winter and summer maintained, those summer maintained only, those non assumed [sic] and unmaintained, and unopened allowances. Other municipalities create by-laws for seasonal roads on a one-by-one basis such as Asphodel-Norwoods By-Law 2014-20 that only deals with one section of an assumed road.

The Township of Muskoka Lakes' *Seasonal/Summer Road Policy* goes further than simply labeling a road "Use at Own Risk" and prevents private snow plowing of summer roads without permission from the Township in order to prevent damage to sensitive roads. Practices from townships from outside

Ontario had them provide winter maintenance on summer roads by request either for a fee or under extenuating circumstances.

The above-noted by-law examples are included in Appendix A for reference.

The majority of municipalities have strict conditions before assuming a road, typically requiring the fronting land owners pay for improving a road to the municipality's standards. A strong majority of fronting landowner support is often required as well.

Implications of the MMS and the Municipal Act

A municipality must exercise caution and due diligence when assuming private or previously unassumed roads. Doing so requires greater annual road expenditures and this should be weighed against the increased revenue and social benefits from assuming a road. It should be noted that assuming a highway can be done relatively simply; while unassuming a highway is more onerous.

Furthermore, in respect to the MMS, a municipality should also be careful when approving development or land severances that are likely to increase traffic on seasonal roads. If a seasonal road's traffic were to be 50 AADT or higher, it would be considered a Class 5 road making winter maintenance, as detailed by the MMS, legally mandatory.

This begs the question: How does a municipality decide when to assume responsibility of a road and which of its Class 6 roads should be seasonal or year round?

A municipality weighs several factors as a way of objectively prioritizing the relative importance of its low volume and seasonal roads. The following factors are suggested by DM Wills for consideration in the maintenance of low-volume roads:

- Number of Permanent Residences
- Number of Seasonal Residences
- Emergency Services Access
- Alternate Routes
- Recreational Use
- Commercial Use

A draft matrix for weighing these factors is attached as Appendix B.

Township of South Frontenac
LOW VOLUME ROAD CLASSIFICATION MATRIX

Criteria	Weighting	Element Scoring	Maximum Score	Element Score	Score
Step 1:	Yes	No	If No, no further evaluation required		
Road has been assumed by the Township?	x		Section 44 MA Applies		
Class 6 Road	x	Yes			
Step 2:					
Volume (AADT or estimate based on residency)	2	1-5	10	1	2
Equivalent # of Perm. Res. (Max Rating) (30)	3	1-5	15	3	9
# of Permanent Residences 10	1	--	--	--	--
# of Seasonal Residences 0	0.3	--	--	--	--
Emergency Services Access Use	2	1-5	10	2	4
Alternate Routes Available	1	1-5	5	2	2
Recreational Use	1	1-5	5	1	1
Commercial Use	1	1-5	5	1	1
Structural Adequacy	1	1-5	5	1	1
			55		20

LOW VOLUME ROAD POSITION RANKING

Road ID	1234
Road Name	ABC Road
Posted Speed	Fast
AADT	Low
From	Here
To	There
Length	5.6 km

Volume (AADT)	Element Score
<10	1
10-19	2
20-29	3
30-39	4
40-49	5
50 and up	Class 5 and up - requires winter maintenance

Residency	
None	1
Equivalent of 1-5 Permanent Residences	2
Equivalent of 6-15 Permanent Residences	3
Equivalent of Permanent Residences 16-23	4
Equivalent of Permanent Residences >23	5

Recreational Use	Element Score
None	1
Limited use	2
Seasonal Use	3
Moderate Use	4
Critical Recreational Link	5

Commercial Use	
None	1
Limited use	2
Seasonal Use	3
Moderate Use	4
Critical Commercial Link	5

Emergency Access Importance	Element Score
0 residences	1
Residences/ alternate available	2
Critical ES Link - alternate available > 10km	3
Critical ES Link - alternate available > 20km	4
Critical ES Link - no alternate	5

Alternate Routes	
Multiple Alternates	1
Alternate < 10 km	2
Alternate < 20 km	3
Alternate < 30 km	4
No Alternate	5

The equivalent # of permanent residences is calculated based on the weightings and the max rating. Altering the seasonal/permanent weighting, as well as the Max Rating be reflected in the above bands and scoring logic. The current factors are given as an example and should be

STAFF REPORT
PUBLIC WORKS DEPARTMENT

REPORT FOR CONSIDERATION

Prepared for Council: March 17, 2015

Agenda Date: March 24, 2015

SUBJECT: **RFP for Garbage and Recycling Collection**

BACKGROUND:

Current contracts expire August 31, 2015. The original RFP for this service was issued in May 2010.

ANALYSIS:

The following points that will have a direct or indirect impact on collection should be considered when issuing a new RFP:

- Date of implementation of the scales. What materials will be free to drop off (metal, brush, etc.)
- Tipping fees for the scales (~$100/ tonne)
- RFP will include pricing on all bin rentals for bulk goods, metals etc. at Portland and Loughborough WDS's and disposal costs for all patrol yards and the HHW depot
- Rates for hauling the recycling bins from Bradshaw, Green Bay and Salem to KARC
- Garbage and recycling collection by the household or per tonne
- Garbage and recycling collection on the same day
- Garbage and recycling collection, three, four or five days/week schedule. Seek the most economical way
- Review in-house area we collect garbage in, with a view to match contractors schedule
- Include in the RFP additional vehicles for back up, this includes covering the in-house route
- Storrington area garbage disposal for pricing
- Discuss extending existing garbage and recycling contract for one more year, this will give time to establish true tonnage across the township for contractors to bid

Note that the issues for consideration for the 2010 RFP are attached for information.

STAFF REPORT
PUBLIC WORKS DEPARTMENT

FINANCIAL/STAFFING IMPLICATIONS:

N/A

RECOMMENDATIONS:

None at this time.

ATTACHMENT:

Information Report, Committee of the Whole, March 9, 2010

Submitted/approved by:

Mark Segsworth P. Eng.
Public Works Manager

Prepared by:

Jamie Brash, Supervisor
Facilities & Solid Waste

Information Report
Committee of the Whole

Township of South Frontenac

Roads Department

Prepared: March 5, 2010
Agenda Date: March 9, 2010

Report No.___/___
File No.

Subject:

SOLID WASTE COLLECTION
REQUEST FOR PROPOSAL (RFP)

Background:

The Committee of the Whole was advised of the revised schedule for the release of the RFP for Solid Waste Collection. Several outstanding issues were needed to be resolved for incorporation into the RFP document.

Analysis:

Collection Areas:

As a result of many hours of staff time devoted to trying to determine the number of permanent and seasonal households, it is proposed that we establish four collection areas based on the four districts. Adjustments to these district boundaries have been made in an attempt to establish efficient service delivery. (see attached map)

COLLECTION AREA	PERMANENT HOUSEHOLDS	SEASONAL HOUSEHOLDS	TOTAL HOUSEHOLDS	CENTERLINE KILOMETERS
Area *AA*	2,340	388	2,728	220
Area *BB*	840	1,422	2,262	170
Area *CC*	2,456	580	3,036	205
Area *DD*	2,265	357	2,622	180
TOTALS	7,901	2,747	10,648	775

**ALL FIGURES ARE APPROXIMATE

AREA	DISPOSAL OPTIONS
AA	Portland WDS
BB	Bradshaw/Green Bay/Salem/ Massassauga WDS
CC	Loughborough/Massassauga WDS
DD	WSI Transfer Station/Loughborough WDS

Commercial Properties

Commercial properties will be treated like residential properties in that a tag will be required on each garbage bag for collection. A maximum of 2 blue boxes per week can be set out for recycling collection.

Term

Three (3) years with a Township option for 1 or 2 additional years.

Bid Submissions

# per household for garbage
$ per tonne for recycling

RFP Schedule

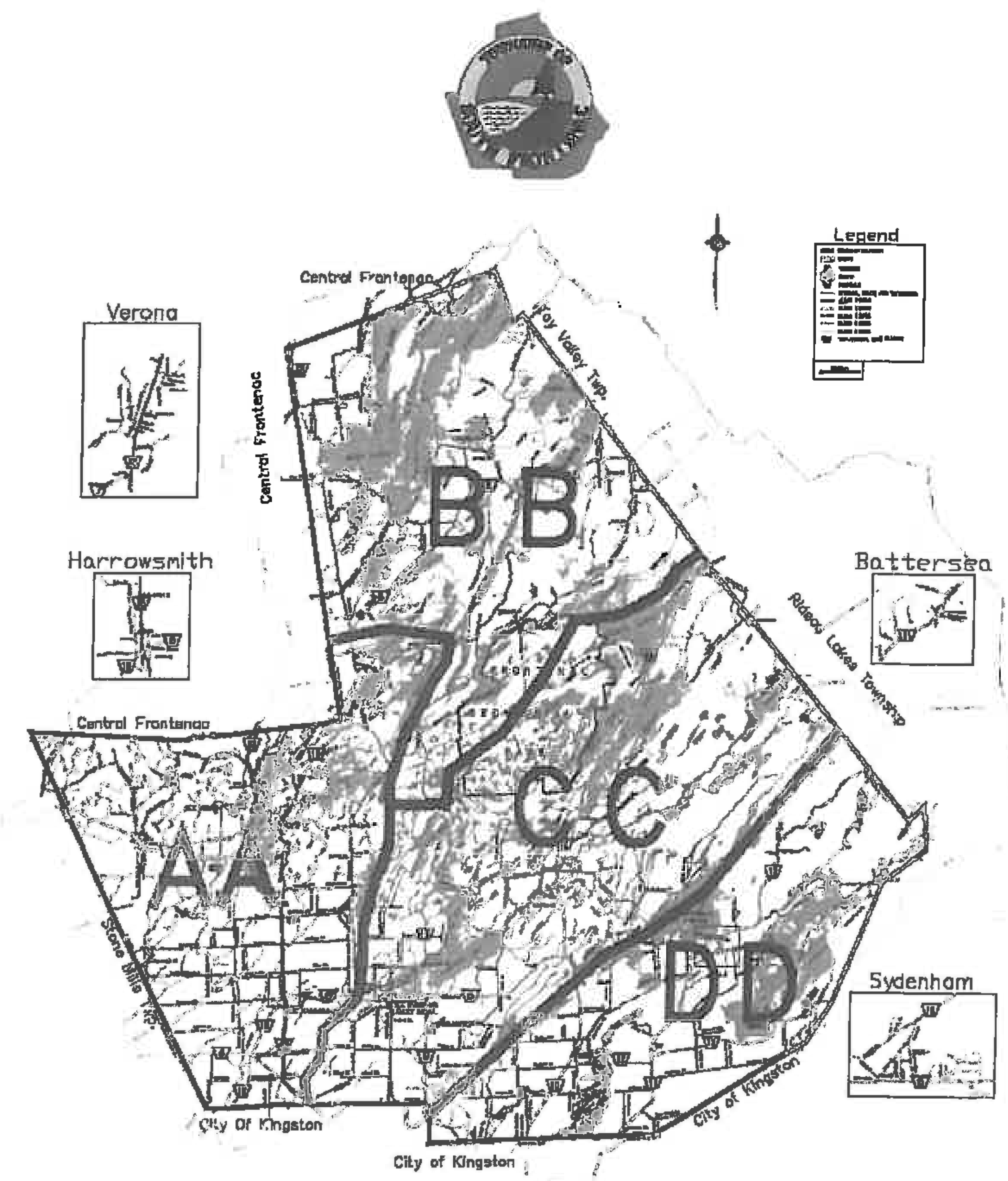
Release of RFP	March 31, 2010
Bidders Information Meeting	April 9, 2010
Deadline for Submitting Inquiries	April 21, 2010
Deadline for Responding to Inquiries	April 30, 2010
RFP Closes	May 12, 2010

Attachments

Collection Area Map

Respectfully Submitted by:

Mark Segsworth P. Eng.
Public Works Manager


Legend
Verona
Harrowsmith
Battersea
Sydenham
Central Frontenac
Central Frontenac
Central Frontenac
Loy Valley Twp.
Rideau Lakes Township
Stone Mills Twp.
City Of Kingston
City of Kingston
City of Kingston
AA
BB
CC
DD

STAFF REPORT
PUBLIC WORKS DEPARTMENT

Prepared for Council: March 17, 2015

Agenda Date: March 24, 2014

INFORMATION REPORT

SUBJECT:

ROAD CLASSIFICATIONS AND MINIMUM MAINTENANCE STANDARDS

BACKGROUND:

Road classifications are defined in the Minimum Maintenance Standards Regulations.

