

THE CORPORATION OF THE TOWN OF AMHERSTBURG



OFFICE OF THE CAO

MISSION STATEMENT: Committed to delivering cost-effective and efficient services for the residents of the Town of Amherstburg with a view to improve and enhance their quality of life.

Author's Name: Bruce Montone	Report Date: July 16, 2021
Author's Phone: 519 736-6500 ext. 2241	Date to Council: August 9, 2021
Author's E-mail: bmontone@amherstburg.ca	Resolution #: N/A

To: Mayor and Members of Town Council

Subject: Fire Department Deployment – Fire Station Options

1. RECOMMENDATION:

It is recommended that:

1. Administration **BE DIRECTED** to proceed with implementation of the requirements for one of the following options for fire services facilities and deployment, as outlined in the Fire Master Plan and the Fire Department Deployment – Fire Station Options report from the Fire Chief dated July 16, 2021:

Option A – Two Fire Station Model as outlined in the report from the Fire Chief dated July 16, 2021;

OR

Option B – Three Fire Station Model as outlined in the report from the Fire Chief dated July 16, 2021.

2. EXECUTIVE SUMMARY:

Fire Services along with support from Administration have undertaken a review and provided recommendations to update the Fire - Master Plan for the years 2020-2025, with an outlook to 2030. This review was necessitated in part because of the anticipated development that will occur in the Town within the next few years together with the challenges of aging infrastructure. As with any successful master plan there should be an ongoing review of the plan to keep it current and focused on the direction of the Fire Service.

The department has studied and evaluated many redeployments and station relocation scenarios in an effort to determine the most appropriate method to minimize this risk should this be the will of Council. Scenarios reviewed included a one (1) station and a four (4) station model with the additional resources necessary 50 firefighters (FF). The one station model could not provide the current level of service from a single location. A four station model proved to be more than adequate, however an analysis of the costs associated to provide such a model would be unreasonable. As a result a one station and four station model were therefore eliminated from further consideration.

Several scenarios were investigated and mapped out to evaluate a 3 station model in optimal locations based on the geographical make up of the town, giving consideration for risks, location of firefighters and future growth as established in the Town's Official Plan. A three station model was considered the most expensive option and includes construction of two new fire stations, a major upgrade to the third station and the need for twenty (20) additional Volunteer Fire Fighters (VFF).

Station consolidation scenario models are the optimal solution to meet service levels as established by Council. Such an undertaking will provide the best long term option for fire service in the Town; however, this option requires significant capital investment by the Town in order to re-construct two seriously aging stations..

A two (2) station consolidation model, would utilize the current number of VFFs with no related increases to staff or vehicles. This seems to present the least expensive option of those considered, with the lowest operating cost and as fire stations when newly built, are expected to last 40 plus years.

The updated Fire Master Plan includes detailed information on the two options, (3 Stations or Consolidation to 2 Stations). This detailed information is **included as Appendix "B"** to this report for Council's convenience. Either Option A or B under consideration will produce significant improvements to achieving the established service level targets of Council.

In an effort to plan and move forward Council should decide which option is best for the long term organizational considerations as this decision will impact the future completion of outstanding recommendations contained in the Fire Master Plan. Further there is a cascading impact to several other corporate decisions required in strategic documents already approved or under consideration, including: Libro Secondary Plan, Asset Management Plan, accessibility considerations and the pending Facility Needs and Condition Assessment of all Town facilities. Balancing the competing priorities of the Town will be a challenge for Council to consider.

3. BACKGROUND:

There are many factors that are increasing the level of risk facing the community and the Town, but several are especially important over the period of the updated Fire Master Protection Plan period 2020-2025. They include:

- The increasing stock of residential homes being built and rise in population together with types of construction materials and methods used in the building process

The majority of respondents and attendees indicated they understand the type of fire response and services provided by the Town, approximately 20% have actually received fire services. Of the core services delivered, fire fighting, medical response and motor vehicle accident response and rescue were the most important to respondents. Response time was an important factor to survey respondents.

4. DISCUSSION:

Results, Impacts and Options for Consideration

Ultimately consideration should be given to “what is best for the residents we serve”. As the evaluation processes neared completion and the analysis of existing service levels were completed a better understanding of the Town’s existing capability to provide fire services was obtained.

It then became clear that changes should be made in order to improve initial response capabilities; however, the capability to provide even the lowest level of effective response for concurrent emergencies or major incidents involving high or extreme risk properties presents a significant threat.

During the evaluation of response capabilities in various parts of the Town it was found that there were deficiencies in meeting the 15 firefighters in 9 minutes and 10 firefighters in 10 minutes coverage service level targets in specific areas of the Town.

It was also identified that the Bois Blanc Island (Boblo Island) has significant fire protection challenges which will be intensified with additional planned development. A series of recommendations were included in the Fire Master Plan to be considered at a future time and are not included in this report.

After careful evaluation and using the available technology, it has become apparent that in order to maintain the established level of service, changes in deployment are required. Administration has studied many redeployments and station relocation scenarios in an effort to determine the most appropriate method to minimize this risk. Scenarios reviewed included a one station and a four station model with the additional resources necessary (50 VFF). A one station model could not provide the current level of service from a single location. A four station model proved to be more than adequate, but the costs associated would be unreasonable. Both the one station and four station options were therefore eliminated from consideration.

Several scenarios utilizing the Town’s corporate GIS system and a specialized analyst tool were built to evaluate a three station model in optimal locations, giving consideration for risks, location of firefighters’ residences and future growth of the Town. This was considered the most expensive option, including construction of two (2) new fire stations to replace aging infrastructure, a major upgrade to the third station and 20 additional VFFs. This option is further considered below as **Option B**.

amount of redundancy is not built into the system so that timely and adequate response to emergency calls can be maintained, the department's response reliability decreases.

To measure response reliability, all types of calls for service must be taken into account. Today, medical calls have an impact on the availability of Fire Department resources and should be considered in the overall evaluation of department reliability. Response reliability can be determined from historical run data and is typically expressed as a per-company statistic as well as an agency-wide statistic.

Fire Department capability, as a measure of the ability of firefighters to respond, mitigate and recover from each emergency call, often depends on the time of dispatch, arrival of first responders and the assembly of an effective force of attack in relation to the magnitude of the risk event when they arrive. For example, some fires will be at an early stage and others may already have spread throughout an entire building. Therefore, when determining fire station location, apparatus placement and staffing levels, fire service leaders target a particular point of a fire's growth that marks a significant shift in its threat to life and property. This point is known as "flashover".

On Scene Risk Escalation

During the growth stages of a fire, flashover is a significant event. Preventing this stage of fire behavior is a factor in establishing fire department resource needs. When flashover occurs, in that instant, everything in the room breaks into open flame. This eruption of flame generates a tremendous amount of heat, smoke and pressure with enough force to push the fire through doors and windows and beyond the room of origin. Flashover is a significant stage of fire growth for several reasons. First, the likelihood of survival and the chance of saving any occupants trapped in the room of origin drops dramatically. Second, flashover creates an exponential increase in the rate of combustion as well as the risk to the health and safety of firefighters. Third, a considerably greater amount of water is needed to extinguish the burning material. Fourth, a greater number of firefighters are required to handle the fire spread to different locations in the structure and the larger hose streams now necessary to extinguish the fire. Finally, science shows that a post flashover fire burns hotter and grows faster as time progresses thus compounding the search and rescue task in the remainder of the structure again requiring a greater number of firefighters to mitigate the incident.

