

## **FIRE SUPPRESSION AND EMERGENCY RESPONSE**

Most residents view the key service that is provided by the fire department to be fire suppression and emergency response. The purpose of this report is to:

- Summarize the current response services and methods provided by the Kingsville Fire Department.
- Summarize and analyze the response statistics (including number and type of calls, staffing, response times and trends over time) and compare them to recognized standards.
- Identify any gaps between recognized response methods and service delivery levels and recommend strategies to mitigate them.

### **Response Classifications:**

The Kingsville Fire Department provides emergency response utilizing two stations staffed by volunteer firefighters. The south station is located at 1720 Division Road and the north station is located at 120 Fox Street. Responses are classified as:

- "No alarm" calls for burning complaints and carbon monoxide calls without symptoms, where only a duty officer is called to attend.
- "Company Calls" for medical assist, carbon monoxide alarm calls with symptoms, rubbish fires, wires down, and opposite station assistance calls where only one company of firefighters is called. Each station is divided into two companies.
- Full alarm calls for all other responses. The entire station is called for a full alarm call.
- Two station calls for all confirmed structure fires where the jurisdictional station responds with a full alarm and the second station responds with a company call.

The use of duty officers for "no alarm" calls has provided an efficient and cost effective strategy for dealing with non emergency situations. It may be prudent from both a safety and liability standpoint to consider having a minimum of two personnel respond to these incidents.

- ***Recommendation #1: That the Fire Chief and Officers devise a system whereby two fire department personnel respond on "no alarm" calls which occur outside of regular business hours.***

### **Core Services:**

The Office of the Fire Marshal has published a series of Public Fire Safety Guidelines for the use of municipalities to determine the effectiveness of their fire protection program. Guideline 04-12-13 outlines the core services which a municipality may choose to provide. The core services define the "level of service" which the department is to

provide as directed by council and should be clearly identified in the Establishing and Regulating Bylaw for the Fire Department. In terms of emergency response, the following core services are listed in this guideline (italicized services are those currently being provided by the Kingsville Fire Department)

1. basic firefighting - no expected rescue component
2. *structural firefighting including rescue*
3. *vehicle firefighting*
4. *grass, brush, forestry firefighting*
5. *marine firefighting*
6. *automatic aid*
7. *mutual aid*
8. *basic medical assist*
9. *advanced medical assist with defibrillation*
10. *awareness level hazardous materials*
11. *operations level hazardous materials*
12. technician level hazardous materials
13. *vehicle accidents*
14. *vehicle extrication*
15. *transportation incidents involving vehicles, trains, aircraft and watercraft*
16. *water and ice - shore based*
17. *water and ice - water entry*
18. *water and ice - boat*
19. *public assistance*
20. *ambulance assistance*
21. *police assistance*
22. *public utilities assistance*
23. *community emergency plan participation*
24. urban search and rescue (light and heavy)
25. *high angle rescue*
26. confined space rescue
27. farm/silo rescue
28. *role as Assistant to Fire Marshal re suppression*

For informational purposes, several of the core services outlined will be described in greater detail.

Mutual Aid and Automatic Aid: The Kingsville Fire Department has been part of the Mutual and Automatic Aid Plan and Program for the County of Essex for over fifty years. This program is overseen by the Office of the Fire Marshal and is administered by the Essex County Fire Co-ordinator (normally the Fire Chief of the City of Windsor). Municipalities participating in the program have each passed bylaws authorizing the same.

Mutual aid is a system whereby a fire department can request the resources of other county municipalities at an incident where their own resources are depleted. By the same token, the fire department will provide their resources to other municipalities in a reciprocal arrangement.

Automatic aid provides for the closest fire station to respond to an incident irrespective of municipal boundaries. The Kingsville Fire Department has automatic aid agreements with Essex (in the northwest corner of the response area) and Leamington (in the southeast corner of the response area). Should an incident occur in either of these locations where the stations in Essex or Leamington are closer and life and/or property are threatened, they will be called to respond with an engine and crew to initiate operations until Kingsville units arrive. The Kingsville Fire Department provides similar services to Essex (in their southeast corner) as the backup station for structure fires and Lakeshore (in the South Woodslee area). There is a minimal fee associated with the automatic aid on a per incident basis. It is currently set at \$300.00

#### Medical Assistance Calls:

The Kingsville Fire Department provides advanced medical assistance with defibrillation under a letter of agreement with the County of Essex Land Ambulance Division. The department is requested to respond by the Central Ambulance Communications Centre for the following situations:

- A Code 4 (emergency) response where there will be a significant response delay by ambulance. A response delay is defined as the inability of a normally staffed ambulance or standby ambulance that normally services the response area to respond.
- All vital signs absent calls.
- All Code 4 calls for motor vehicle accidents.
- All emergency calls where there is suspected patient entrapment requiring extrication.
- All calls that would normally require the expertise of fire services such as fuel spills, wires down, industrial accidents etc.

The original response agreement was not as well defined and resulted in a significant number of medical calls where the fire department was not required. In 2003, for example, 21% of the department's responses were for medical assistance and at 44% of these calls the fire department was not required or utilized. These trends resulted in a review of the agreement by all county fire departments and the new agreement being instituted in 2006. The current agreement was modified to this protocol in 2006 and it is functioning very well. In 2009, medical calls constituted 8.46% of the department's responses and there were very few of these calls where the fire department was not utilized (usually due to the arriving paramedics finding the patient already deceased). The increased staffing and coverage by the ambulance service has also decreased the number of significant delays dramatically.

### Hazardous Materials Response:

The Office of the Fire Marshal has adopted N.F.P.A. 472 as the standard for hazardous materials response. The standard identifies three levels of response:

- Awareness.
- Operations.
- Technician.