A discussion will take place on how the MMS applies relative to a map of the Township.

ANALYSIS:

Attached is the latest version of Ontario Regulations 239/02
"Minimum Maintenance Standards for Municipal Highways"

RECOMMENDATIONS:

N/A

FINANCIAL/STAFFING IMPLICATIONS:

N/A

ATTACHMENT:

- Minimum Maintenance Standards
- Map

Submitted/approved by:

Mark Segsworth P. Eng.
Public Works Manager

Ontario

ServiceOntario
e-Laws

Municipal Act, 2001
Loi de 2001 sur les municipalités

ONTARIO REGULATION 239/02

MINIMUM MAINTENANCE STANDARDS FOR MUNICIPAL HIGHWAYS

Consolidation Period: From January 25, 2013 to the e-Laws currency date.

Last amendment: O. Reg. 47/13.

This Regulation is made in English only.

Definitions

1. (1) In this Regulation,

"cm" means centimetres;

"day" means a 24-hour period;

"ice" means all kinds of ice, however formed;

"motor vehicle" has the same meaning as in subsection 1 (1) of the *Highway Traffic Act*, except that it does not include a motor assisted bicycle;

"non-paved surface" means a surface that is not a paved surface;

"Ontario Traffic Manual" means the Ontario Traffic Manual published by the Ministry of Transportation, as amended from time to time;

"paved surface" means a surface with a wearing layer or layers of asphalt, concrete or asphalt emulsion;

"roadway" has the same meaning as in subsection 1 (1) of the *Highway Traffic Act*;

"shoulder" means the portion of a highway that provides lateral support to the roadway and that may accommodate stopped motor vehicles and emergency use;

"snow accumulation" means the natural accumulation of any of the following that, alone or together, covers more than half a lane width of a roadway:

1. Newly-fallen snow.
2. Wind-blown snow.
3. Slush;

"substantial probability" means a significant likelihood considerably in excess of 51 per cent;

"surface" means the top of a roadway or shoulder;

"weather" means air temperature, wind and precipitation. O. Reg. 239/02, s. 1 (1); O. Reg. 23/10, s. 1 (1); O. Reg. 47/13, s. 1.

(2) For the purposes of this Regulation, every highway or part of a highway under the jurisdiction of a municipality in Ontario is classified in the Table to this section as a Class 1, Class 2, Class 3, Class 4, Class 5 or Class 6 highway, based on the speed limit applicable to it and the average annual daily traffic on it. O. Reg. 239/02, s. 1 (2).

(3) For the purposes of subsection (2) and the Table to this section, the average annual daily traffic on a highway or part of a highway under municipal jurisdiction shall be determined,

(a) by counting and averaging the daily two-way traffic on the highway or part of the

highway; or

(b) by estimating the average daily two-way traffic on the highway or part of the highway. O. Reg. 239/02, s. 1 (3); O. Reg. 23/10, s. 1 (2).

(4) For the purposes of this Regulation, a municipality is deemed to be aware of a fact if, in the absence of actual knowledge of the fact, circumstances are such that the municipality ought reasonably to be aware of the fact. O. Reg. 23/10, s. 1 (3).

TABLE
CLASSIFICATION OF HIGHWAYS

Average Annual Daily Traffic (number of motor vehicles)	Posted or Statutory Speed Limit (kilometres per hour)						
	91 - 100	81 - 90	71 - 80	61 - 70	51 - 60	41 - 50	1 - 40
15,000 or more	1	1	1	2	2	2	2
12,000 - 14,999	1	1	1	2	2	3	3
10,000 - 11,999	1	1	2	2	3	3	3
8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	3	3
5,000 - 5,999	1	2	2	3	3	3	3
4,000 - 4,999	1	2	3	3	3	3	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	4	4
1,000 - 1,999	1	3	3	3	4	4	5
500 - 999	1	3	4	4	4	4	5
200 - 499	1	3	4	4	5	5	5
50 - 199	1	3	4	5	5	5	5
0 - 49	1	3	6	6	6	6	6

O. Reg. 613/06, s. 1.

Application

2. (1) This Regulation sets out the minimum standards of repair for highways under municipal jurisdiction for the purpose of clause 44 (3) (c) of the Act. O. Reg. 288/03, s. 1.

(2) Revoked: O. Reg. 23/10, s. 2.

(3) This Regulation does not apply to Class 6 highways. O. Reg. 239/02, s. 2 (3).

MINIMUM STANDARDS

Patrolling

3. (1) The minimum standard for the frequency of patrolling of highways to check for conditions described in this Regulation is set out in the Table to this section. O. Reg. 23/10, s. 3 (1).

(2) If it is determined by the municipality that the weather monitoring referred to in section 3.1 indicates that there is a substantial probability of snow accumulation on roadways, ice formation on roadways or icy roadways, the minimum standard for patrolling highways is, in addition to that set out in subsection (1), to patrol highways that the municipality selects as representative of its highways, at intervals deemed necessary by the municipality, to check for such conditions. O. Reg. 47/13, s. 2.

(3) Patrolling a highway consists of observing the highway, either by driving on or by electronically monitoring the highway, and may be performed by persons responsible for patrolling highways or by persons responsible for or performing highway maintenance activities. O. Reg. 23/10, s. 3 (1).

(4) This section does not apply in respect of the conditions described in section 10, subsections 11 (0.1) and 12 (1) and section 16.1. O. Reg. 23/10, s. 3 (1).

TABLE
PATROLLING FREQUENCY

Class of Highway	Patrolling Frequency
1	3 times every 7 days
2	2 times every 7 days
3	once every 7 days
4	once every 14 days
5	once every 30 days

O. Reg. 239/02, s. 3, Table; O. Reg. 23/10, s. 3 (2).

Weather monitoring

3.1 (1) From October 1 to April 30, the minimum standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once every shift or three times per calendar day, whichever is more frequent, at intervals determined by the municipality. O. Reg. 47/13, s. 3.

(2) From May 1 to September 30, the minimum standard is to monitor the weather, both current and forecast to occur in the next 24 hours, once per calendar day. O. Reg. 47/13, s. 3.

Snow accumulation

4. (1) The minimum standard for addressing snow accumulation is,

(a) after becoming aware of the fact that the snow accumulation on a roadway is greater than the depth set out in the Table to this section, to deploy resources as soon as practicable to address the snow accumulation; and

(b) after the snow accumulation has ended, to address the snow accumulation so as to reduce the snow to a depth less than or equal to the depth set out in the Table within the time set out in the Table,

(i) to provide a minimum lane width of the lesser of three metres for each lane or the actual lane width, or

(ii) on a Class 4 or Class 5 highway with two lanes, to provide a total width of at least five metres. O. Reg. 47/13, s. 4.

(2) If the depth of snow accumulation on a roadway is less than or equal to the depth set out in the Table to this section, the roadway is deemed to be in a state of repair with respect to snow accumulation. O. Reg. 47/13, s. 4.

(3) For the purposes of this section, the depth of snow accumulation on a roadway may be determined in accordance with subsection (4) by a municipal employee, agent or contractor, whose duties or responsibilities include one or more of the following:

1. Patrolling highways.

2. Performing highway maintenance activities.

3. Supervising staff who perform activities described in paragraph 1 or 2. O. Reg. 47/13, s. 4.

(4) The depth of snow accumulation on a roadway may be determined by,

(a) performing an actual measurement;

(b) monitoring the weather; or

(c) performing a visual estimate. O. Reg. 47/13, s. 4.

(5) For the purposes of this section, addressing snow accumulation on a roadway includes, but is not limited to,

(a) plowing the roadway;

(b) salting the roadway;

(c) applying abrasive materials to the roadway; or

(d) any combination of the methods described in clauses (a), (b) and (c). O. Reg. 47/13, s. 4.

(6) This section does not apply to that portion of the roadway designated for parking. O. Reg. 47/13, s. 4.

TABLE
SNOW ACCUMULATION

Class of Highway	Depth	Time
1	2.5 cm	4 hours
2	5 cm	6 hours
3	8 cm	12 hours
4	8 cm	16 hours
5	10 cm	24 hours

O. Reg. 47/13, s. 4.

Ice formation on roadways and icy roadways

5. (1) The minimum standard for the prevention of ice formation on roadways is doing the following in the 24-hour period preceding an alleged formation of ice on a roadway:

1. Monitor the weather in accordance with section 3.1.
2. Patrol in accordance with section 3.
3. If the municipality determines, as a result of its activities under paragraph 1 or 2, that there is a substantial probability of ice forming on a roadway, treat the roadway to prevent ice formation within the time set out in the Table to this section, starting from the time that the municipality determines is the appropriate time to deploy resources for that purpose. O. Reg. 47/13, s. 5.

(2) If the municipality meets the minimum standard set out in subsection (1) and, despite such compliance, ice forms on a roadway, the roadway is deemed to be in a state of repair until the earlier of,

(a) the time that the municipality becomes aware of the fact that the roadway is icy; or

(b) the applicable time set out in the Table to this section for treating the roadway to prevent ice formation expires. O. Reg. 47/13, s. 5.

(3) The minimum standard for treating icy roadways after the municipality becomes aware of the fact that a roadway is icy is to treat the icy roadway within the time set out in the Table to this section, and an icy roadway is deemed to be in a state of repair until the applicable time set out in the Table for treating the icy roadway expires. O. Reg. 47/13, s. 5.

(4) For the purposes of this section, treating a roadway means applying material to the roadway, including but not limited to, salt, sand or any combination of salt and sand. O. Reg. 47/13, s. 5.

TABLE
ICE FORMATION PREVENTION AND ICY ROADWAYS

Class of Highway	Time
1	3 hours
2	4 hours
3	8 hours
4	12 hours
5	16 hours

O. Reg. 47/13, s. 5.

Potholes

6. (1) If a pothole exceeds both the surface area and depth set out in Table 1, 2 or 3 to this section, as the case may be, the minimum standard is to repair the pothole within the time set out in Table 1, 2 or 3, as appropriate, after becoming aware of the fact. O. Reg. 239/02, s. 6 (1).

(2) A pothole is deemed to be in a state of repair if its surface area or depth is less than or equal to that set out in Table 1, 2 or 3, as appropriate. O. Reg. 239/02, s. 6 (2); O. Reg. 47/13, s. 6.

TABLE 1
POTHOLES ON PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time
1	600 cm²	8 cm	4 days
2	800 cm²	8 cm	4 days
3	1000 cm²	8 cm	7 days
4	1000 cm²	8 cm	14 days
5	1000 cm²	8 cm	30 days

O. Reg. 239/02, s. 6, Table 1.

TABLE 2
POTHOLES ON NON-PAVED SURFACE OF ROADWAY

Class of Highway	Surface Area	Depth	Time

3	1500 cm²	8 cm	7 days
4	1500 cm²	10 cm	14 days
5	1500 cm²	12 cm	30 days

O. Reg. 239/02, s. 6, Table 2.

TABLE 3
POTHOLES ON PAVED OR NON-PAVED SURFACE OF SHOULDER

Class of Highway	Surface Area	Depth	Time
1	1500 cm²	8 cm	7 days
2	1500 cm²	8 cm	7 days
3	1500 cm²	8 cm	14 days
4	1500 cm²	10 cm	30 days
5	1500 cm²	12 cm	60 days

O. Reg. 239/02, s. 6, Table 3.

Shoulder drop-offs

7. (1) If a shoulder drop-off is deeper, for a continuous distance of 20 metres or more, than the depth set out in the Table to this section, the minimum standard is to repair the shoulder drop-off within the time set out in the Table after becoming aware of the fact. O. Reg. 239/02, s. 7 (1).