The dynamics of fire growth and the associated potential for risk escalation dictate various configurations of fire station locations and firefighter staffing patterns. Understanding fire behavior, particularly flashover, is key to designing an emergency response system so that a sufficient number of firefighters and equipment are strategically located throughout the community to assure that the minimum acceptable force of attack can be assembled to engage in a fire before flashover or substantial risk escalation occurs.

Therefore, to save lives and limit property damage, firefighters must arrive at the right time, with adequate resources to do the job. This has been in part addressed by the inclusion of a full-time on duty firefighter. The geography of the municipality (185.61 Sq. Km.) extends intervention time (Time of Call to Water on the fire) and therefore has its limitations.

In emergency medical response, there is a similar perspective. The same need to intervene early to stop the progression or escalation of a risk event can be noted in

○ decommissioning of fire station 3, which could be repurposed by the Town or disposed of;

○ construction of a new fire station at the Amherstburg Libro Centre (Libro) site; and,

○ discontinued operations at the current fire station 1 facility, which could be repurposed by the Town or disposed of if the municipal office were relocated.

○ Redeployment of staff and equipment between the two new stations, with thirty (30) VFFs deployed from each site and relocation of full-time fire fighters to the fire station at the Libro site.

The relocation of existing full time firefighters to the new fire station on the Libro site would complete the improvement of response capabilities utilizing existing resources. The Town's ability to meet at least the lower effective response level for emergencies occurring in high risk and extreme risk occupancies, as identified earlier in this report and improving the level of guaranteed response to the whole municipality may result.

Option B – Three Fire Station Model:

This option includes:

- Demolition and reconstruction of two fire stations (2 and 3) at their current locations;
- Capital upgrades to fire station #1 including the replacement of the roof and the 6 bay (overhead) doors (front and rear) of the station;
- Implementation of any capital improvements recommended in the pending Facility Needs & Condition Assessment;
- Increase staff complement by 20 volunteer fire fighters, including ten (10) per station at stations #1 and #2 to meet response targets. Increase staff complement by ## full-time fire fighters.

Additional FTE's and fulltime firefighters to be located at upgraded Station# 1 improving response capabilities to meet at least the lower effective response level for emergencies occurring in high risk and extreme risk occupancies, as identified in this report and improving the level of guaranteed response to the whole municipality.

Summary of costs of each option is highlighted in the Financial Matters section of this report.

Boblo Island Fire Service Challenges

In February of 2017 the Municipal Clerk provided a report to Council, outlining Boblo Island (Boblo) access challenges for a variety of emergencies. The report included information and both short and long term solutions to the fire protection needs of Boblo. The solutions were included in the Fire Master Plan for Council's future considerations. . The short-term solution has been implemented to ensure that fire protection service demands are being met on Boblo; however, consideration of a long-term solution is

Other existing operational challenges and considerations by location exist including significant capital improvements needed at the current fire stations. The pending facilities conditions assessment report will be brought to Council in the near future will further highlight the condition and needs of the stations once completed. Administration has deferred budget requests for capital project funding pending direction from Council on implementation of the Fire Master Plan (fire station and deployment model); however, further delay in direction may necessitate investment in improvements and repairs at the current fire stations, the value of which many not be fully realized if a decision to replace the fire stations is then made at a later date.

6. FINANCIAL MATTERS:

The Fire Chief has estimated capital project cost (\$2019\$) for the options under consideration as below; however, a project plan including design and construction estimates would be provided to Council in further reports and incorporated into the Town's recommended budget at the appropriate time in the context of municipal capital priorities.

Option	Estimated Cost (\$2019\$)
A – Two Fire Station Model	including net HST
Capital Expense (1)	\$8,000,000
Operating	Unknown (2)
B – Three Fire Station Model	
(5)	
Capital Expense (1)	\$8,860,000 (4)
Operating	150,000 (3)

Notes:

- (1) Capital Expense: An updated capital cost estimate for the option selected by Council would be obtained closer to the time of planned construction, subject to future Council approval of design standards to be applied and inclusive of all considerations for demolition, construction, site specific impacts, etc.
- (2) Operating cost impact (annual) under Option A may include cost reductions for the Town, depending on the planned use of the current fire station one facility, possible financing and debt service costs, service level required by legislation and adopted by Council, and other impacts of implementing the model in a future year.
- (3) Operating cost impact (annual) under Option B is estimated to increase operating costs for the Town in relation to additional staffing requirements. Overall operating cost impacts would be considered in future budget recommendations for implementation of the model in a future year.
- (4) The Federal government has renamed the Gas Tax and changed criteria to Canada Community Building Fund which makes Fire Halls eligible for funding.
- (5) Selecting a Three Station model will negate any potential revenue realized of a possible sale of Station 1

8. CONCLUSION:

As identified in the Fire Master Plan, strategic planning decisions are the responsibility of Council. Consideration should include the disciplines, level of service, staffing, number of fire stations and business planning recommendations based on the risk assessment of providing fire services for the community as recommended by the Fire Chief.

Ultimately consideration should be given to **“what is best for the residents we serve”**.

A better understanding of the fire service's existing capability to provide operational services has been identified. It is clear that changes should be made in order to improve response capabilities. During the evaluation of response capabilities in various parts of the Town it was found that there were deficiencies in the 15 firefighters in 9 minutes and 10 firefighters in 10 minutes coverage targets in specific areas of the Town.

Council should direct Administration to implement one of the two options (Option A or Option B) outlined in this report to reduce the deficiencies in meeting the Town's fire service levels established by Council. Balancing the competing priorities is a challenge for Council to consider but a decision on the two options presented in this report is paramount, for other programs to move forward.



Bruce Montone
Fire Chief

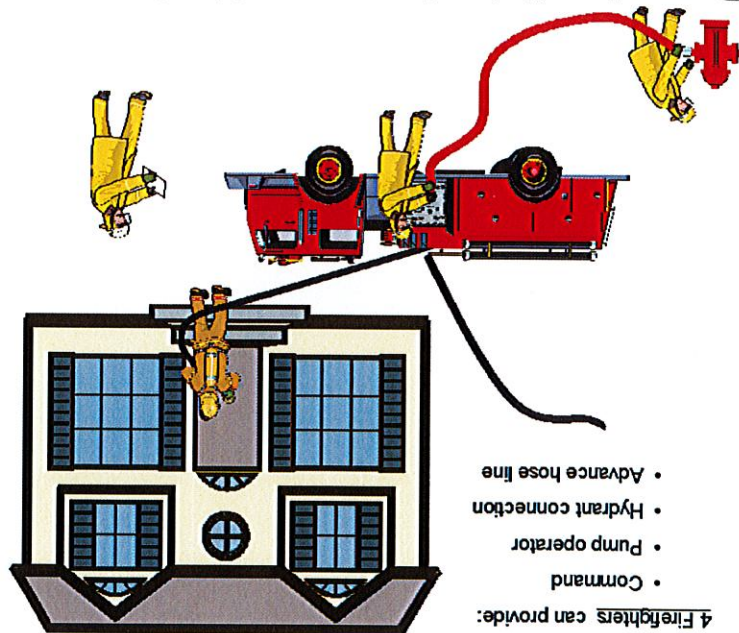
Appendix B Excerpts from 2020-2025 Fire Master Plan Support for Station Options Report

FIRE SUPPRESSION/OPERATIONS DIVISION

The basic organization and orientation of all fire departments is primarily directed towards fire suppression. While the fire service may place an emphasis on fire prevention, public education, risk reduction and hazard abatement, its ability to respond and control fires is an operational priority. The ability to respond to the life safety and property protection needs of the local community is the common denominator in fire department operations. The success of a firefighting operation depends on the ability of a fire department to effectively and efficiently use the available resources to protect life and property.