All Kingsville Fire Department staff are trained to awareness level and several personnel at each station are trained to operations level. Awareness level activities include securing the site, identifying the product(s) involved, assessing the situation and contacting appropriate agencies for assistance. Operations level increases the level of response to include mitigation and decontamination activities but personnel do not come into contact with the spilled material. Technician level involves active measures to control and contain the material and may include the use of chemical suits and specialized tools and monitoring devices. The Windsor Fire Department provides technician level hazardous materials response to the Kingsville Fire Department as part of the Mutual and Automatic Aid Plan and Program for the County of Essex. As part of the agreement, we must maintain personnel trained to operations level and provide decontamination services to their personnel who respond. Both departments have trained together on these types of responses.

### Water and Ice Rescue:

The Kingsville Fire Department has provided boat based water rescue services since 1954. Although the number of water rescue calls has decreased over the years, the expectation of the residents is that the fire department is depended upon to provide these services. The department also provides water entry level ice rescue services. The required certified equipment to provide these services has been obtained and maintained. All personnel are trained in shore based and water entry ice rescue. As well, all personnel who operate the rescue boat have been trained to MED A-3 standards. This training is recognized by Transport Canada for operators of commercial vessels.

### High Angle Rescue:

The Kingsville Fire Department operates a high angle (rope) rescue team consisting of 12 personnel (six at each station). Team members have been trained to the operations level of N.F.P.A. 1670 at the Ontario Fire College by the Municipal Health and Safety Association. The training operational risk assessment identified that two personnel be trained to technician level in 2010. This level will include the use of basket stretchers and similar equipment. The high angle rescue team is available to assist other county fire departments under the mutual aid agreement.

- ***Recommendation #2: That the Establishing and Regulating Bylaw for the Kingsville Fire Department be amended to clearly define the core services provided as identified in the Master Fire Plan report.***

### **Response Standards and Best Practices:**

This section of the report will outline the various standards and best practices in effect against which the fire suppression and emergency response capabilities of a fire department are measured.

#### Office of the Ontario Fire Marshal Fire Safety Effectiveness Model:

This model states that “the overall objective of any fire department is to provide the community with the optimum level of protection from fire and other related public safety hazards while, at the same time, ensuring an appropriate level of health and safety for firefighters.” The model is based on a seven factors which affect fire protection and response in a municipality. Determining where gaps exist between existing and desired performance in each of these areas and then using strategies to minimize these gaps will optimize effectiveness.

*Fire Risk: An assessment of the fire risk within the community is an important tool to determine response requirements. The number and type of structures, construction, types of fire loads, water supply, exposures, and potential life safety hazards are all factors which are considered and have been discussed in the fire prevention risk assessment of this report.*

*Fire Prevention Program Effectiveness: Inspection and enforcement are two of the most effective ways to decrease the loss of life and property in a municipality. Public fire safety education, coupled with inspections and enforcement, will enhance the decrease in the loss of life and property. Although it is difficult to measure how many fires did not occur due to these initiatives, the need for emergency response is directly linked to their effectiveness.*

*Public Attitude: It is generally believed that most North Americans are more complacent about fires and the resulting losses than the rest of the industrialized world. Recent advances in public education have assisted in changing this attitude.*

*Detection Capabilities: Fire detection notifies occupants and allows them sufficient time to escape. It will also enhance early notification of the fire department. Widespread use of early warning detection systems*

*have the potential to significantly reduce notification time which, when coupled with effective fire department suppression, produces a corresponding reduction of loss of life, injuries and damage to property.*

*Built-in Suppression Capabilities: Sprinkler systems and fixed extinguishing systems are normally installed in larger commercial, industrial and assembly occupancies and, to a lesser extent, residential properties. These systems play an important role in minimizing the effects of fire by controlling its growth and spread.*

*Intervention Time: Intervention time is defined as the time from ignition of the fire until effective fire streams can be directed at the fire. Factors which affect intervention time include, but are not limited to:*

- *Time required to detect the fire.*
- *Notification time from the public.*
- *Notification time to fire department personnel.*
- *Preparation time for fire department personnel to leave the station.*
- *The distance between the fire station and the response location.*
- *The layout of the community.*
- *Impediments such as traffic, weather, construction.*
- *Set-up time.*
- *Type and size of building involved.*

*Fire Ground Effectiveness: A fire department's effectiveness on the fireground affects the degree of damage and loss of life from fire. Well trained and equipped staff operating under a strong incident management system with a well developed set of standard operating guidelines will greatly enhance this effectiveness.*

#### O.F.M Public Fire Safety Guideline 04-08-12 Staffing-Single Family Dwellings:

One of the most recognized standards is the one for staffing at a single family dwelling fire in an area equipped with fire hydrants. Other types of occupancies and those not protected by hydrants will require additional staffing. The standard is as follows:

- Minimum of 4 firefighters initially responding.
- Minimum of 10 firefighters on scene within 10 minutes for 90% of reported emergencies.

Functions of these 10 personnel are as follows:

Command	1
Pump Operator	1
Search and Rescue/Limited Attack Team	2
Back-up Team	2
R.I.T.	2
Ventilation Team	2

Comminque 2002-09 from the Office of the Fire Marshal identified that it may be impossible for some fire departments to attain this standard due to the distance they must respond and the rural nature of some municipalities. In these cases, public education and fire prevention activities should be used to enhance public safety.

#### N.F.P.A. 1720 Response Time Standards:

The O.F.M. single family dwelling staffing is based on N.F.P.A. 1710 and 1720. These standards are for full time (1710) and volunteer (1720) departments. This standard is included in this analysis for discussion purposes. It is based on population density and contains the following benchmarks;

- Urban zones with a population density greater than 1000 persons per square mile to assemble 15 staff in 9 minutes 90% of the time.
- Suburban zones with a population density between 500 and 1000 persons per square mile to assemble 10 staff in 10 minutes 80% of the time.
- Rural zones with a population density less than 500 persons per square mile to assemble 6 staff in 14 minutes 80% of the time.
- Remote zones with travel distances greater than 8 miles to assemble 4 staff and commence attack within 2 minutes of arrival 90% of the time.

#### Fire Underwriters Survey:

The F.U.S. is an organization utilized by the insurance industry in order to “grade” the fire protection provided by a municipality and thus set insurance rates. While the grading involves a number of factors, two of the most important

in terms of emergency response are distance from a fire station and protection by hydrants. For residential properties, being closer than 8km from a fire station and protected by a hydrant within 300m of the residence will result in a lower insurance cost.