(2) A shoulder drop-off is deemed to be in a state of repair if its depth is less than or equal to that set out in the Table. O. Reg. 239/02, s. 7 (2); O. Reg. 47/13, s. 7.

(3) In this section,

"shoulder drop-off" means the vertical differential, where the paved surface of the roadway is higher than the surface of the shoulder, between the paved surface of the roadway and the paved or non-paved surface of the shoulder. O. Reg. 239/02, s. 7 (3).

TABLE
SHOULDER DROP-OFFS

Class of Highway	Depth	Time
1	8 cm	4 days
2	8 cm	4 days
3	8 cm	7 days
4	8 cm	14 days
5	8 cm	30 days

O. Reg. 239/02, s. 7, Table.

Cracks

8. (1) If a crack on the paved surface of a roadway is greater, for a continuous distance of three metres or more, than both the width and depth set out in the Table to this section, the minimum standard is to repair the crack within the time set out in the Table after becoming aware of the fact. O. Reg. 239/02, s. 8 (1).

(2) A crack is deemed to be in a state of repair if its width or depth is less than or equal to that set out in the Table. O. Reg. 239/02, s. 8 (2); O. Reg. 47/13, s. 8.

TABLE
CRACKS

Class of Highway	Width	Depth	Time
1	5 cm	5 cm	30 days
2	5 cm	5 cm	30 days
3	5 cm	5 cm	60 days
4	5 cm	5 cm	180 days
5	5 cm	5 cm	180 days

O. Reg. 239/02, s. 8, Table.

Debris

9. (1) If there is debris on a roadway, the minimum standard is to deploy resources, as soon as practicable after becoming aware of the fact, to remove the debris. O. Reg. 239/02, s. 9 (1).

(2) In this section,

"debris" means any material (except snow, slush or ice) or object on a roadway,

(a) that is not an integral part of the roadway or has not been intentionally placed on the roadway by a municipality, and

(b) that is reasonably likely to cause damage to a motor vehicle or to injure a person in a motor vehicle. O. Reg. 239/02, s. 9 (2); O. Reg. 47/13, s. 9.

Luminaires

10. (0.1) The minimum standard for the frequency of inspecting all luminaires to check to see that they are functioning is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 6; O. Reg. 47/13, s. 10 (1).

(1) For conventional illumination, if three or more consecutive luminaires on a highway are not functioning, the minimum standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 239/02, s. 10 (1).

(2) For conventional illumination and high mast illumination, if 30 per cent or more of the luminaires on any kilometre of highway are not functioning, the minimum standard is to repair the luminaires within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 239/02, s. 10 (2).

(3) Despite subsection (2), for high mast illumination, if all of the luminaires on consecutive poles are not functioning, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 239/02, s. 10 (3).

(4) Despite subsections (1), (2) and (3), for conventional illumination and high mast illumination, if more than 50 per cent of the luminaires on any kilometre of a Class 1 highway with a speed limit of 90 kilometres per hour or more are not functioning, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the luminaires. O. Reg. 239/02, s. 10 (4).

(5) Luminaires are deemed to be in a state of repair,

(a) for the purpose of subsection (1), if the number of non-functioning consecutive luminaires does not exceed two;

(b) for the purpose of subsection (2), if more than 70 per cent of luminaires on any kilometre of highway are functioning;

(c) for the purpose of subsection (3), if one or more of the luminaires on consecutive poles are functioning;

(d) for the purpose of subsection (4), if more than 50 per cent of luminaires on any kilometre of highway are functioning. O. Reg. 239/02, s. 10 (5); O. Reg. 47/13, s. 10 (2).

(6) Subsections (1), (2) and (3) only apply to,

(a) Class 1 and Class 2 highways; and

(b) Class 3, Class 4 and Class 5 highways with a posted speed of 80 kilometres per hour or more. O. Reg. 239/02, s. 10 (6).

(7) In this section,

"conventional illumination" means lighting, other than high mast illumination, where there are one or more luminaires per pole;

"high mast illumination" means lighting where there are three or more luminaires per pole and the height of the pole exceeds 20 metres;

"luminaire" means a complete lighting unit consisting of,

(a) a lamp, and

(b) parts designed to distribute the light, to position or protect the lamp and to connect the lamp to the power supply. O. Reg. 239/02, s. 10 (7).

TABLE
LUMINAIRES

Class of Highway	Time

1	7 days
2	7 days
3	14 days
4	14 days
5	14 days

O. Reg. 239/02, s. 10, Table.

Signs

11. (0.1) The minimum standard for the frequency of inspecting signs of a type listed in subsection (2) to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 7 (1); O. Reg. 47/13, s. 11 (1).

(0.2) A sign that has been inspected in accordance with subsection (0.1) is deemed to be in a state of repair with respect to the retro-reflectivity requirements of the Ontario Traffic Manual until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the sign has ceased to meet these requirements. O. Reg. 47/13, s. 11 (2).

(1) If any sign of a type listed in subsection (2) is illegible, improperly oriented, obscured or missing, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact to repair or replace the sign. O. Reg. 239/02, s. 11 (1); O. Reg. 23/10, s. 7 (2).

(2) This section applies to the following types of signs:

1. Checkerboard.
2. Curve sign with advisory speed tab.
3. Do not enter.
3.1 Load Restricted Bridge.
3.2 Low Bridge.
3.3 Low Bridge Ahead.
4. One Way.
5. School Zone Speed Limit.
6. Stop.
7. Stop Ahead.
8. Stop Ahead, New.
9. Traffic Signal Ahead, New.
10. Two-Way Traffic Ahead.
11. Wrong Way.
12. Yield.
13. Yield Ahead.
14. Yield Ahead, New. O. Reg. 239/02, s. 11 (2); O. Reg. 23/10, s. 7 (3).

Regulatory or warning signs

12. (1) The minimum standard for the frequency of inspecting regulatory signs or warning signs to check to see that they meet the retro-reflectivity requirements of the Ontario Traffic Manual is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 8; O. Reg. 47/13, s. 12 (1).

(1.1) A regulatory sign or warning sign that has been inspected in accordance with subsection (1) is deemed to be in a state of repair with respect to the retro-reflectivity requirements of the Ontario Traffic Manual until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the sign has ceased to meet these requirements. O. Reg. 47/13, s. 12 (2).

(2) If a regulatory sign or warning sign is illegible, improperly oriented, obscured or missing, the minimum standard is to repair or replace the sign within the time set out in the Table to this section after becoming aware of the fact. O. Reg. 23/10, s. 8.

(3) In this section,

"regulatory sign" and "warning sign" have the same meanings as in the Ontario Traffic Manual, except that they do not include a sign listed in subsection 11 (2) of this Regulation. O. Reg. 23/10, s. 8.

TABLE
REGULATORY AND WARNING SIGNS

Class of Highway	Time
1	7 days
2	14 days
3	21 days
4	30 days
5	30 days

O. Reg. 239/02, s. 12, Table.

Traffic control signal systems

13. (1) If a traffic control signal system is defective in any way described in subsection (2), the minimum standard is to deploy resources as soon as practicable after becoming aware of the defect to repair the defect or replace the defective component of the traffic control signal system. O. Reg. 239/02, s. 13 (1).

(2) This section applies if a traffic control signal system is defective in any of the following ways:

1. One or more displays show conflicting signal indications.
2. The angle of a traffic control signal or pedestrian control indication has been changed in such a way that the traffic or pedestrian facing it does not have clear visibility of the information conveyed or that it conveys confusing information to traffic or pedestrians facing other directions.
3. A phase required to allow a pedestrian or vehicle to safely travel through an intersection fails to occur.
4. There are phase or cycle timing errors interfering with the ability of a pedestrian or vehicle to safely travel through an intersection.
5. There is a power failure in the traffic control signal system.
6. The traffic control signal system cabinet has been displaced from its proper position.
7. There is a failure of any of the traffic control signal support structures.
8. A signal lamp or a pedestrian control indication is not functioning.
9. Signals are flashing when flashing mode is not a part of the normal signal operation. O. Reg. 239/02, s. 13 (2).

(3) Despite subsection (1) and paragraph 8 of subsection (2), if the posted speed of all approaches to the intersection or location of the non-functioning signal lamp or pedestrian control indication is less than 80 kilometres per hour and the signal that is not functioning is a green or a pedestrian "walk" signal, the minimum standard is to repair or replace the defective component by the end of the next business day. O. Reg. 239/02, s. 13 (3).

(4) In this section and section 14,

"cycle" means a complete sequence of traffic control indications at a location;

"display" means the illuminated and non-illuminated signals facing the traffic;

"indication" has the same meaning as in the *Highway Traffic Act*;

"phase" means a part of a cycle from the time where one or more traffic directions receive a green indication to the time where one or more different traffic directions receive a green indication;

"power failure" means a reduction in power or a loss in power preventing the traffic control signal system from operating as intended;

"traffic control signal" has the same meaning as in the *Highway Traffic Act*;

"traffic control signal system" has the same meaning as in the *Highway Traffic Act*. O. Reg. 239/02, s. 13 (4).

Traffic control signal system sub-systems

14. (1) The minimum standard is to inspect, test and maintain the following traffic control signal system sub-systems once per calendar year, with each inspection taking place not more than 16 months from the previous inspection:

1. The display sub-system, consisting of traffic signal and pedestrian crossing heads, physical support structures and support cables.
2. The traffic control sub-system, including the traffic control signal cabinet and internal devices such as timer, detection devices and associated hardware, but excluding conflict monitors.
3. The external detection sub-system, consisting of detection sensors for all vehicles, including emergency and railway vehicles and pedestrian push- buttons. O. Reg. 239/02, s. 14 (1); O. Reg. 47/13, s. 13 (1).

(1.1) A traffic control signal system sub-system that has been inspected, tested and maintained in accordance with subsection (1) is deemed to be in a state of repair until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the traffic control signal system sub-system has ceased to be in a state of repair. O. Reg. 47/13, s. 13 (2).

(2) The minimum standard is to inspect, test and maintain conflict monitors every five to seven months and at least twice per calendar year. O. Reg. 239/02, s. 14 (2); O. Reg. 47/13, s. 13 (3).

(2.1) A conflict monitor that has been inspected, tested and maintained in accordance with subsection (2) is deemed to be in a state of repair until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge that the conflict monitor has ceased to be in a state of repair. O. Reg. 47/13, s. 13 (4).

(3) In this section,

"conflict monitor" means a device that continually checks for conflicting signal indications and responds to a conflict by emitting a signal. O. Reg. 239/02, s. 14 (3).

Bridge deck spalls

15. (1) If a bridge deck spall exceeds both the surface area and depth set out in the Table to this section, the minimum standard is to repair the bridge deck spall within the time set out in the Table after becoming aware of the fact. O. Reg. 239/02, s. 15 (1).

(2) A bridge deck spall is deemed to be in a state of repair if its surface area or depth is less than or equal to that set out in the Table. O. Reg. 239/02, s. 15 (2); O. Reg. 47/13, s. 14.

(3) In this section,

"bridge deck spall" means a cavity left by one or more fragments detaching from the paved surface of the roadway or shoulder of a bridge. O. Reg. 239/02, s. 15 (3).