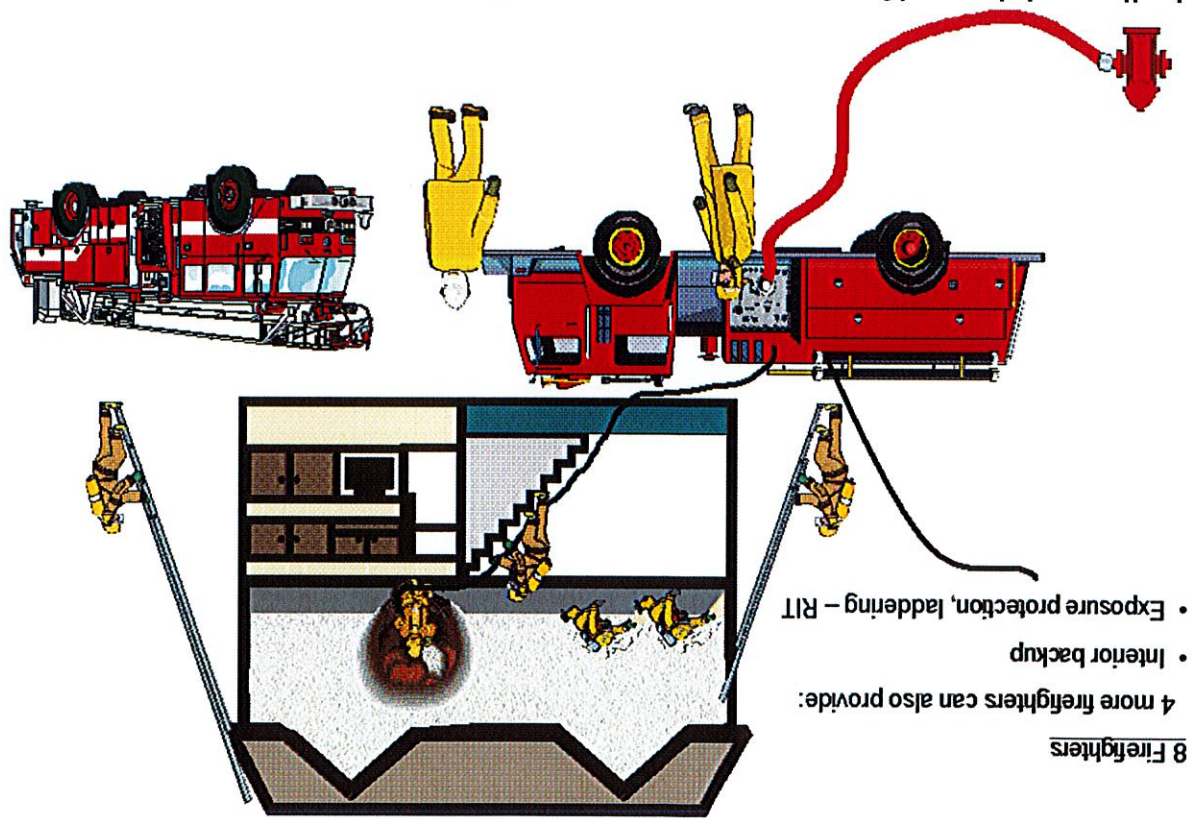
Staffing levels:

Today it is recognized that an understaffed fire department operates under a handicap at each emergency and the officer in charge must decide on which duties are to be postponed or left undone. Unfortunately the consequences can be life threatening. Research conducted by various fire safety agencies i.e. National Fire Protection Association (NFPA), Federal Emergency Management Agency, Insurers' Advisory Organization (I.A.O.), International Town Management Association, NIST National Institute of Standards and Technology; related publications, educational institutions; and major individual fire department studies, indicate that optimum performance for the average family dwelling fire is achieved through the use of crews comprised of four fire fighters including a direct supervisor (company officer).
Able to commence *limited* rescue or fire fighting with 4 firefighters



Responding with less than a crew of 4 reduces efficiency and would also have an adverse effect on the safety of the fire fighters. Minimum levels of fire protection leave much to be desired by the property owner who suffers the loss and the fire department whose morale is often affected by its inability to successfully control and extinguish the average fire.