For industrial and commercial properties, being closer than 5km from a fire station and protected by a hydrant within 300m of the property will result in a lower insurance cost.

#### **Kingsville Fire Department Response Statistics:**

The statistics utilized for this report will be for a five year period from 2005-2009 and are summarized in the following tables. It should be noted that the numbers reflect the worst case scenario when times are noted in that the averages include calls where apparatus was slowed down or cancelled by the first arriving officer where the size up indicated a false alarm or nothing showing. Calls show no on scene time when the call was cancelled prior to fire department arrival. Two station fire responses are included as a single fire response for a single station. In the charts “FULL” means full alarm, “C1” and “C2” are company calls (by company) and “NA” is a no ala

Total Responses:

	South Full Alarm	South Company	South "No Alarm"	<b>South Total</b>	North Full Alarm	North Company	North "No Alarm"	<b>North Total</b>
<b>2005</b>	166	49	62	<b>277</b>	58	4	11	<b>73</b>
<b>2006</b>	123	25	44	<b>192</b>	62	2	8	<b>72</b>
<b>2007</b>	156	50	76	<b>282</b>	77	13	21	<b>111</b>
<b>2008</b>	123	46	56	<b>225</b>	66	11	16	<b>93</b>
<b>2009</b>	128	55	61	<b>244</b>	58	8	9	<b>75</b>

Total Responses by Time of Day:

	<b>South 0800-1700</b>	<b>South 1701-0759</b>	<b>North 0800-1700</b>	<b>North 1701-0759</b>
<b>2005</b>	150	127	37	36
<b>2006</b>	87	105	32	40
<b>2007</b>	137	145	62	49
<b>2008</b>	111	114	43	50
<b>2009</b>	129	115	41	34

Time for First Person to Arrive on Scene:

	<b>South Full</b>	<b>South C1</b>	<b>South C2</b>	<b>South NA</b>	<b>North Full</b>	<b>North C1</b>	<b>North C2</b>	<b>North NA</b>
<b>2005</b>	5:34	6:44	5:31	19:28	5:59	2:31	6:30	8:29
<b>2006</b>	5:32	11:09	5:28	28:56	4:50	5:30	0:00	8:27
<b>2007</b>	4:34	3:47	3:13	15:18	3:44	2:48	2:45	6:58
<b>2008</b>	4:46	6:06	4:43	20:16	5:28	7:00	4:15	9:56
<b>2009</b>	5:02	5:04	5:10	19:16	4:40	3:25	0:00	15:16

Time for First Apparatus to Leave the Station:

Apparatus generally responds to full alarm calls with a crew of 5 for the north station and 6 for the south station. Based on the type of call and initial response of personnel the officer on the apparatus has the discretion to leave with a crew of 4 personnel. Apparatus for company calls, which are often medical responses, will leave with a crew of 2 or 3 with additional personnel directed to respond to scene to initiate C.P.R. or other medical aid measures prior to the arrival of the truck. While a quicker response to full alarms is possible with a skeleton staff on the apparatus, the fire scene operates

much more efficiently when apparatus arrives with a full crew. The time "lost" in waiting for a full crew to arrive at the station is "gained" in efficiency on the fire scene.

	<b>South Full</b>	<b>South C1</b>	<b>South C2</b>	<b>North Full</b>	<b>North C1</b>	<b>North C2</b>
<b>2005</b>	3:58	3:58	4:15	3:28	7:26	3:32
<b>2006</b>	3:33	12:22	4:17	3:24	5:00	0:00
<b>2007</b>	3:53	6:00	3:08	3:40	3:35	3:22
<b>2008</b>	4:38	5:41	4:26	4:31	6:30	5:12
<b>2009</b>	3:49	3:23	3:37	4:23	4:01	0:00

Time for First Apparatus to Leave the Station Weekdays vs. Weekends:

Times shown are for full alarm calls only.

	<b>South M-F</b>	<b>South S &amp; S</b>	<b>North M-F</b>	<b>North S &amp; S</b>
<b>2005</b>	3:59	3:56	3:22	3:46
<b>2006</b>	3:33	3:30	3:23	3:26
<b>2007</b>	3:44	4:12	3:41	3:38
<b>2008</b>	4:42	4:25	4:41	3:52
<b>2009</b>	3:52	3:40	4:51	3:39

Time for First Apparatus to Arrive at the Scene:

	<b>South Full</b>	<b>South C1</b>	<b>South C2</b>	<b>North Full</b>	<b>North C1</b>	<b>North C2</b>
<b>2005</b>	7:26	7:27	7:11	7:26	10:10	7:55
<b>2006</b>	7:00	16:59	7:10	7:36	6:00	0:00
<b>2007</b>	7:33	8:50	6:23	8:13	7:14	7:58
<b>2008</b>	8:04	9:42	7:18	8:05	9:30	8:09
<b>2009</b>	7:29	6:26	6:53	7:39	7:45	0:00

Total Staff Responding:

	<b>South Full</b>	<b>South C1</b>	<b>South C2</b>	<b>North Full</b>	<b>North C1</b>	<b>North C2</b>
<b>2005</b>	19.5	10.2	10	16.8	7.5	7
<b>2006</b>	20.5	9.9	10.9	18.1	11	0
<b>2007</b>	20	10.5	9.7	16.7	13.6	11
<b>2008</b>	18.2	8.7	9.3	17	13.5	9.7
<b>2009</b>	19.1	9.7	9.7	19.3	8.3	0

Total Staff Responding Weekdays vs. Weekends-Full Alarm Calls:

	<b>South M-F</b>	<b>South S &amp; S</b>	<b>North M-F</b>	<b>North S &amp; S</b>
<b>2005</b>	18.8	20.8	15.9	18.9
<b>2006</b>	20.3	21.4	18.5	17.3
<b>2007</b>	20.2	19.6	16.4	17.4
<b>2008</b>	18.3	18	17.1	16.8
<b>2009</b>	18.7	20.3	19	19.7