TABLE
BRIDGE DECK SPALLS

Class of Highway	Surface Area	Depth	Time
1	600 cm²	8 cm	4 days
2	800 cm²	8 cm	4 days
3	1,000 cm²	8 cm	7 days
4	1,000 cm²	8 cm	7 days
5	1,000 cm²	8 cm	7 days

O. Reg. 239/02, s. 15, Table.

Roadway surface discontinuities

16. (1) If a surface discontinuity on a roadway, other than a surface discontinuity on a bridge deck, exceeds the height set out in the Table to this section, the minimum standard is to repair the surface discontinuity within the time set out in the Table after becoming aware of the fact. O. Reg. 23/10, s. 9.

(1.1) A surface discontinuity on a roadway, other than a surface discontinuity on a bridge deck, is deemed to be in a state of repair if its height is less than or equal to the height set out in the Table to this section. O. Reg. 47/13, s. 15.

(2) If a surface discontinuity on a bridge deck exceeds five centimetres, the minimum standard is to deploy resources as soon as practicable after becoming aware of the fact to repair the surface discontinuity on the bridge deck. O. Reg. 23/10, s. 9.

(2.1) A surface discontinuity on a bridge deck is deemed to be in a state of repair if its height is less than or equal to five centimetres. O. Reg. 47/13, s. 15.

(3) In this section,

"surface discontinuity" means a vertical discontinuity creating a step formation at joints or cracks in the paved surface of the roadway, including bridge deck joints, expansion joints and approach slabs to a bridge. O. Reg. 23/10, s. 9.

TABLE
SURFACE DISCONTINUITIES

Class of Highway	Height	Time
1	5 cm	2 days
2	5 cm	2 days
3	5 cm	7 days
4	5 cm	21 days
5	5 cm	21 days

O. Reg. 239/02, s. 16, Table.

Sidewalk surface discontinuities

16.1 (1) The minimum standard for the frequency of inspecting sidewalks to check for surface discontinuity is once per calendar year, with each inspection taking place not more than 16 months from the previous inspection. O. Reg. 23/10, s. 10; O. Reg. 47/13, s. 16 (1).

(1.1) A sidewalk that has been inspected in accordance with subsection (1) is deemed to be in a state of repair with respect to any surface discontinuity until the next inspection in accordance with that subsection, provided that the municipality does not acquire actual knowledge of the presence of a surface discontinuity in excess of two centimetres. O. Reg. 47/13, s. 16 (2).

(2) If a surface discontinuity on a sidewalk exceeds two centimetres, the minimum standard is to treat the surface discontinuity within 14 days after acquiring actual knowledge of the fact. O. Reg. 23/10, s. 10; O. Reg. 47/13, s. 16 (3).

(2.1) A surface discontinuity on a sidewalk is deemed to be in a state of repair if it is less than or equal to two centimetres. O. Reg. 47/13, s. 16 (4).

(3) For the purpose of subsection (2), treating a surface discontinuity on a sidewalk means taking reasonable measures to protect users of the sidewalk from the discontinuity, including making permanent or temporary repairs, alerting users' attention to the discontinuity or preventing access to the area of discontinuity. O. Reg. 23/10, s. 10.

(4) In this section,

"surface discontinuity" means a vertical discontinuity creating a step formation at joints or cracks in the surface of the sidewalk. O. Reg. 23/10, s. 10.

REVIEW OF REGULATION

Review

17. (1) The Minister of Transportation shall conduct a review of this Regulation and Ontario Regulation 612/06 (Minimum Maintenance Standards for Highways in the City of Toronto) made under the *City of Toronto Act, 2006* every five years. O. Reg. 613/06, s. 2.

(2) Despite subsection (1), the first review after the completion of the review started before the end of 2007 shall be started five years after the day Ontario Regulation 23/10 is filed. O. Reg. 23/10, s. 11.

18. Omitted (provides for coming into force of provisions of this Regulation). O. Reg. 239/02, s. 18.

South Frontenac Township Current Road Classification Map

TABLE CLASSIFICATION OF HIGHWAYS							
Average Annual Daily Traffic (number of motor vehciles)	Posted or Statutory Speed Limit (kiliometers per hour)						
	91-100	81-90	71-80	61-70	51-60	41-50	1-40
15,000 or more	1	1	1	2	2	2	2
12,000 - 14,999	1	1	1	2	2	3	3
10,000 - 11,999	1	1	2	2	3	3	3
8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	3	3
5,000 - 5,999	1	2	2	3	3	3	3
4,000 - 4,999	1	2	3	3	3	3	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	4	4
1,000 - 1,999	1	3	3	3	4	4	5
500 - 999	1	3	4	4	4	4	5
200 - 499	1	3	4	4	5	5	5
50 - 199	1	3	4	5	5	5	5
0 - 49	1	3	6	6	6	6	6

O. Reg. 613/06, s. 1.

Graphical Scale

−1000m 0m 1000m 2000m 3000m

Legend

- Township Boundary
- Water
- Streams, Ponds & Waterways
- Class 2 Road
- Class 3 Road
- Class 4 Road
- Class 5 Road
- Class 6 Road
- ○100 Hard Top AADT Count
- △100 Gravel AADT Count

Verona

Bellrock

Perth Road Village

Battersea

Inverary

Harrowsmith

Sydenham

Central Frontenac

Tay Valley Twp.

Rideau Lakes Township

Loyalist Twp.

City of Kingston

Stone Mills Twp.

Twp. of Leeds and the Thousand Islands

Bobs Lake

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Sydenham Lake

Devil Lake

Desert Lake

Birch Lake

Big Salmon Lake

Buck Lake

Lower Rock Lk.

Loughborough Lake

Dog Lake

Collins Lake

Vanluven Lake

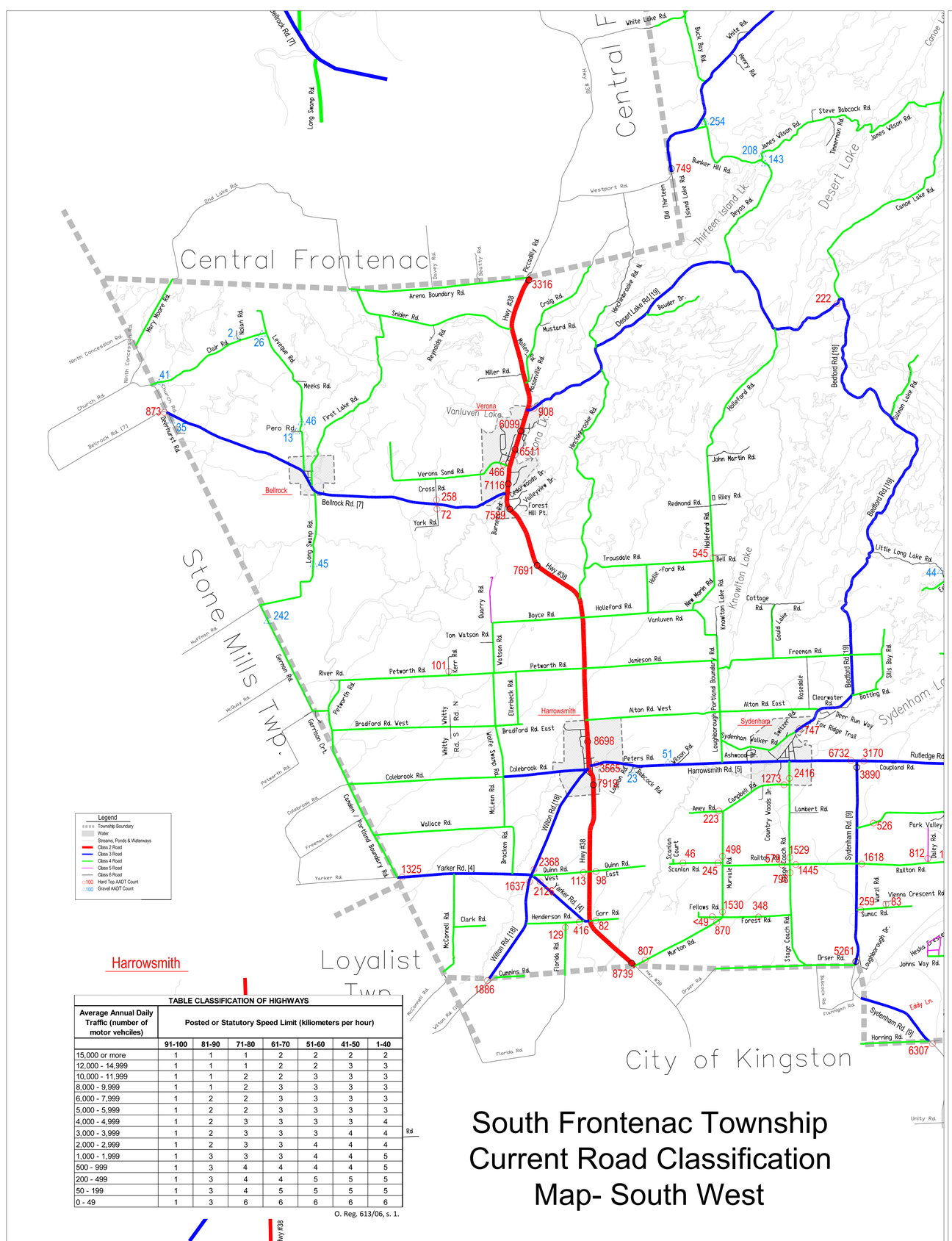
Verona Lake

Knowlton Lake

Cranes Nest Lake

Mud Lk.

Traverse Lk.



Harrowsmith

TABLE CLASSIFICATION OF HIGHWAYS

Average Annual Daily Traffic (number of motor vehicles)	Posted or Statutory Speed Limit (kilometers per hour)						
	91-100	81-90	71-80	61-70	51-60	41-50	1-40
15,000 or more	1	1	1	2	2	2	2
12,000 - 14,999	1	1	1	2	2	3	3
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8,000 - 9,999	1	1	2	3	3	3	3
6,000 - 7,999	1	2	2	3	3	3	3
5,000 - 5,999	1	2	2	3	3	3	3
4,000 - 4,999	1	2	3	3	3	3	4
3,000 - 3,999	1	2	3	3	3	4	4
2,000 - 2,999	1	2	3	3	4	4	4
1,000 - 1,999	1	3	3	3	4	4	5
500 - 999	1	3	4	4	4	4	5
200 - 499	1	3	4	4	5	5	5
50 - 199	1	3	4	5	5	5	5
0 - 49	1	3	6	6	6	6	6