Able to commence interior rescue or fire fighting with 8 firefighters

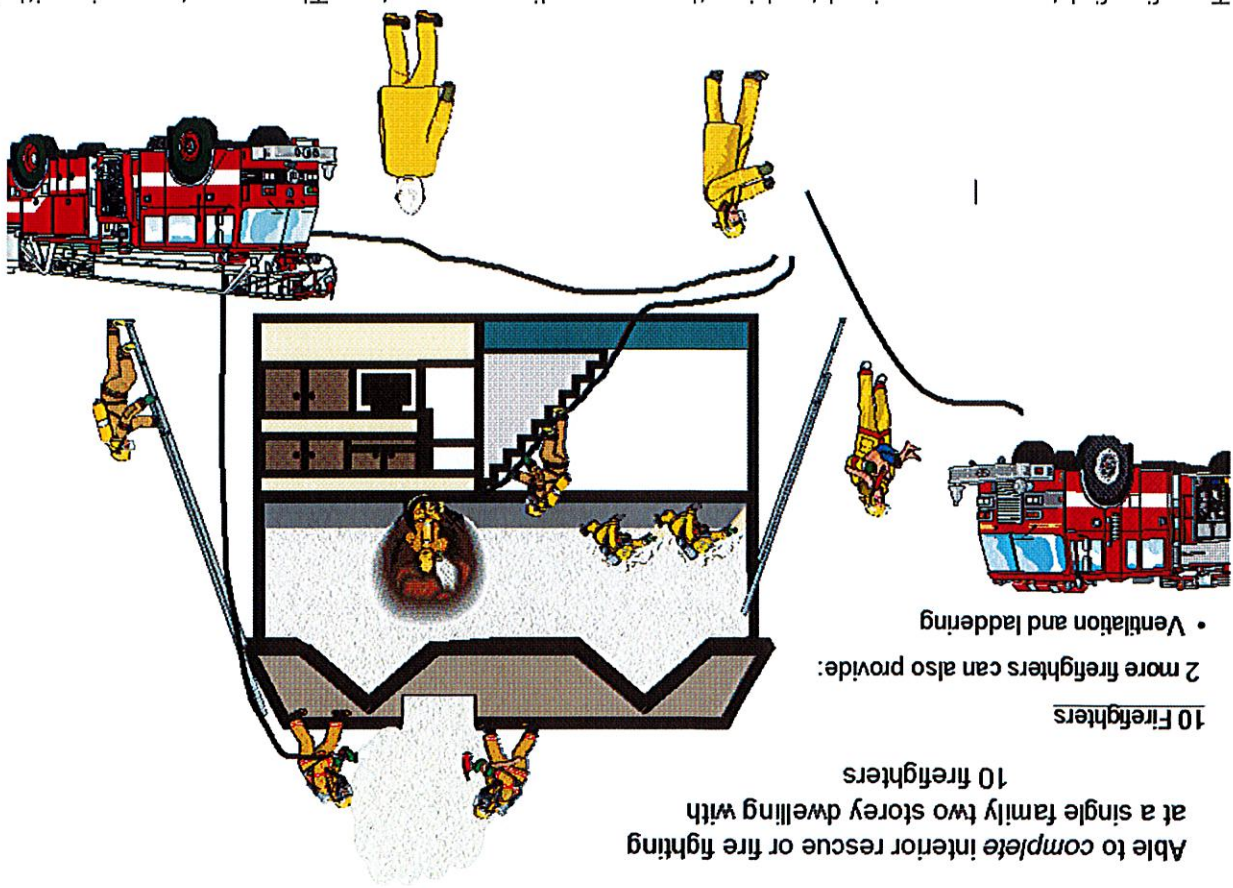


Ideally, a minimum 10 person response team should respond to a typical day-to-day fire. The number of fire fighters required may increase as the fire escalates. A single family dwelling fire requires a minimum 2 vehicle response, whether it is 2 pumpers for urban response or a pumper and a tanker for rural response.

Able to complete interior rescue or fire fighting at a single family two storey dwelling with 10 firefighters

10 Firefighters

2 more firefighters can also provide:
• Ventilation and laddering



Two fire fighters are required to drive the responding apparatus. They must remain with their vehicles in order to supply water, operate the pumps, distribute equipment, provide assistance to the fire fighters with self-contained breathing apparatus and operate the radio equipment. Four other fire fighters are required to advance hose lines and attack the fire. Four other fire fighters are required for laddering, forcible entry, ventilation, rescue, connecting hose lines to fire hydrants or other water supply operations as well as advancing and attacking the fire with a third hose line. Two of the above mentioned fire fighters should be direct supervisors (company officers) and one as the Incident Commander. Apparatus such as aerial devices, squads, rescue vehicles and water tank trucks must be sufficiently staffed to perform the tasks for which they respond. The number of fire fighters responding with apparatus should be appropriate for the realized fire demand in order to form an "on scene" fire attack team. Responses to occurrences for medical assistance, vehicle extrication, grass fires and/or other emergencies may require a lesser complement of fire fighters. Fires in larger attached structures such as industrial, commercial or institutional occupancies, high rise, etc. will require additional personnel.

Assembling the "on scene" fire attack teams

Traditional methods of assembling "on scene" fire attack teams include the following:

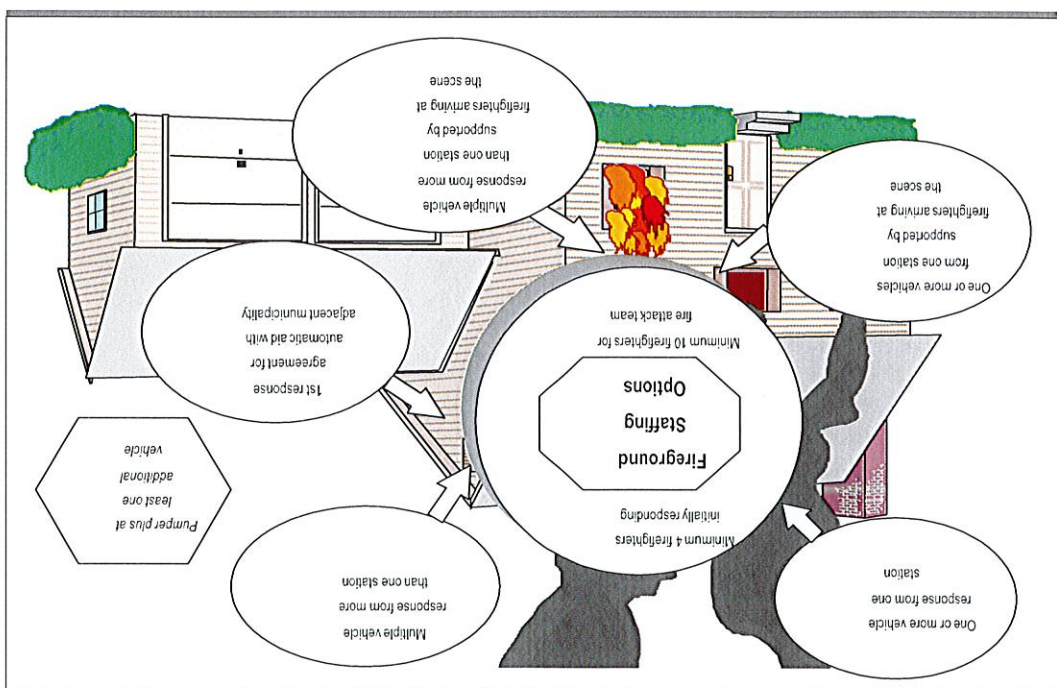
- a) Full-time fire fighters responding with apparatus,
- b) Full-time fire fighters responding with apparatus supplemented by off duty full-time fire fighters who have been called back,

1-I.A.O. response time means response travel time, i.e. after dispatch and turn out

- b) responding additional apparatus,
time fire fighters,
a) increasing the number of fire department personnel, including volunteer fire fighters and full
In the event of excessive "response time" consideration should be given to:
rural fires.
small buildings widely detached). NFPA recommends a maximum "response time" of 10 minutes to
I.A.O.¹ recommends from 2 minutes (severe hazards in large area buildings) to 7.5 minutes (very
"response time" to be accepted by the municipality.
accepted by recognized organizations which can be used as guidelines when determining the
absolute time frame that all departments should comply with. There are, however, response times
The question of adequate average response time is subject to too many variables to dictate an

Response time

PFSG 04-08-12



Any one or any combination of the above is normally considered satisfactory provided that the "on scene" fire attack team is operational within a "response time" accepted by the municipality. The Ontario Office of the Fire Marshal has produced Public Fire Safety Guidelines, to provide information and a process for Municipal & Fire Officials to determine appropriate services and levels in accordance with local needs and circumstances.

- f) Multiple vehicle and/or station response.
while other volunteer fire fighters respond directly to the scene, and
e) Some volunteer fire fighters responding to the station and then on the apparatus to the scene
d) All volunteer fire fighters responding to the station and then on the apparatus to the scene,
c) Full-time fire fighters responding with apparatus supplemented by volunteer fire fighters,

- c) providing additional fire stations,
- d) improving the fire department emergency communications system.