Responses by Type for All Calls by Per Cent:

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Property fire or explosions</b>	13.75	12.88	10.94	10.06	15.05
<b>Overpressure-no fire</b>	0	0	0	0	0
<b>Pre-fire Conditions</b>	2.01	3.41	3.31	3.77	4.08
<b>Controlled Burning</b>	17.48	10.98	17.05	11.95	8.46
<b>False Fire Calls</b>	13.75	20.83	19.85	20.75	15.36
<b>CO False Calls (new in 09)</b>	-	-	-	-	15.67
<b>Public Hazard</b>	20.34	21.21	14.76	21.07	6.27
<b>Rescue</b>	16.33	20.08	16.28	16.98	16.30
<b>Medical</b>	8.31	4.92	11.70	8.81	8.46
<b>Other Responses</b>	8.02	5.68	6.11	6.60	10.34

Pre fire conditions include incidents such as overheated motors, pots of the stove prior to ignition and lightning strikes with no fire. Public hazards include incidents such as natural gas leaks, wires down, spills, and carbon monoxide calls. Rescues include water/ice rescues, industrial accidents and motor vehicle accidents. The classification for CO False Calls was added in 2009 and resulted in a decrease in the public hazard class percentage where CO False Calls were previously coded.

Responses for Fires and Explosions Only by Occupancy by Per Cent:

	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
<b>Assembly</b>	4.17	2.94	4.65	6.25	0
<b>Institutional</b>	0	0	2.33	0	0
<b>Residential</b>	54.17	47.06	41.86	34.38	20.83
<b>Business and Personal Service</b>	4.17	0	0	0	0
<b>Mercantile</b>	6.25	0	0	0	0
<b>Industrial</b>	0	2.94	0	0	0
<b>Vehicle</b>	16.67	11.76	11.63	31.25	18.75
<b>Miscellaneous</b>	14.58	35.29	39.53	25	60.42



Staffing-Single Family Dwelling Responses:

The statistics for the single family dwelling responses are shown the in the following tables. Responses are divided in four separate groupings: the original town centre, the Village of Cottam, the Village of Ruthven and the rest of the town (suburban rural area). The statistics are based on full alarm calls for structures. In some cases, especially in Cottam and Ruthven, the statistics are based on a very small number of calls. Also shown are the statistics for 6 personnel arriving in 14 minutes (the N.F.P.A. rural standard). This standard was met 100% of the time.

<b>TOWN CORE</b>	No. Calls	10 in 10	%	6 in 14	%
2005	17	17	100	17	100
2006	20	18	90	18	100
2007	25	22	88	25	100
2008	22	18	82	22	100
2009	40	36	90	40	100

<b>COTTAM</b>	No. Calls	10 in 10	%	6 in 14	%
2005	1	1	100	1	100
2006	2	2	100	2	100
2007	2	1	50	2	100
2008	6	4	67	6	100
2009	0	-	-	-	-

<b>RUTHVEN</b>	No. Calls	10 in 10	%	6 in 14	%
2005	1	0	0	1	100
2006	0	-	-	-	-
2007	2	0	0	2	100
2008	4	2	50	4	100
2009	2	0	0	2	100

<b>SUB/RURAL</b>	No. Calls	10 in 10	%	6 in 14	%
2005	27	12	44	27	100
2006	22	10	46	22	100
2007	35	11	31	35	100
2008	37	11	30	37	100
2009	40	12	30	40	100

In cases where the 10 personnel on scene in 10 minutes was not met, the table below indicates the average number of personnel and the time to reach a minimum of 10. Since apparatus arrives with full crews the total personnel on scene will increase by the number of crew on the next arriving apparatus. For example, while 10 personnel on scene in 10 minutes may not be met at an incident, the apparatus arriving at the 11

minute time mark may contain 6 personnel giving a total of 14 on scene within 11 minutes. The statistics in the table show number of firefighters followed by time (eg. 13 personnel in 11 minutes).

	<b>KINGSVILLE</b>	<b>COTTAM</b>	<b>RUTHVEN</b>	<b>SUB/RURAL</b>
<b>2005</b>	-	-	13 in 11	11.4 in 13.2
<b>2006</b>	13 in 12	-	-	12.8 in 12.8
<b>2007</b>	13.7 in 11	11 in 14	15 in 15.5	13 in 14.3
<b>2008</b>	13 in 11.3	11 in 15	13 in 14	11.9 in 12.7
<b>2009</b>	13 in 11	No Calls	14 in 11	12.16 in 13.8

Of note is the fact that personnel may arrive on scene prior to the arrival of apparatus if they are in the immediate area of the call. Record keeping for arrival times of these personnel has not been consistent. As such, the single family dwelling response staffing statistics shown represent the worst case scenario.

- ***Recommendation #3: That the Fire Chief initiate policies and procedures to ensure that the number and arrival time of firefighters who arrive at emergency scenes prior to apparatus are recorded accurately.***

### **Station Response Areas:**

The current response areas of each station were reviewed by the Station Chiefs. Actual drive times and G.I.S. mapping were utilized in order to determine if locations were being covered by the quickest responding station.

- ***Recommendation #4: That the station response areas be altered as per the following description and, further, that the Establishing and Regulating Bylaw for the Kingsville Fire Department be amended to reflect the same and, further, that LaSalle dispatch be informed of the alterations. The line dividing the station response areas for the Kingsville Fire Department shall be as follows with the north fire station covered both sides of each road described:***
  - ***Road 5 between County Road 23 and McCain Sideroad.***
  - ***McCain Sideroad between Road 5 and Road 6.***
  - ***Road 6 between McCain Sideroad and Highway 3 (excluding addresses 1-100 Road 6 West.)***
  - ***Highway 3 from a line extended eastward from the bend in Road 6 West to intersect Highway 3 to Inman Sideroad.***
  - ***Inman Sideroad between Highway 3 and County Road 34.***
  - ***County Road 34 between Inman Sideroad and Olinda Sideroad.***
  - ***Olinda Sideroad between County Road 34 and Road 5 East.***
  - ***Road 5 East between Olinda Sideroad and County Road 31.***

Also analyzed was the intersection of Highway 3 and Division Road. This intersection has seen a number of serious motor vehicle collisions and its layout makes access unique. The north station is approximately 0.5 km closer to this intersection but the south station has a straight response with no stops or turns. Due to the number of serious collisions and unique access problems of this intersection the following recommendation is made.