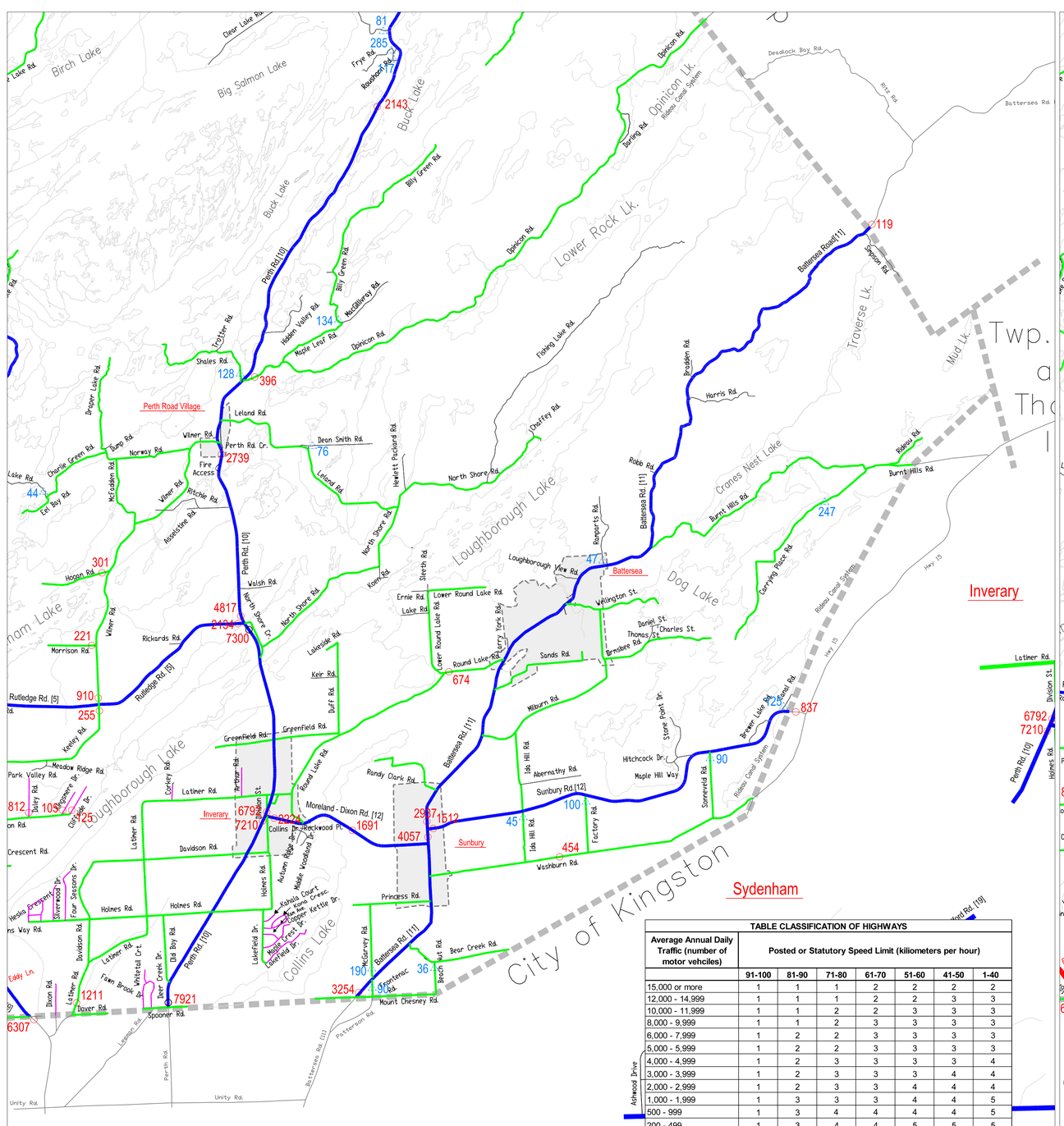
O. Reg. 613/06, s. 1.

South Frontenac Township Current Road Classification Map- South West

Updated Road Classes

Road Name	Location	Speed Limit	AADT	Current Road Class	Updated Road Class
Arterial Roads (Class Increased)					
Perth Rd [10]	Spooner Rd to Rutledge Rd	50, 60, 80	7305	3	2
Sydenham Rd [9]	Horning Rd to Railton Rd	80 (Unposted)	5784	3	2
Arterial Roads (Class Reduced)					
Battersea Rd [11]	North of Burnt Hills Rd	60	200	3	5
Bedford Rd [19]	Entire Length	60	500	3	4
Bellrock Rd [7]	West of Main St in Bellrock	80 (Unposted)	873	3	4
Desert Lake Rd [19]	Entire Length	60	565	3	4
Road 38	North of Portland Waste Site	40, 50 , 60, 80	6387	2	3
Westport Rd [8]	Entire Length	80 (Unposted)	692	3	4
Local Roads (Class Reduced)					
Opinicon Rd	Entire Length	60	396	4	5
Scanlan Rd	Entire Length	60	159	4	5
Anderson Rd. N	Entire Length	80 (Unposted)	47	4	6
Beach Nut Rd	Entire Length	80 (Unposted)	36	4	6
Clair Rd	Entire Length	80 (Unposted)	34	4	6
Devil Lake Rd	Canoe Lake Rd to West Devil Lk Ln.	80 (Unposted)	49	4	6
Fellows Rd	Entire Length	80 (Unposted)	45	4	6
Ida Hill Rd	Washburn Rd to Sunbury Rd	80 (Unposted)	49	4	6
Leveque Rd	Entire Length	80 (Unposted)	46	4	6
Long Swamp Rd	Past Last House #5491	80 (Unposted)	40	4	6
Local Roads (Class Increased)					
Tett Cres.	Entire Length	40	106	6	5
Daley Rd	Entire Length	50	812	5	4
Badour Rd	Entire Length	80 (Unposted)	289	6	4
Canal Rd	Entire Length	80 (Unposted)	125	6	4
Clear Lake Rd	Perth Rd to Christmas Lane	80 (Unposted)	81	6	4
Cross Rd	Entire Length	80 (Unposted)	254	6	4
Dean Smith Rd	Entire Length	80 (Unposted)	76	6	4
Frye Rd	Entire Length	80 (Unposted)	285	6	4
Lee Rd	Westport Rd to Iawah Rd	80 (Unposted)	108	6	4
McAndrews Rd	Entire Length	80 (Unposted)	165	6	4
Roushorn Rd	Entire Length	80 (Unposted)	117	6	4
York Rd	Entire Length	80 (Unposted)	72	6	4
Vienna Cres.	Entire Length	80 (Unposted)	83	6	4

South Frontenac Township Updated Road Classification Map- South West



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1,000 - 1,999	1	3	3	3	4	4	5
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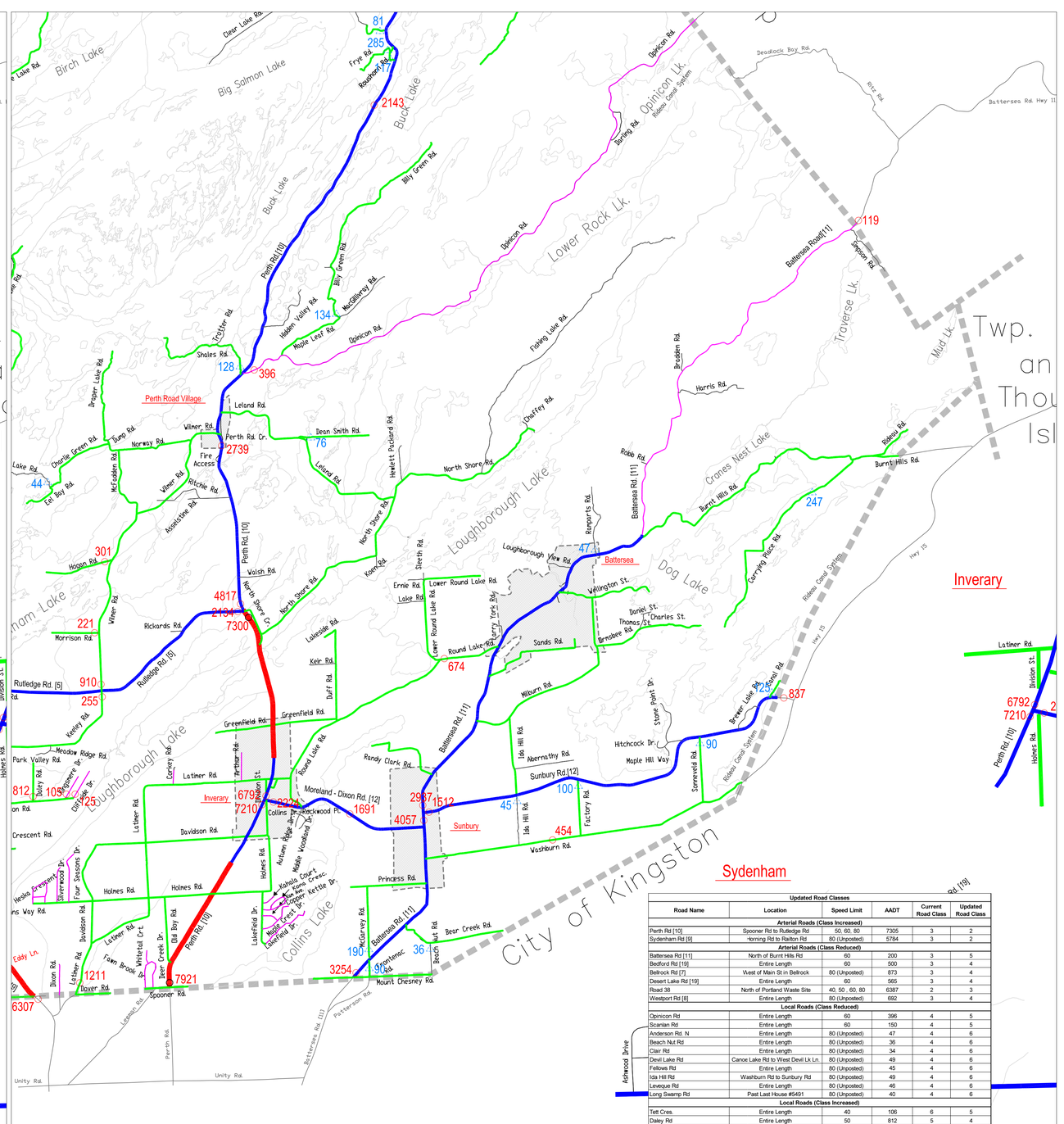
O. Reg. 613/06, s. 1.

South Frontenac Township
Current Road Classification
Map- South East



Updated Road Classes

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Opinicon Rd	Entire Length	60	396	4	5
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York Rd	Entire Length	80 (Unposted)	72	6	4
Vienna Cres.	Entire Length	80 (Unposted)	83	6	4

South Frontenac Township
Updated Road Classification
Map- South East

South Frontenac Township
Current Road Classification
Map- North

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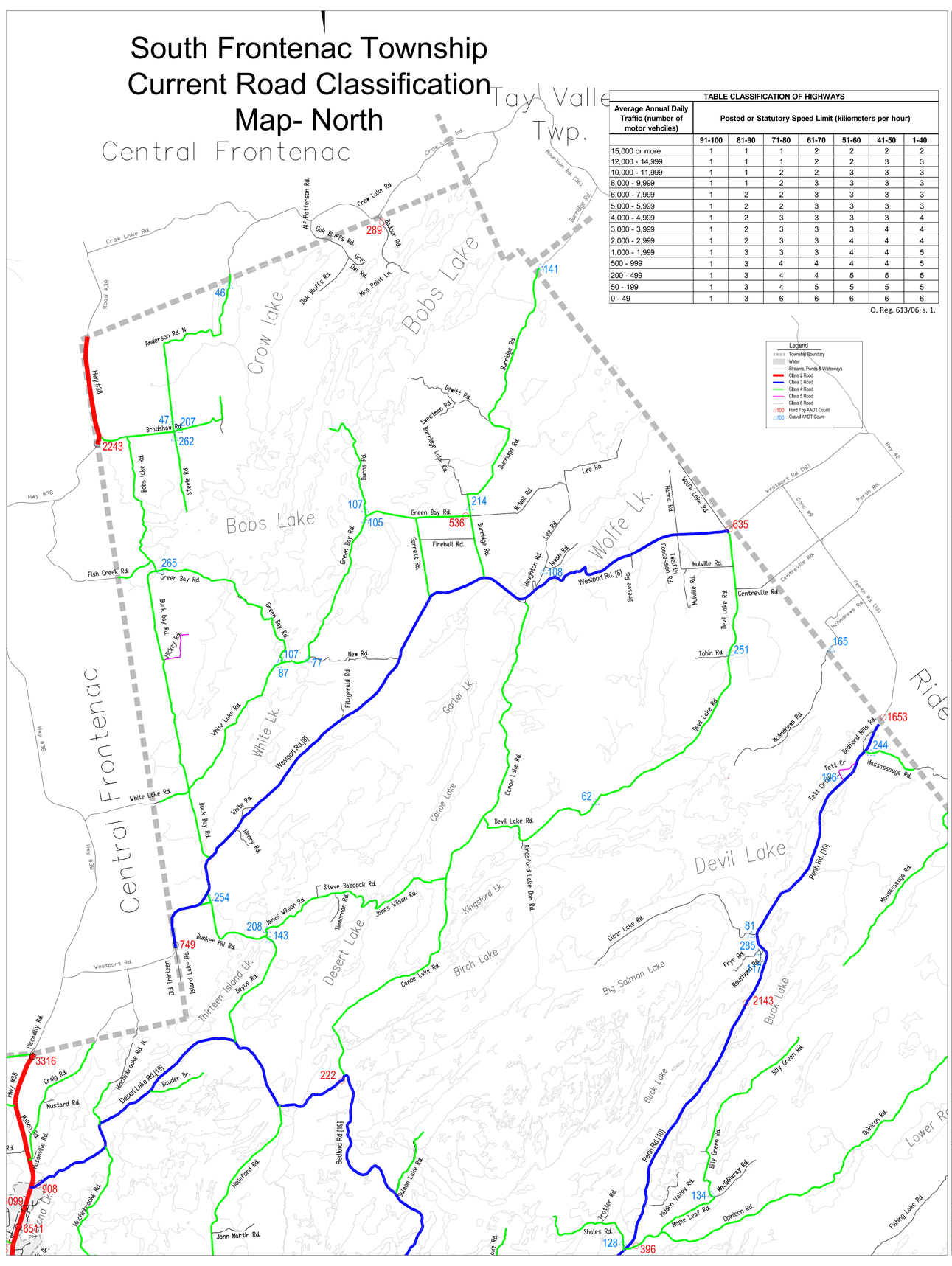
O. Reg. 613/06, s. 1.