Vehicle staffing is not standardized and is dependent on time of day and time of year throughout all response districts. It should be noted that our single Full-time staff since 2017 now respond to all calls in all response areas of the town, therefore providing a guaranteed response to incidents.

Since amalgamation in 1998, development within the town and fire risk has increased substantially: 2,484 new homes have been built most with light weight construction features,

- 1 new elder care facility
- several multi-residential buildings
- big box stores
- Libro Centre

Anticipated in the next five (5) years is the development of

- 2 Hotels & 1 Condominium
- Watfront re-development
- Additional residential development on Boblo Island
- Several hundred new residential properties including multi-residential
- New High School

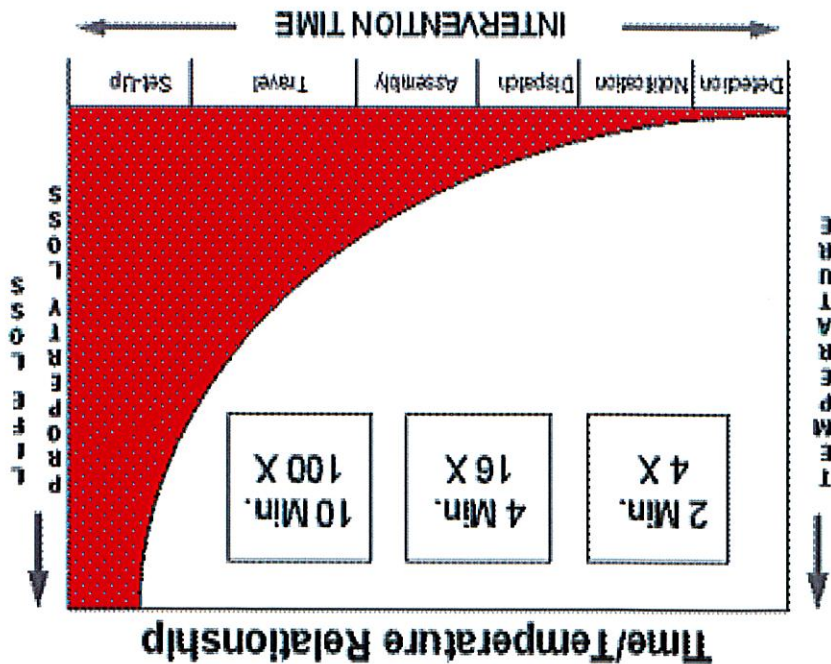
Staffing Considerations should be made following a review of the "Results Impacts and Options" contained in the fire-master plan and based on an analysis of our Force of Attack situation.

Of the past three years of Priority-One calls, the average total number of firefighters that could be expected in totality of an alarm in each response district is¹².

N.F.P.A. 1720 which is the Town of Amherstburg service level established in the Establishing and regulating by-law 2017-67 document indicates that: ***After assembling necessary resources at an emergency scene, the Fire department should have the capability to safely initiate the initial attack with Four (4) Firefighters within 2 minutes, 90 percent of the time.*** This has proved challenging at best, most of the time.

Risk vs. Response Standards

To effectively mitigate fires and emergencies, response time with appropriate staffing is critical. An exponential increase in loss of life and property is associated with increased response time as illustrated in the following:



Time/Temperature Relationship Graph
 Ontario Fire Marshal PSFG 01-02-01
 "Comprehensive Fire Safety
 Effectiveness Model"

AFD strives to meet NFPA 1720, (NPFA 1720 standard is the standard which Volunteer and small composite fire departments generally use as a guideline to the delivery system.)

Recent studies and articles from organizations such as the National Institute of Standards and Technology (NIST) and the National Fire Protection Association (NFPA) have identified the need to provide additional guidance to determine an effective fire ground response for buildings that are more complex and of a higher risk. This guide, in conjunction with an overall risk management program, will provide information for councils to make informed decisions in meeting their legislative responsibilities regarding the delivery of fire protection services.

Demand Zone	Demographics	Staffing & Response Time	Meets Objectives Percentage
Urban area	>1000 population /mi ²	15 FF/9 min.	90%
Suburban area	500-1000 people/mi ²	10FF/10 min.	80%
Rural area	<500 people/mi ²	6FF/14 min.	80%
Special Risks	AHJ	AHJ	90%

The National Fire Protection Association standard 1720 Table 4.3.2. indicates:

Currently AFD has a minimum on-duty staffing level of 1 Career Fire fighter, and each station is additionally staffed with 20 Volunteer (Paid on Call) firefighters (total 60).

When a station is called out (paged) an average of 12 Fire Fighters (including a District Chief) respond to support the lone on-duty firefighter.

- ❖ A review of the past calls indicates that in the Urban Demand Zone although response time is frequently within the 9 min. target, the staffing requirement of having 15 firefighters on scene is almost never achieved.

- ❖ The only time is when the incident occurs when Training is taking place on a Thursday evening between 1830 & 2030 hours.

- ❖ Consideration of remedies did involve considering changing the response assignment to two stations, however neither second station is within the proximity to achieve a 9 min response time. Second Stations are dispatched regularly on working fires but often manpower arrives later in the call.

- ❖ Our ability to achieve both the Suburban and Rural Demand Zone targets are frequently met with some challenges during daytime hours 0800-1700 and some long weekends throughout the year.

Incidents involving occupancies larger than a single family residential structure such as a high-rise, commercial, industrial or institutional require a larger proportionate number of firefighters to mitigate the situation. This requires more firefighters and equipment which must travel further distances (from other stations) and increase response times to complete; evacuation, rescue, fire suppression and ventilation of a large structure. Historic events have required the commitment of on-duty staffing and the requirement to call out (Page) off-duty career staff and 2nd or 3rd station complements/and periodically mutual aid to assist with the emergency and/or provide coverage to the other areas of the Town. It should be recognized that incidents that involve rescue and suppression or mitigation tasks should be considered as two simultaneous incidents requiring adequate and additional staff for both incidents.

NFPA 1720 provides for full interior attack and rescue with aerial operations as required.

To determine the resources required to effectively handle an emergency at higher risk occupancies the OFM previously developed the **Critical Fire Ground Task Matrix**. The matrix table assigns a lower effective response level (LERL) and an upper effective response level to (UERL) to occupancies of varying risk. Use of the critical fire ground task matrix only identifies the resources required for response to a **single** incident.

- ❖ It is essential that during any emergency, there be available, a tactical reserve of personnel and emergency vehicles to respond to a simultaneous emergency elsewhere within the municipality.

Adequate resources must be delivered in a timely manner to reduce the impact and severity of fires and other emergencies.

- ❖ The current staffing level barely meets the lower effective response level for Low and moderate risk occupancies. The staffing levels result in AFD being unable to assemble adequate resources for an emergency occurring in high risk and extreme risk occupancies.

Any reductions contemplated would seriously impact the ability of AFD to assemble moderate and low risk required resources in an effective timely manner and will also impact reserve requirements for simultaneous calls for service, negatively affecting firefighter and public safety.