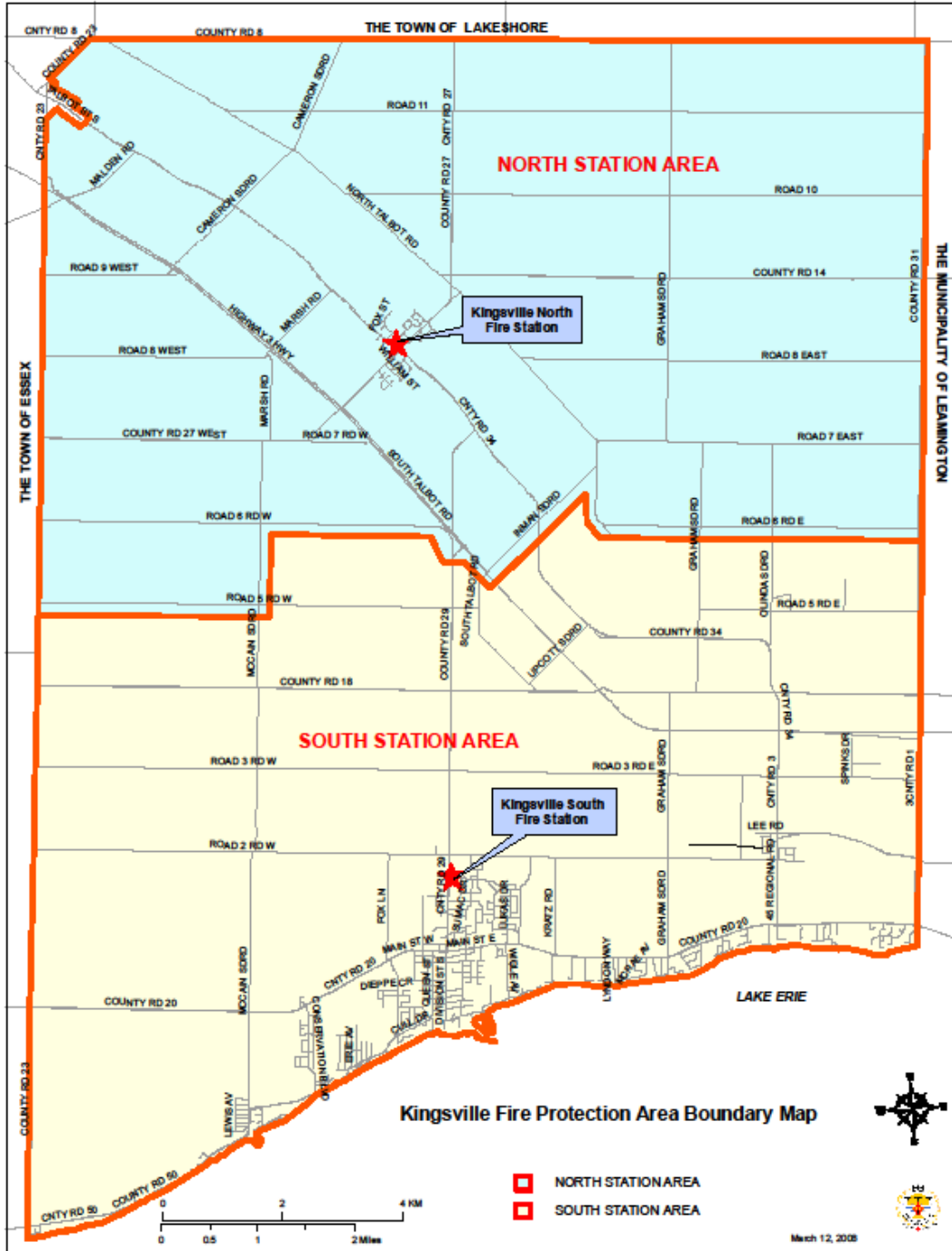
- ***Recommendation #5: That both fire stations respond to vehicle collision calls at the intersection of Highway 3 and Division Road and, further, that LaSalle dispatch be informed of this change.***

Maps of the current and proposed new response areas follow for information purposes.