South Frontenac Township
Updated Road Classification
Map- North

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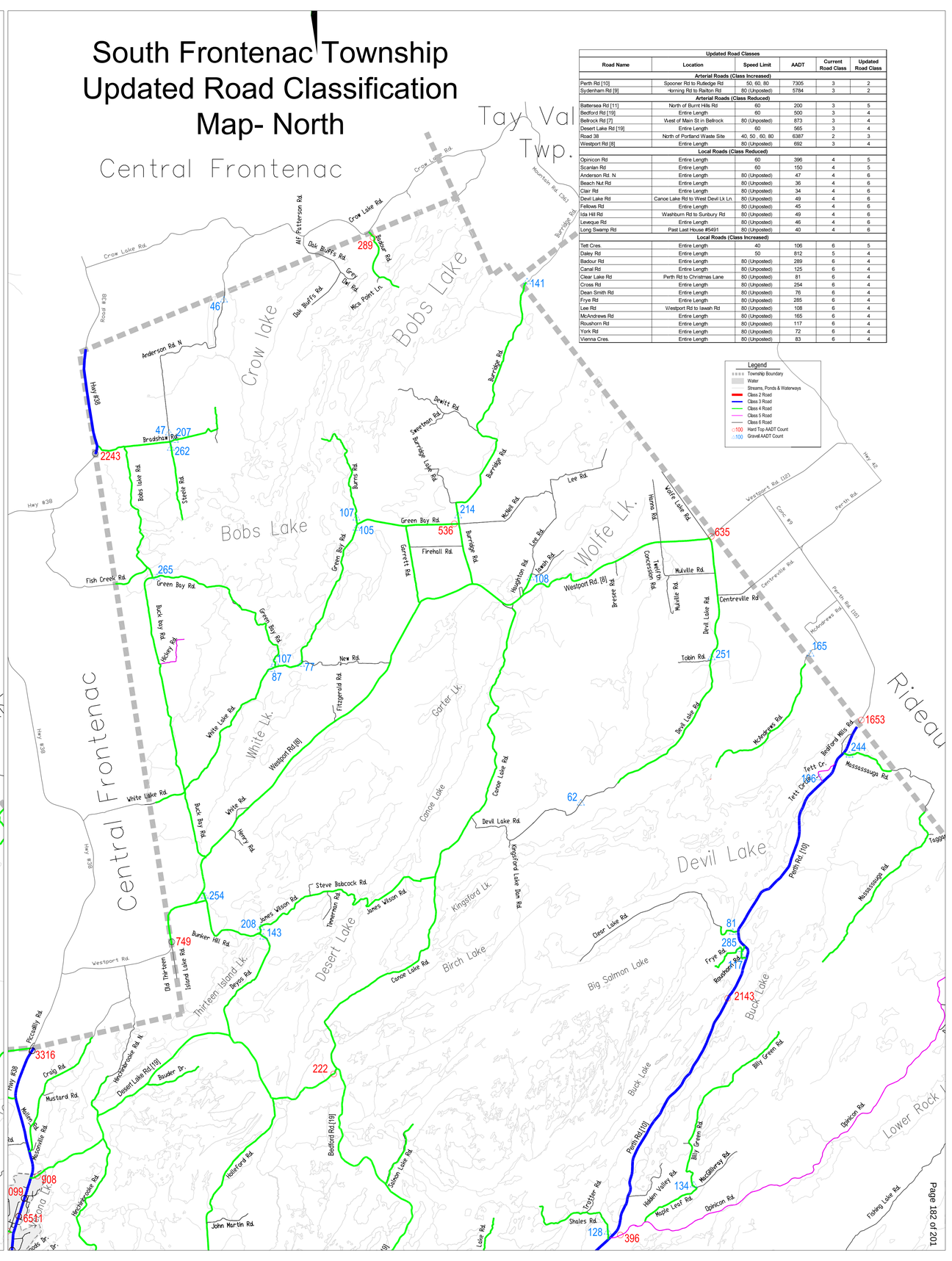

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Mud Lk.

Vanluven Lake

Verona Lake

Thirteen Island Lk.

Desert Lake

Knowlton Lake

Sydenham Lake

Loughborough Lake

Dog Lake

Cranes Nest Lake

Collins Lake

STAFF REPORT
PUBLIC WORKS DEPARTMENT

Prepared for Council: March 17, 2015

Agenda Date: March 24, 2015

COMMITTEE OF THE WHOLE REPORT

SUBJECT: **FACILITY SIGNAGE**

BACKGROUND:

A discussion will take place on facility signage relative to a mock-up of the township.

RECOMMENDATIONS:

Open

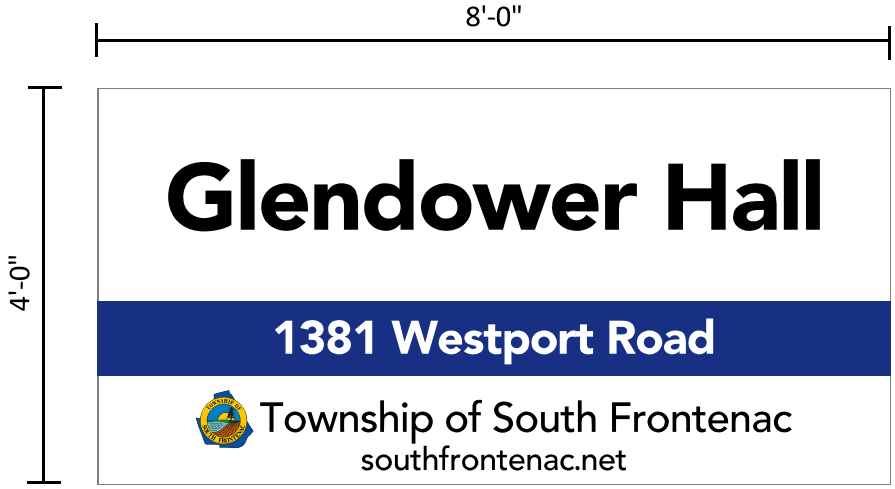
FINANCIAL/STAFFING IMPLICATIONS:

N/A

ATTACHMENT: Township Map

Submitted/approved by:

Mark Segsworth P. Eng.
Public Works Manager



ESKEROD SIGNS

CLIENT	TOWNSHIP OF SOUTH FRONTENAC	ADDRESS	SYDENHAM / ONTARIO
SIGN TYPE	CUSTOM SIGNAGE - ALUMINUM	SIZE	SEE ABOVE
SCALE	NOT TO SCALE	DATE	MARCH 17 / 15
		DWG NO.	SY-01-06-15

STAFF REPORT
CLERKS DEPARTMENT

PREPARED FOR COUNCIL: **March 16, 2015**

AGENDA DATE: **March 24, 2015**

SUBJECT:

Chain of Office – Final Design

RECOMMENDATION:

That Council approve the final design and layout of the South Frontenac Chain of Office.

BACKGROUND:

The 2015 budget includes $5,000 for the purchase of a Chain of Office for the Township of South Frontenac.

Attached is a colour rendition of the proposed Chain of Office. Incorporated into the chain are:

- The Township Coat of Arms
- The four logos of the former Townships
- The Canadian and Ontario Coat of Arms
- Two trilliums
- Two maple leafs
- And a number of name bars for engraving

The choice of base metal is gold, silver or pewter. There is no cost difference only appearance. Samples will be circulated at the meeting. The quote for the finished product is $3,399 plus taxes and delivery.

Some Councillors may notice that the Loughborough crest is somewhat different from the quilt that appears in the chamber. Upon investigation, three versions of the crest have been found.

The Quilt	- with three stars at the top
The lapel pin	- with what appears to be a maple leaf in between two stars (although this could be a detail lost in the enameling process)
Old Letterhead	- with a stylized cross between two stars

Our supplier has provided an 1851 record of the Buncombe-Poulett-Thomson family crest that appears to be a replica of the Loughborough crest. Our supplier has interpreted this drawing as a lotus plant between the stars and has included this in the version before you.

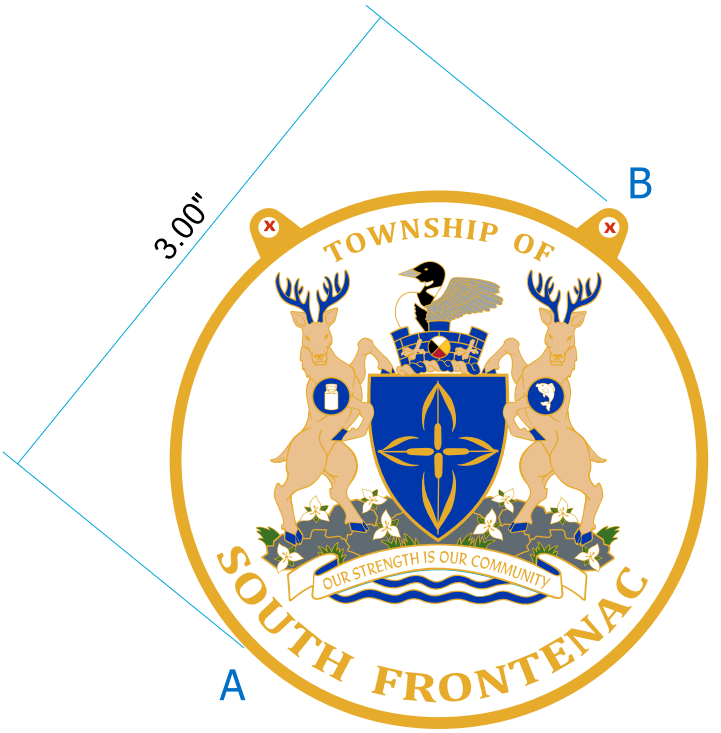
Council will need to decide what version to accept.

ATTACHMENTS:

Draft chain of office.