The NFPA Table of Effective Response indicates that first response times should be:

- 2 - 3.5 minutes is required for Institutional, Hospitals, and Nursing Homes
- 4 minute response times for Industrial Commercial
- 5 - 6 min initial response time for residential occupancies

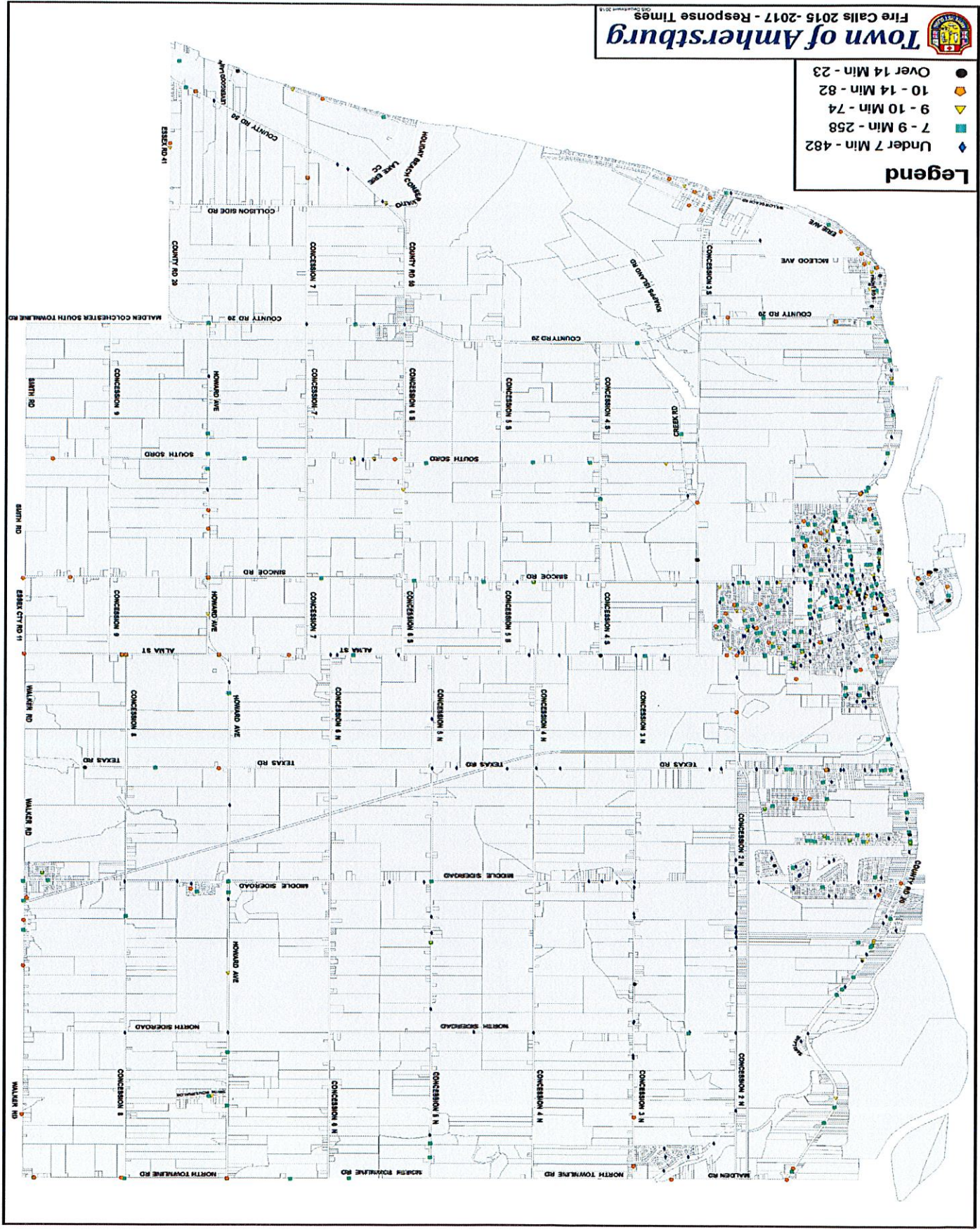
The 2007 Fire Master Plan identified requirements of response in both the NFPA 1710 standard and the NFPA 1720 standard and encouraged the department to have a 8 minute road response to structure fires and alarms sounding, 90% of the time. In 2015 The Establishing and Regulating by-law was amended to a desired road response time that includes consideration of population density, critical tasks required, and continued the percentile (%) fractals. These were maintained in the more recent update to the Establishing and Regulating By-law in 2017. That being 15 FF in 9 min. 90% of the time for Urban Density, 10 FF in 10 minutes 80% of the time for Suburban density and 6 FF in 14 Minutes 80% of the time for Rural density.

CURRENT STANDARDS OF RESPONSE

A manual call by call review process was required to gather response data because of the inability of the current Computer Aided Dispatch (CAD) system to capture the response times as required. Staff used the following criteria to ensure adequate and sufficient data required to complete the response calculations;

- AFD/OFM structural fire types (OFM Code 1) were used to identify which calls historically were responded to as a "level 1" response (the highest emergency priority) and a full three years of data was utilized.
- Data was filtered to exclude responses under 20 seconds and over 20 minutes. This ensures that no anomalies were included.

The map below shows the location of responses and illustrates by colour and shape the total first response time range achieved.