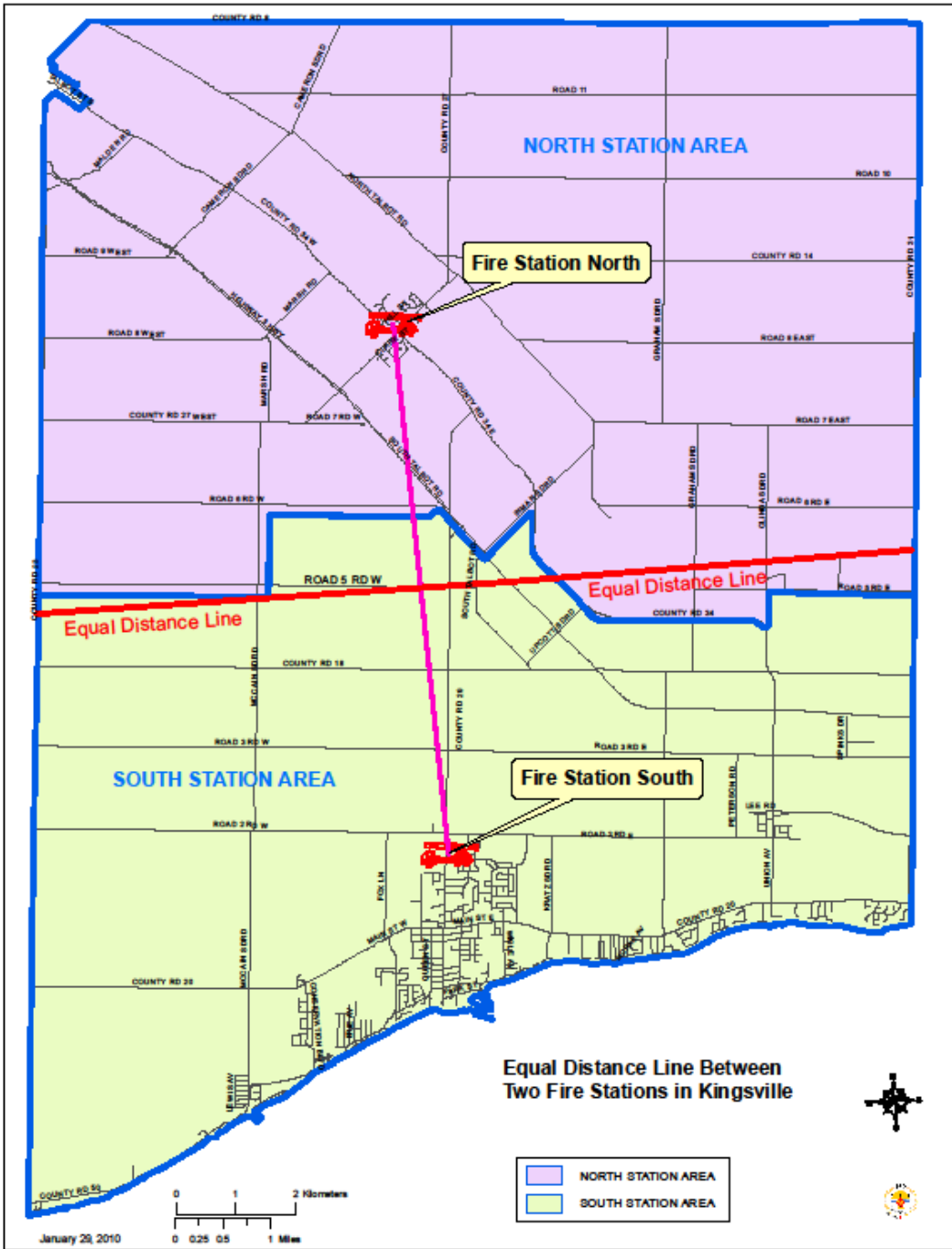
### **Fire Underwriters Survey Coverage:**

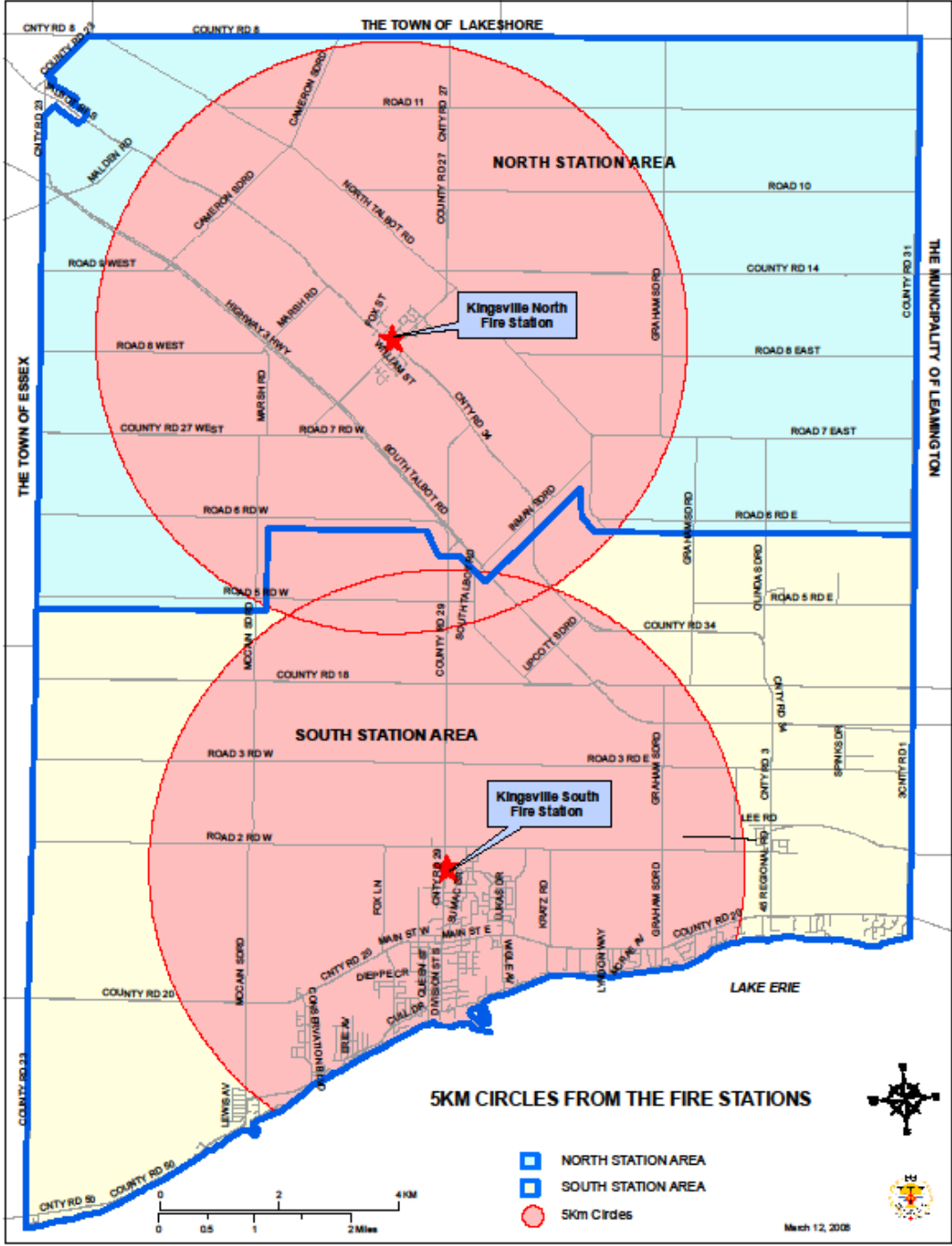
As noted earlier in this report, the F.U.S. insurance grading is directly affected by distance from fire stations. Benchmarks of 5km for commercial/industrial occupancies and 8km for residential have been established. Maps showing the locations of these circles from the present fire stations are included for information purposes. There are over 8000 residential properties in the Town of Kingsville. Of these, there are only 216 that are outside of the 8km radius from a fire station. An analysis of the number of commercial and industrial establishments outside of the 5km radius from a fire station showed that 116 fall into this category. Of these, 97 properties (87%) are located in the southeastern portion of the town.