Submitted/approved by:
Wayne Orr, CAO

FILE NAME : South Frontenac M



Size - 3" (A - B)

Highly Polished Gold Plating		
485 C	7508 C	364 C
286 C	443 C	White
123 C	431 C	Black

X Tooling

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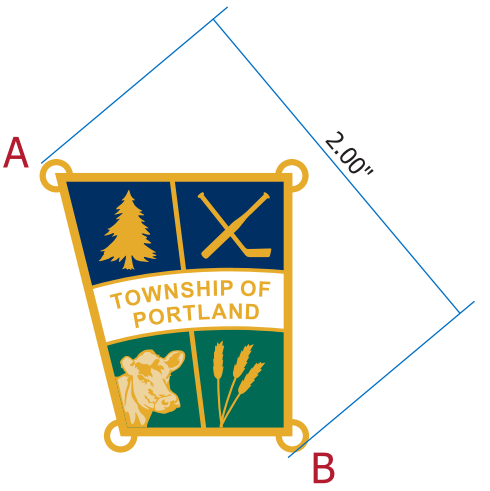
FILE NAME : bedfordTWP



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Highly Polished Gold Plating

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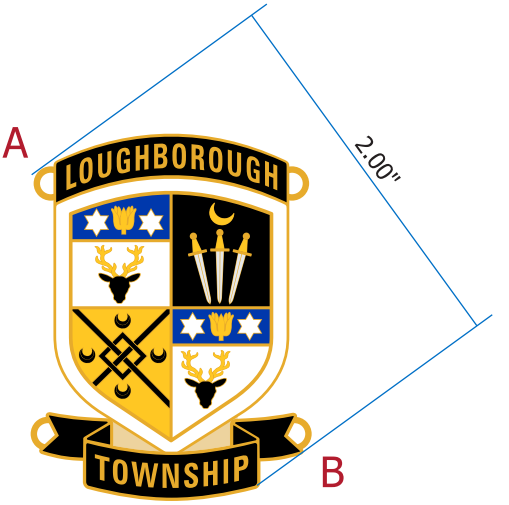

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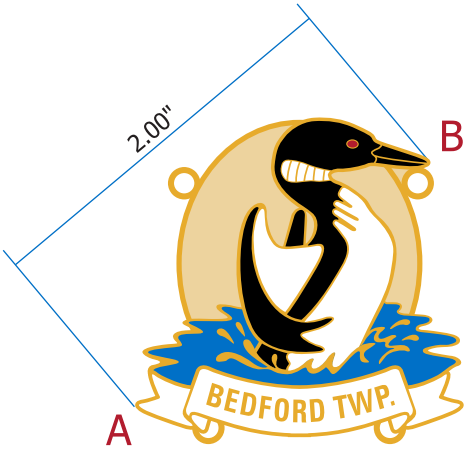

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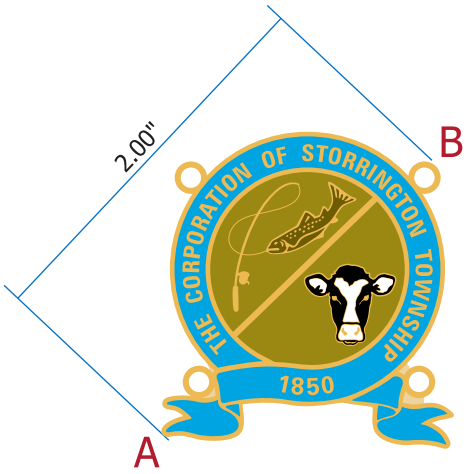

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PORTLAND
THE CORPORATION OF STORRINGTON TOWNSHIP
1850


TOWNSHIP OF
OUR STRENGTH IS OUR COMMUNITY
SOUTH FRONTENAC

From: Frances Willes [mailto:moonriver.corners@icloud.com]
Sent: March-13-15 12:45 PM
To: Wayne Orr
Subject: Johnston Point Development

Dear Mr. Orr:

As a concerned and participating citizen of Loughborough District, South Frontenac Township in the *Johnston Point -Vacant Land Condominium* development, I would ask to be informed of the results of Council's '*next steps*' in the process, in order that I may continue to be in attendance, and/or have the opportunity to participate until the design is finalized and accepted. Thus far, I have attended at the Council Chambers to hear reports to Council, Committee-of-the-Whole, Public Meeting, Open House, and other meetings of Council in both 2014 and 2015 where Council discussed the development.

I am interested in land planning, and believe that land development should, and must occur in our township. It is a requirement under the *Planning Act* that there be participation between the public and developer through our Council. In this case, the safe development of Loughborough Lake is imperative, and from my observations of Council, and our Township Planner, this part of the process is well underway in order to prevent any possible future pollution of Loughborough lake by permitting continued public input into the process until the development reaches its final design, and is accepted.

Now, that the new Council has had an opportunity to speak to the findings of this development this past week, and they have laid out '*next steps*' in order for the development to proceed, I await the results. Once these '*next steps*' become a reality for the public to scrutinize, I stand ready to submit, in writing, my opinion on the final design as a ratepayer and citizen of Loughborough District.

With my thank you, i would ask that you forward my email to all of Council and our Planner.

Sincerely, Fran Willes.

Angela Maddocks

From: Wayne Orr
Sent: March-17-15 1:03 PM
To: Angela Maddocks
Subject: FW: Johnston Point "Lot Line, Front" definition

Please put original email on March 24 agenda as correspondence

thanks

Wayne

Wayne Orr
Chief Administrative Officer
Township of South Frontenac
4432 George St., Box 100
Sydenham ON, K0H 2T0

T (613) 376-3027 ext 2225
F (613) 376-6657

From: Helen Bartsch [mailto:helenbartsch@gmail.com]
Sent: March-16-15 10:38 PM
To: Ron Vandewal; markschjerning@outlook.com; elbe@web.ca; john.mcdougall@xplornet.ca; robinsonw@bell.net; councillornroberts@gmail.com; sfcron.sleeth@gmail.com; patbarr1@aol.com; councillorrevill@gmail.com
Cc: Lindsay Mills; Peter Young; Wayne Orr; Brian W; Sherry Corneil
Subject: Johnston Point "Lot Line, Front" definition

Dear Mayor, Deputy-Mayor and Councillors,

I am writing to you on behalf of the Group of Concerned Residents (re Johnston Point), whom you have heard from at several Council forums.

We appreciate that you have chosen to re-examine many issues with the Johnston Point Development, as currently proposed, including the measurement of water frontage and what constitutes a water front lot.

We would like you to consider this additional but related item, namely the South Frontenac zoning definition of "Lot Line, Front", and how it affects the zoning of the lots on Johnston Point. Mr. Mills has provided you with some zoning definitions and *starred some that he felt were pertinent. However, he did not include the full definition of "Lot Line, Front" (P.12 & 13, By-law 2003-75 - Comprehensive Zoning By-law) nor indicate it as pertinent. We believe it is.

Please note the two definitions from South Frontenac Township Zoning Definitions (my bolding and underlining) :

"LOT LINE, FRONT" shall mean the line that divides a lot from a street, a private lane or a navigable waterway. In the case of a lot with frontage on a street, the front lot line shall be deemed to be the line that divides the lot from the street. ***In the case of a lot with frontage on a private lane and a navigable waterway, the lot line between the waterway and the lot shall be deemed to be the front lot line.*** *In the case of a corner lot either lot line may be deemed to be the*

front lot line. ***In the case of a lot with frontage on a public road and a navigable waterway, the lot line between the street and the lot shall be deemed to be the front lot line.***

"NAVIGABLE WATERWAY" shall mean a body of water or a stream pursuant to the Beds and Navigable Waters Act or the Navigable Waters Protection Act.

To understand "Navigable Waterway" we researched further and found that in 2011, the Ontario Superior Court of Justice concluded that the common law of navigability "requires that the waterway be navigable" and "must be capable in its natural state of being traversed by large or small craft of some sort." http://en.wikipedia.org/wiki/Navigation_Protection_Act

We contend that the (on-land) wetlands found in several areas on Johnston Point are not "navigable waterways", as per the Township of South Frontenac's zoning definition and the further definition quoted above, but were treated as such by the Developer. We contend that the boundaries of these (on-land) wetlands were, thus, incorrectly used by the Developer in this development:

- as a front lot line and as water frontage (Units 13, Common Element Parkland, Unit 6, Unit 7 and Unit 9) , and

- as part of the front lot line and as part of the water frontage (Unit 12, Unit 5 and Unit 8).

We believe that the lots behind the wetlands are not water front lots and that the lots which used part of the wetlands as their front lot lines do not constitute lots with correct water frontage. We believe that there are a few lots which could use "navigable waterways" for their full "front lot line", namely Units 1,2,3,4,10,11, and14.

Furthermore, we bring your attention to a similar policy in CRCA Planning Policy 2005, which I referenced in my presentation at the Open House, Mar.3, 2015.

(#7, P. 24, CRCA Planning Policy-Updated Version 2005) which states , "All new parcels of land with frontage on a waterbody shall have at least one location that provides reasonable water access (for motorized pleasure craft) without the need for dredging or removal of emergent or submergent vegetation.
http://www.crca.ca/wp-content/uploads/PDFs/CRCAPlanningPolicy2005.pdf (Although the 2005 policy is to be followed with this development, this same policy is also included in the new CRCA 2014 Planning Policy, Section 3.2.7.)

The lawyer, Mr. Fleming, at the March 10 Committee of the Whole, explained that a vacant land condominium creates units that are parcels of land. Many of the parcels of land (units) on Johnston Point do not meet the requirements outlined in CRCA's policy.

The transgression of these definitions and policies further demonstrates the major faults with this development. We strongly believe that the Johnston Point Development includes numerous violations of the South Frontenac Official Plan and Zoning By-Laws.

Thank you for your consideration.

Helen Bartsch (on behalf of a Group of Concerned Residents)
613-389-7101 helenbartsch@gmail.com

From: Lucas Wales [mailto:lwales@travellandolakes.com]
Sent: March-17-15 2:08 PM
To: lwales@travellandolakes.com
Subject: Land O' Lakes Event Reminder - Tuesday March 31st

Good afternoon everyone,

On Tuesday March 31st the Land O' Lakes Tourist Association will be hosting a networking evening from 6.30-8.00PM at the Lakeview Tavern In Erinsville for members and prospective members of the association.

On tap for the evening I will talk about our new website, our completed marketing plan, SEO Optimization Stats for our Region, social media tools, as well as a recap of the past year at LOLTA. This evening will also feature three speakers:

Tanya Meszaros - Lakeview Tavern & Board Member at Land O' Lakes

Susan Meisner - Spindle Tree Gardens

Bret Coleman - Frontenac Stewardship Council

This event is meant to cover the presentation and meal component we usually have at our Annual General Meeting, an informal AGM if you will.

The formal AGM date will be posted and advertized soon, and at this years AGM we will be looking after business of the Association only, though all members will be invited and encouraged to attend if they wish to serve on the Board of Directors.

If you plan to attend our networking evening on the 31st please **RSVP myself by Friday March 27th.**

Thank you everyone,

Lucas

--
Lucas Wales- General Manager
Phone: 613-336-8818
Email: lwales@travellandolakes.com
Web: www.travellandolakes.com
@discoverlol

March 17, 2015

Members of Council
Township of South Frontenac
4432 George Street, Sydenham, Ontario

Re: Draft Plan of Vacant Land Condominium
Johnston Point – Township of South Frontenac

The following letter provides a response to a motion prepared and presented by Councillor Ross Sutherland at the March 10, 2015 Committee of the Whole meeting. The motion recommends that Council refer the planning report and draft site conditions back to the Planning Department to address 11 specific issues raised in a document circulated by Councillor Sutherland at the March 10 meeting. It is our understanding that this motion is going to Council for a decision at the March 17 meeting. We have read Councillor Sutherland's notice of motion and offer the following responses.

1) *A response to comments and recommendations from the Battersea and Loughborough Lake Association; and,*

   The Township Planner has provided a response to the comments of the Lake Association which has been attached to this letter. Representatives from the association have been to the property and we remain willing continue to an open dialogue with them.

2) *A map of the development from the Planning Department that is appended to the report showing the development and its relationship to all adjacent wetlands; and,*

   The draft Plan of Condominium is consistent with the requirements of the Planning Act. Through the documents that have been prepared in support of this development proposal we have acknowledged that Long Bay is part of the wetland complex.