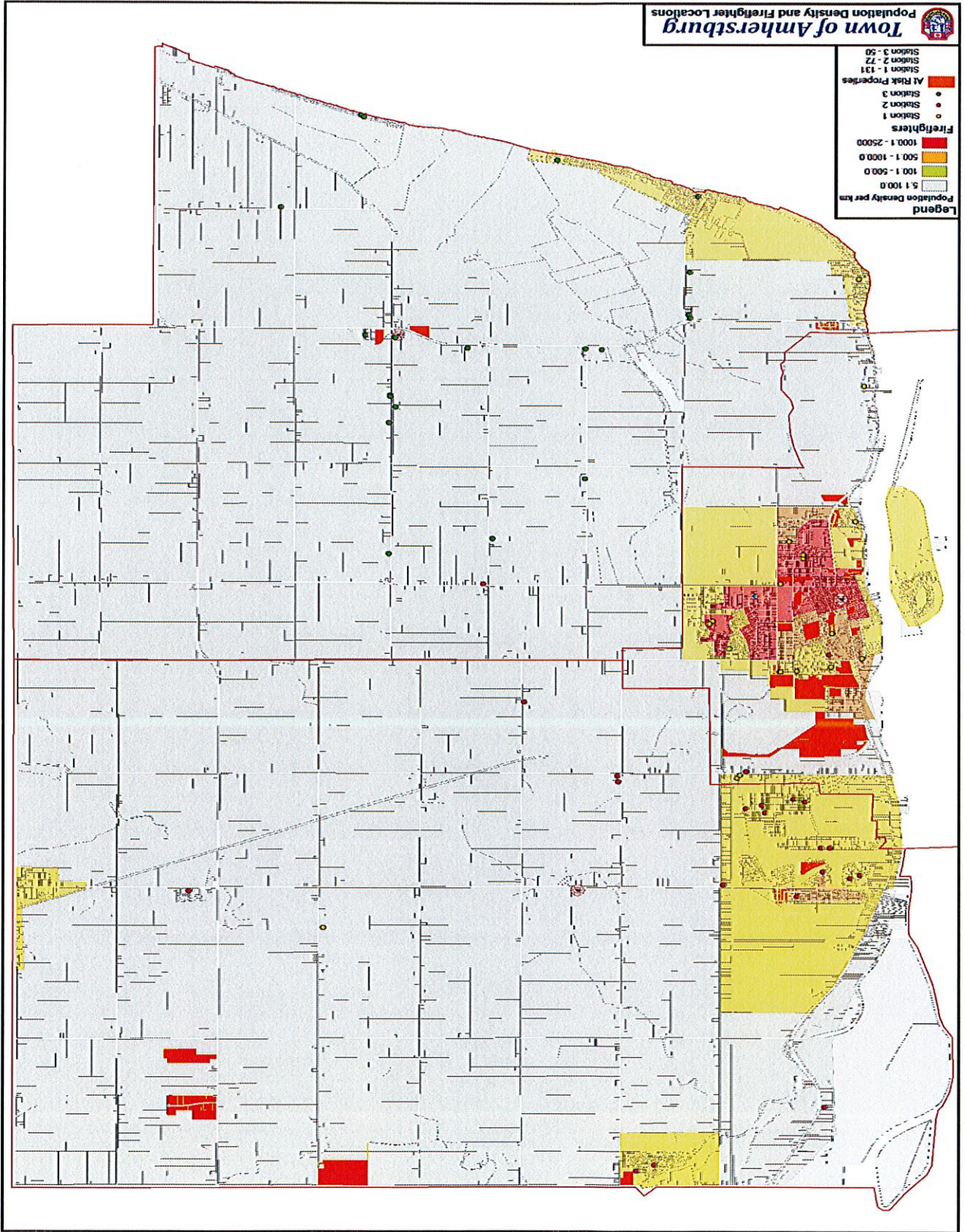
Fire Risk Map

The results of the Fire Risk Assessment show areas of the Town of Amherstburg defined by high, medium and low risk & Population Density per Sq/km. These rating have been determined by combining the five components of; risk, historic, economic, property and life. This map depicts the total "At Risk Properties" in the Town of Amherstburg.

Additional Considerations in the determination of Options is the location of where responding fire fighters live in relation to their assigned stations. This will have an impact on Turnout Time which contributes to total response time. This map also illustrates the Location of Current Fire Fighter Homes.

The fire station serves as the heart of the fire service. As goes the station, the equipment and facilities contained therein, so goes the pulse, the morale and the performance of the persons making use of the facilities.

Fire Station Data



In a small village or town the location may not be as critical for response times and distances. However, in geographically larger municipalities response distances of under 8 km and response (Travel) times of less than 5 minutes are desirable.

Currently The Town of Amherstburg is served by three (3) Fire Stations. Each constructed by the former Municipalities prior to Amalgamation 20 years ago in 1998. These stations were built and located to meet the needs of much smaller municipalities.

Station #3 in former Malden Twp. was built in the Early 1960's and Station #2 in former Anderton Twp. were built in the early 1960's as well, with an additional vehicle bay added in 1974. Both buildings are more than 60 years old, and do not meet the needs of a modern fire service preparing for 2030 and beyond. In fact, the current vehicle bays will not accommodate modern Truck Chassis sizes and as a result significant building renovations are required before any additional vehicles are replaced as new vehicles will not fit into the bays.

Station #1 in Former Amherstburg village was built as part of the Municipal Complex (Town Hall) in 1993. It is 27 years old and has begun to significantly show its age. Additionally the Fire station training area, Kitchen and other administrative areas have in recent years been converted to share space with town hall operations limiting the fire departments use.

There are significant Accessibility issues at all locations.

Fire stations are constructed to house fire fighting apparatus and accommodate the fire fighters staffing the apparatus. They should be located in reasonably convenient areas to give quick response to emergencies, having regard to the distances to be travelled, response times and whether it is an industrial, commercial or residential area to be protected. When volunteers are used for staffing, their availability and their access to the station should be considered as they are relied upon to bring apparatus and equipment to the emergency scene.

Provision should be made in fire stations to accommodate all firefighting apparatus assigned as well as to allow flexibility of operations, allowing apparatus to be assigned from one station to another as the development of areas proceeds or deployment changes are necessary. Also, space should be provided for living and training accommodations for the career fire fighters manning the station and/or for Volunteer Fire Fighter use in flexible ways to accommodate limited availability of staff to perform required duties and activities.

In the case of a headquarters fire station, in addition to the apparatus, living and training accommodation, space should be provided for the administrative, training, and fire prevention staff of the department.

Response distances up to 8 km may provide insurance savings to residents within the area protected from a fire station.

The location and physical design of fire stations, and their successful ongoing management, are prime determinants of a community's ability to respond to fires. Having the right type and number of fire stations, located in the right places enables the policy makers and appointed managers of a jurisdiction to house fire fighters, apparatus, and equipment in a rational way for maximum use of resources. Doing this successfully may be a key test of managerial ability (both inside and outside the fire department) in a local government setting increasingly more marked by competition for scarce