# CURRENT RESPONSE AREAS



# PROPOSED RESPONSE AREAS





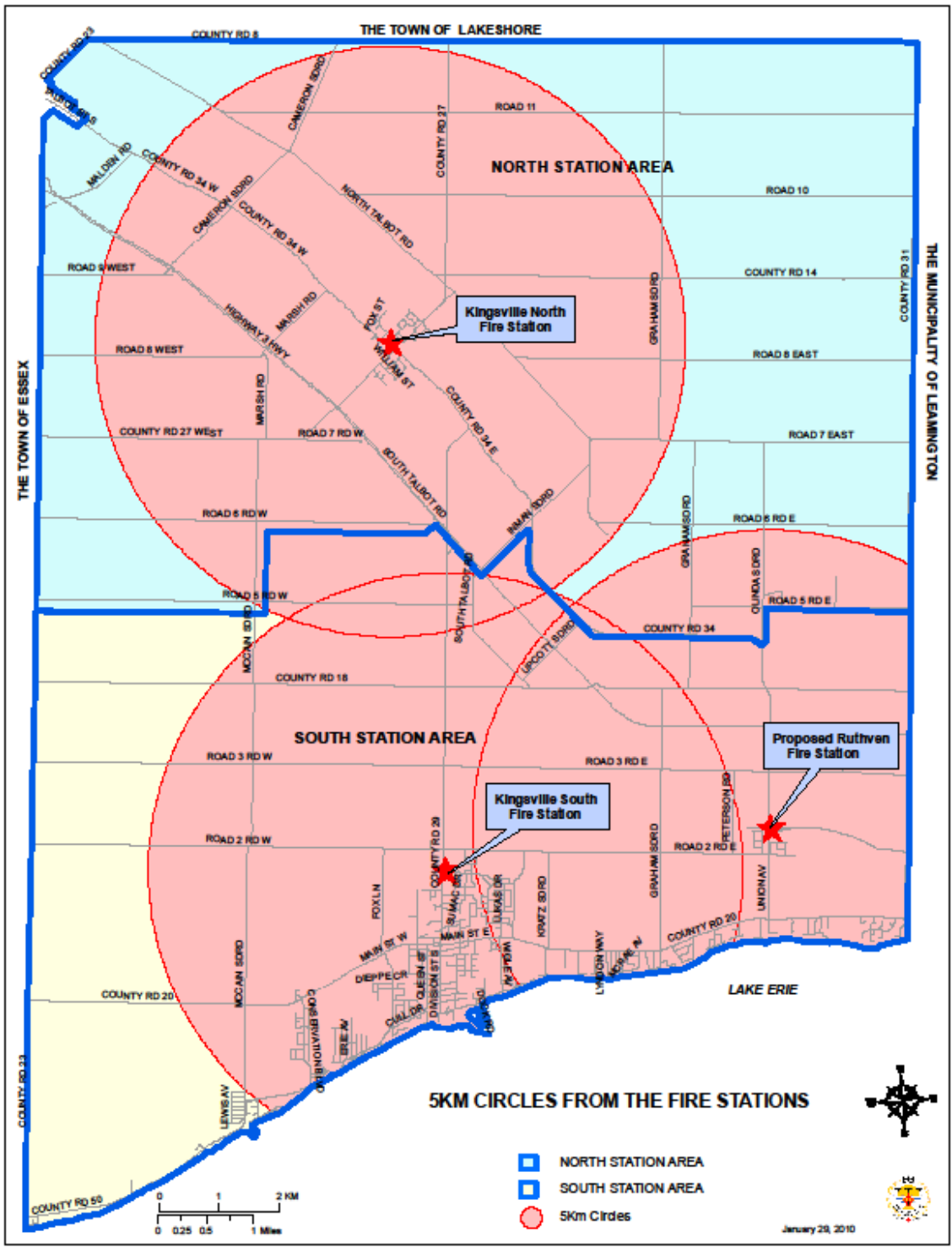


## **Station Coverage in Ruthven:**

The Ruthven area is identified as a location requiring separate consideration. The map of 2005-2009 responses clearly shows that a significant number of responses occurred in the Ruthven area during the period of the study. There were a total of 433 responses inside the 5km radius of Ruthven (an average of 26% of responses each year). Of the 116 commercial/industrial properties identified outside of 5km from a fire station, 97 are within 5km of Ruthven (see map that follows). This area contains an industrial park and a large number of greenhouse establishments. An additional industrial area and some large subdivisions are also proposed for Ruthven vicinity. The addition of a fire station in Ruthven would improve the Fire Underwriters Survey ratings for the 97 industrial and commercial properties within the 5km radius of the village. Several insurance providers were contacted to determine the range of savings that would be realized. Although all stated that there would be savings, it was difficult to obtain an actual amount or percentage. The addition of a station in Ruthven would also enhance the single family dwelling response standards in that area. It would also serve to decrease the response time to the many migrant worker housing occupancies.