3) *A proper map indicating the high water mark. If, at this stage of the project development, the developer wishes to change the high water mark from the one previously submitted on the September 5, 2014, map prepared by WESA for Magenta Waterfront Development Corporation, and updated in the September 29, 2014 planning report, an explanation of why this is a more appropriate high water mark and the technical work that was done to justify the change. The high water mark on this diagram would indicate insufficient for the creation of lots 12, 13 and 7. The impossibility of these, and possibly all the lots on Long Bay having wetland frontage that is not viable waterfront in consideration of the 2005 CRCA planning regulation Section 3.2.7 also needs to be considered; and,*

   The high water mark of Loughborough Lake is based on the CRCA's defined elevation which is 125.03 metres geodetic. As this is a defined elevation and we have detailed topographic

information for the site we can say with confidence that the wetland boundaries closely match the high water mark. We appreciate that the draft plan could be labelled more clearly, but it does not change that fact that the wetlands are within the high water mark of the lake.

4) *An explanation of why the high water mark changed from the June 14 map to the September 29 report as the rational is unclear in the reports; and,*

The high water mark did not change from the June 14 map to the September 29 map. As noted above, we are prepared to revise our draft plan to more clearly indicate 125.03 m geodetic on the draft plan. We expect this clarity may assist Council and others with understanding the location of the high water mark on the property and its relationship to the measurement of water frontage. Again, we are prepared to provide this clarity on the plan as part of the draft approval.

5) *A formal report on water depth in the lake and wetlands surrounding Johnson Point be taken at low water if the developer wishes to apply for these lots as if they were not a shallow water body (the County map depth charts shows all of these as shallow water bodies and frontages should be determined accordingly); and,*

The Official Plan policy in question states the following, "Waterfront lots which are proposed adjacent to a shallow waterbody (less than 3 metres (10 ft.) deep, 30 metres (100 ft.) offshore at low water) may be required to have a water frontage of 150 metres (492 ft.). Unless the property abuts a natural sand beach, shallow waterbodies tend to be more environmentally sensitive and less intensive usage is appropriate. Reductions to this requirement will only be considered if convincing environmental evidence prepared by a qualified professional is presented by the applicant demonstrating that no negative impacts will result."

The intent of this policy is to ensure the long term protection of shorelines from overdevelopment. As you are aware an extensive EIS was conducted along with a peer review from the CRCA that has concluded the proposed development in appropriate. We are confident that the proposed lot layout which includes large lots, large setbacks and a condominium approach (allowing for further restrictions such as vegetation protection) meets the intent of policy 7.1.1 as it related to development that abuts shallow water.

Despite our policy confirmed opinion, the majority of the development conforms to these policies. All but two lots fronting onto the lake or wetland have a minimum water frontage of 150 metres, as measured 9 metres back from the lot line in accordance with the Zoning By-law. Lots 10 and 14 have 143 metres and 139 metres of water frontage respectively. If a change was required by either the Township or County minor lot line adjustment can be made to achieve a larger water frontage for lots 10 and 14 without altering the proposed development.

6) *If the developer wishes to change the wetland boundaries from those indicated on the MNR's map, a confirmation from the MNR that this is acceptable and that the developer has gone through the process outlined in the official plan, section 5.2.7 (d), to change the wetland boundaries; and,*

The County of Frontenac and Ecological Services consulted MNRF regarding the wetland

boundary. Discussions revealed that MNRF did not visit the wetland as part of a recent boundary update, but instead performed a desktop exercise to delineate the boundary. As such the boundary can only be treated as approximate in accordance with both the County and MNRF's mapping disclaimer as follows:

The County's mapping disclaimer, "These maps are intended for general reference only and shall not be used to establish legal lot size or dimensions. These maps shall not be used for navigation."

MNRF similar disclaimer on their mapping website, "information in this application is illustrative only; it should not be used as a precise indicator of travel routes, ownership, location of features, or guide for navigation."

On the contrary Ecological Services were provided with processed Digital Rastor Acquisition Project for the East imagery (DRAPE) which was sourced from MNRF in 2014 (processing is done to align the digital imagery with actual survey and topographical information). This processed layer then provides the base for the plan the various consultant team members to test and further refine through ground truthing.

As part of Ecological Services ground truthing of the various site features, they visited the site numerous times over a number of years, performed extensive field work, in addition to conducting its own commissioned aerial flights in 2010 and 2014. Given the ecologist's extensive work in the field and actual "boots on the ground" boundary verification, we are confident with the accuracy of the boundary identified in the EIS. It should further be noted that the Cataraqui Region Conservation Authority has provided sign-off on the ecological work performed, including the identified wetland boundary.

7) *A written explanation from the planner of why the Provincially Significant Wetland abutting the Applewood development is not considered waterfront, as the planner stated in the March 3, 2015 Council meeting and is apparent in the approval documents for the Apple wood development, while the wetland on Johnson point is now being used as waterfront; and,*

The Zoning By-law amendment for the Applewood development has not been brought forward to Council for consideration. We are confident the relationship of wetland areas in the Applewood development will be addressed at that time.

8) *An assessment, through the EIS, of the impact of increased motor boat traffic into the Long Bay provincially significant wetland on fish spawning, wetland species, loon nesting and phosphate release into the lake due to sediment disruption as part of the requirement for evaluating negative impacts of the development; and, (requirement from Official Plan section 5.2.11(c)). The response (September 3,2014) from Ecological services to the CRCA recommendations goes part way in meeting this requirement but assumes that dock development into Long Bay would be prohibited. It can reasonably be anticipated that if lots on Long Bay are sold as waterfront then purchasers are going to expect to be able to install a dock. This assumption is complicated by the lack of clear regulations on small dock approval with the probability of significant conflict on this issue. This issue remains unresolved and would benefit from comment by the Planning*

Department on including a condominium prohibition on docks in Long Bay, or other approaches to protecting the provincially significant wetland from increased boat traffic so that purchasers are aware of this restriction before purchasing, reducing the potential for increased conflict in the Township. Similar concerns and recommendations were raised by the Battersea Loughborough Lake Association: and.

Ecological Services report has been Peer reviewed by the CRCA. Anyone wishing to install a dock on any water body regardless of its size is required to consult with the Conservation Authority and to apply for a permit.

An EIS can have several conclusions.

- Impact is too great, resulting in no dock.
- Impact is manageable if the dock is of a certain type, or put in a certain location.
- Impact is no concern.

The conditions of draft approval, Condominium documents, sales agreements and site plan control applications can all ensure the process for installing a dock is made clear to any future buyer, consistent with the approach recommended in the EIS.

9) *An evaluation from an engineer that the road structure is capable of withstanding the expected use from 17 lots, approximately 170 car trips a day plus increased heavy truck traffic, rather than from the original three lots that were contemplated in the original engineering design. As noted by the environmental consultant the road was engineered to minimize the risk of blowout, but that engineering was done on the assumption of minimal traffic on the road related to three cottages, there has not been subsequent engineering evaluation. The letter submitted saying the road poses no threat was from an environmental consultant not the engineers who designed the road and addressed run-off issues not possible blowout, and,*

All new lots will have frontage on the condominium road, which will be built to meet the Township's standards for private roads. It is expected that a condition of draft approval would require the Township's sign off on the quality of the construction of the road. Furthermore, the road will be operated through a common element condominium agreement. The formation of a condominium corporation will provide the administrative framework to address routine maintenance and periodic upkeep of the common element road.

10) *An explanation of why no lake capacity assessment was done as required by the Official Plan, section 5.2.10; and,*

The purpose of a Lake Impact Assessment, according to Section 5.2.10 of the Official Plan, is to assess potential impacts of development on water quality and how that directly or indirectly impacts fish habitat. More specifically, computer modelling is used to measure increases in phosphorus as it relates to development. While it is unfortunate this section of the Official Plan is not clear as to when a Lake Impact Assessment is required, one only has to read the sections on Lake Trout Lakes just prior in Section 5.2.8 for a better understanding of when a Lake Assessment is required. The policies of Section 5.2.8 states that a Lake Impact Assessment prepared in accordance with Section 5.2.10 of the Official Plan **may** be required on lakes that are highly sensitive lake trout lakes or moderately sensitive lake trout lakes. Only the west basin

of Loughborough Lake is considered highly sensitive to new development and site alteration. Therefore, a Lake Impact Assessment was not a requirement. The Conservation Authority and MNRF have both signed off on the development as proposed.

11) *No recommendation from the planning staff, rather information on the issues raised and proposed site plan conditions with a request for direction. Considering the considerable controversy and debate over the development, Council is in a position to consider the development on its own terms.*

    In opposition to this comment, the Township Planning Department has recommended draft approval of the proposed Plan of Condominium. The Planning Department's position is based on sound planning principles including the advice it receives from its peer review agencies. It is with the full support of these agencies that allows the Planning Department to know with confidence the development can advance to draft approval. We respectfully request that Council make no further delay in making a decision on this development application.

Finally, the matter of water frontage has been the subject of much conversation. For clarity our position supports that of the Township Planner which is summarized as follows:

Township Zoning By-law definitions:

"WATER FRONTAGE" shall [mean] all property abutting a waterbody measured perpendicular to the side lot lines in a straight line between the two said lot lines at a point where the side lot lines intersect with the high water mark.

"WATERBODY" shall mean any bay, lake, wetland or canal but excludes a drainage or irrigation channel.

Water frontage is measured at the high water mark of a bay, lake, wetland or canal. The measurement as provided on the draft plan is consistent with this approach.

Please contact me at 613-542-5454 ext. 221 should you require any further information.

Respectfully submitted,

Mike Keene, MCIP, RPP
Senior Planner

cc Lindsay Mills, Township Planner
Peter Young, County Planner

Enclosure – Township Planning Department's Response to Lake Association

March 10, 2015

JOHNSTON POINT DEVELOPMENT PROPOSAL

COMMENTS FROM BLLA

(RESPONSE FROM PLANNING DEPARTMENT)

1. The letter asks how many more development proposals would be acceptable on this portion of the lake and that we should plan better for these developments.

   There is possibly only one existing large parcel on the east basin of Loughborough Lake that could be considered for a subdivision development. Other large parcels on this portion of the lake are inaccessible ie., they are accessed either by a lane or have no access at all. The Official Plan states that plans of subdivision or plans of condominium must gain their access from a fully maintained public road.

2. The letter states that given the environmentally sensitive nature of this area it is critical that all environmental concerns be fully addressed and all planning requirements be followed without compromise.
   The environmental report that was submitted in support of the application is comprehensive and establishes specific setbacks for development on each unit and other mitigation measures. All planning requirements are being followed without any compromise ie., all of the minimum standards for development are being applied.

3. The letter expresses concerns that the Official Plan may not have been followed for waterfrontage for lots on narrow and shallow waterbodies.

   The Planning Department required these minimum frontages even at the first consultation meeting with the applicant. Based on the Plan submitted, all the frontages appear to comply with the provisions of the Official Plan and the zoning by-law.

4. The letter states that the water depth of Loughborough Lake at Johnston Point is only 6 feet and thus the 150 metre minimum frontage should be applied to all of the lots. It also questions whether the highwater mark is the property line or whether it is the wetland boundary. It questions if docks would be permitted on the wetland.

   The only unitl that does not have 150 metres of waterfrontage is Unit #14 which appears to have 140 metres. However, this unit is on open water that is not shallow according to checks conducted in the field by the Planning Department. For purposes of measuring waterfrontage,

either the open water or the wetland boundary constitute waterfrontage. Docks would not be permitted on the wetland – only where dry land meets the open water.

5. The letter emphasizes that all of the recommendations of the CRCA be incorporated into the Condominium Agreement as well as all of the setbacks noted in the environmental report. It also requests that the agreement specify ongoing monitoring of the environment for present and future owners of the units.

The requirements of all agencies including the CRCA will be incorporated into the condominium agreement and the setbacks specified in the environmental report will be in the special zoning for the property.

6. The letter expresses concern that future owners will cut trees and destroy the natural setting.

At the present time there are no controls on the property. Under the condominium agreement there will at least be control (similar to site plan control) to protect the environment near the waterbodies and establish large setbacks for development.