The municipality is currently assessing development charges in support of the construction of a fire station in Ruthven and the apparatus and equipment to establish it. These charges will cover 100% of the estimated cost. The only costs not covered are for staffing. Should the decision be made to construct a fire station in Ruthven, there are several decisions which must be considered:

- Station location and land acquisition.
- Hiring of additional volunteer staff who live/work in the area. It may be necessary to do active recruiting in the area.
- Timing for construction.
- Timing for hiring of staff. It may be advantageous to hire and train staff well in advance of the construction of the station.
- Mode of operation for the station. It may be prudent to operate the station as a satellite of the south fire station.
- Relocation of existing apparatus or acquisition of new apparatus.
- ***Recommendation #6: That a fire department substation be constructed in the area of the Village of Ruthven with a construction date based on the projected collection date of development charges for the same and, further that an engine-tanker be purchased for said fire station with a purchase date based on the projected collection date of development charges for the same and, further, that volunteer fire department staff be hired to staff said station a minimum of two years prior to the projected construction date.***



## **Traffic Considerations:**

Traffic routes and flows should be considered as an important part of an analysis of emergency response. There are two components to traffic flow which must be analyzed-the response of firefighters to the stations and the response of apparatus to the scene.

The north station is centrally located in the Village of Cottam on a side street with good access to Belle River Road and Talbot Road. Personnel live scattered throughout the village and can respond to the station from three directions.

The south station is located at the north end of the town centre and exits directly on to Division Road. A number of personnel live in the immediate vicinity of the station. Many personnel, however, live and/or work in the town centre area. It is not uncommon for apparatus to be responding southbound on Division Road while additional personnel responding to the station are travelling northbound.

The signalized intersection at Division Street and Main Street has advanced left turn signals for southbound traffic on Division Street and eastbound traffic on Main Street. These were installed to enhance pedestrian crossings do to the location and quality of the pedestrian signals. New pedestrian signals were recently installed. The advanced left signal for southbound Division Street traffic particularly slows down northbound responding personnel on Division Street. Wait times from red to green lights for the main intersection are as follows:

- Division Street southbound-50 seconds.
- Division Street northbound-64 seconds.
- Main Street eastbound-46 seconds.
- Main Street westbound-60 seconds.
- ***Recommendation #7: That the Fire Chief consult with the Director of Municipal Services to determine if the traffic controller for the intersection of Main and Division Street be programmed such that the advanced left turn green signals be disabled during night hours and/or not activate when no vehicle is sensed in the left turn lanes.***

There is currently only one direct route for the south station to respond to incidents in the town centre and along Main Street and County Road 20. A review of the response location map will show that a significant number of calls occur where this response route will be utilized. The addition of permanent alternate response routes for heavy traffic times will be of great assistance in decreasing response times. A temporary response route utilizing Palmer Drive and Prince Albert Street North was opened during recent construction in the area of Main Street and Prince Albert Street. As well, the extension of Sandybrook Way to Woodycrest Avenue is nearing completion and will add a link to Jasperson Lane for eastbound responses.

- ***Recommendation #8: That the link between Palmer Drive and Prince Albert Street remain permanently open as a means to enhance response of firefighters to the station and apparatus to emergencies in the west part of the municipality.***
- ***Recommendation #9: That the intersection of Sandybrook Way and Woodycrest Avenue be posted as an all way stop in order to enhance the response of apparatus to emergencies in the east side of the municipality.***

As development has occurred in the east part of the town centre additional intersections have become signalized. Apparatus responding eastbound on Main Street will have to currently pass through 4 signalized intersections. The addition of traffic pre-emption devices will assist responding apparatus in that they will cause the signals to switch to green. An emitter (high frequency light) is installed on each apparatus. A receiver at each intersection causes the controller to change the light to green when it detects the emitter. All of the controllers are currently prewired for an Opticom module to be added. The approximate cost for these devices is \$3,000 per apparatus and \$3,000 per intersection.

- ***Recommendation #10: That the addition of traffic pre-emption emitters for all front line south station apparatus and pre-emption receivers for all traffic controllers on Main Street with an estimated total cost of \$18,000 be included in the 2011 capital budget for the consideration of council.***

The Highway Traffic Act permits volunteer firefighters to display green flashing lights on their personal vehicles to assist the public in identifying them. These lights do not provide any exemptions or privileges under the Highway Traffic Act but do assist in requesting the courtesy of the public as firefighters are responding to emergencies. Other municipalities have found success in installing signage to educate the public on the use of green lights.

- ***Recommendation #11: That the Fire Chief consult with the Municipal Services department to determine the viability of installing signage to educate citizens on the use of green lights by volunteer firefighters and, further, to include the cost of said signage in the 2011 capital budget for the consideration of council and, further, that information on the use of green lights by volunteer firefighters be added to the information brochure which is placed in the property tax bills to residents.***

## **Service Delivery Options:**

The department is currently meeting the Office of the Fire Marshal Single Family Dwelling Staffing guideline in the town core. While, it is not being achieved in the other areas, the number of staff assembling and the times taken to assemble them are comparatively good. The department has an active smoke alarm program and public education programs which also assist in mitigating the effects of response in these areas. The implementation of many of the recommendations will also have a direct effect on response times and will have a positive effect on meeting this standard.

Should the need to enhance current service levels be required as this plan is reviewed annually, there are several options which may be considered:

- Maintaining service levels as they currently exist.
- Full time staffing of station(s) during the day during the week.
- Volunteer staff being assigned shifts during the day during the week on a part time basis.
- Volunteer staff being assigned actual "on call" times when they must be within a certain response time of the station and compensating them for the same.
- Changing the response operational guideline to include full alarm response of both stations for confirmed structure fires and/or other full alarm responses based on time of day.

One occupancy of particular concern is Country Village Nursing Home, which is located at the northern boundary of Kingsville. The department currently does automatic two station response to this location. The north station responds with a full alarm and the south station responds with a company call with the aerial. Future plans include upgrading this structure but a review of response procedures may be of benefit in the interim. While the actual response time cannot be decreased, a full alarm response from both stations and Essex Fire Department Station 1 responding on automatic aid would enhance the number of staff attending an emergency at this location.

- ***Recommendation #12: That the response policy to Country Village Nursing Home be revised to include full alarm responses from both Kingsville stations and an engine and crew under automatic aid from Essex Fire Department Station #1.***