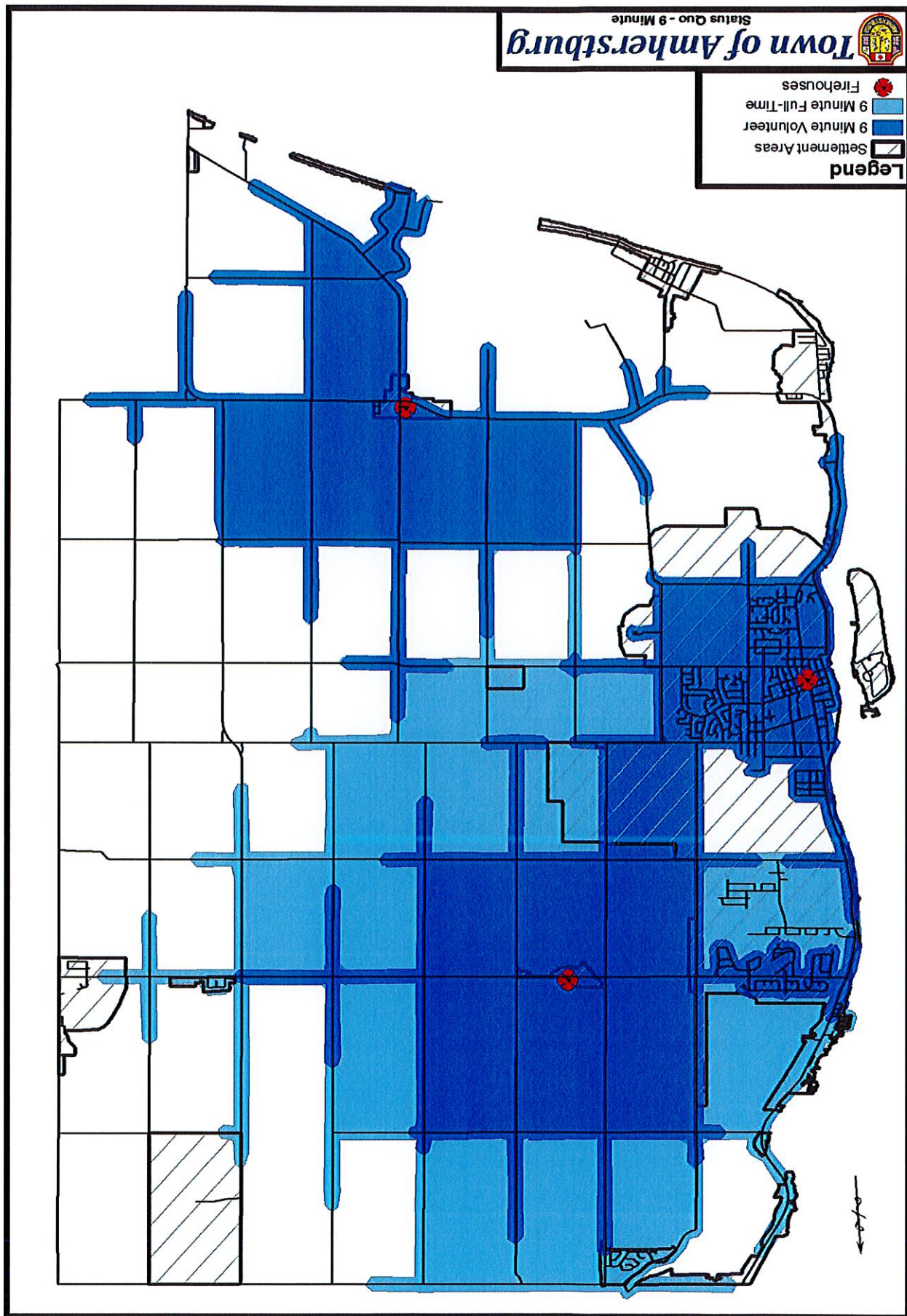
resources. Fire stations are a major capital expenditure and municipal improvement. The buildings are in use for many years. The size of the station should be compatible, not only with the present requirements, but for the future maximum anticipated number of personnel, apparatus and equipment.

For each of the three (3) fire stations, detailed data on the first response vehicles or fire apparatus in the station and a description of the number of responding staff for the stations are provided.

Station #	Location (Address)	Major Apparatus Assigned	Staffing	Special Services
1	271 Sandwich St. S	2009-75' Ladder 2018-Rescue pumper 2018 Support Unit	4 Non-Union Staff 20 Volunteer FF	Water Rescue Auto Extrication
2	3400 Middle Side Road	2018 Tanker pumper 2012 Pumper 2018 Support Unit	4 Career Firefighters 20 Volunteer FF	Water Rescue Auto Extrication Water Shuttle
3	6744 Concession 6 south	2000-Tanker truck 2011- Pumper 2018 Support Unit	20 Volunteer FF	Auto extrication Water Shuttle Off-Road Services

Levels of Response Time

These Maps illustrate the current levels of response time for all of the fire stations within the Town of Amherstburg. The process developed and utilized data provided by the Crisys database and internal GIS data. Also included are the "Areas of Concern" where response time can be met but the number of firefighters that can assemble in the respective Demand Zones cannot be achieved.

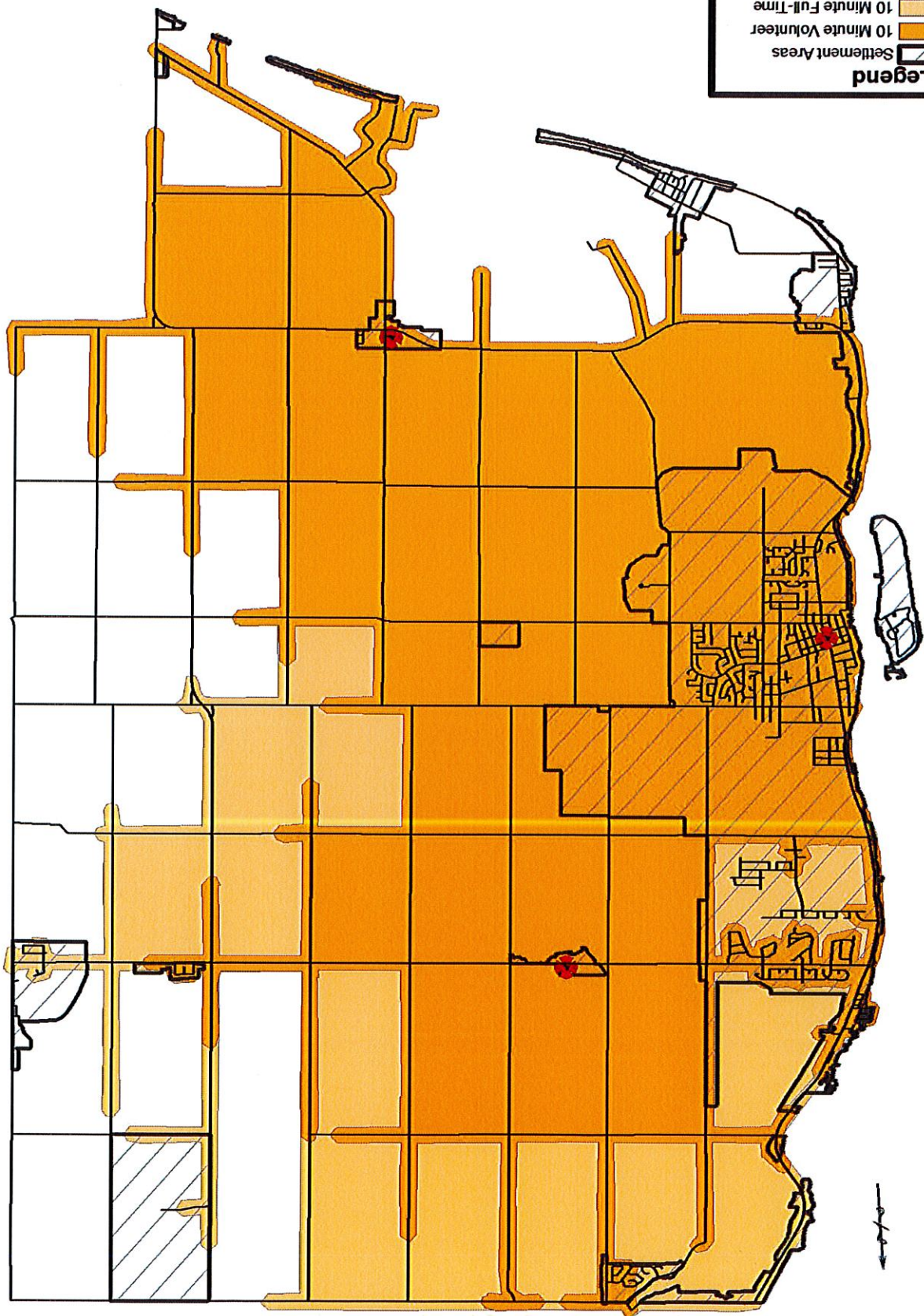


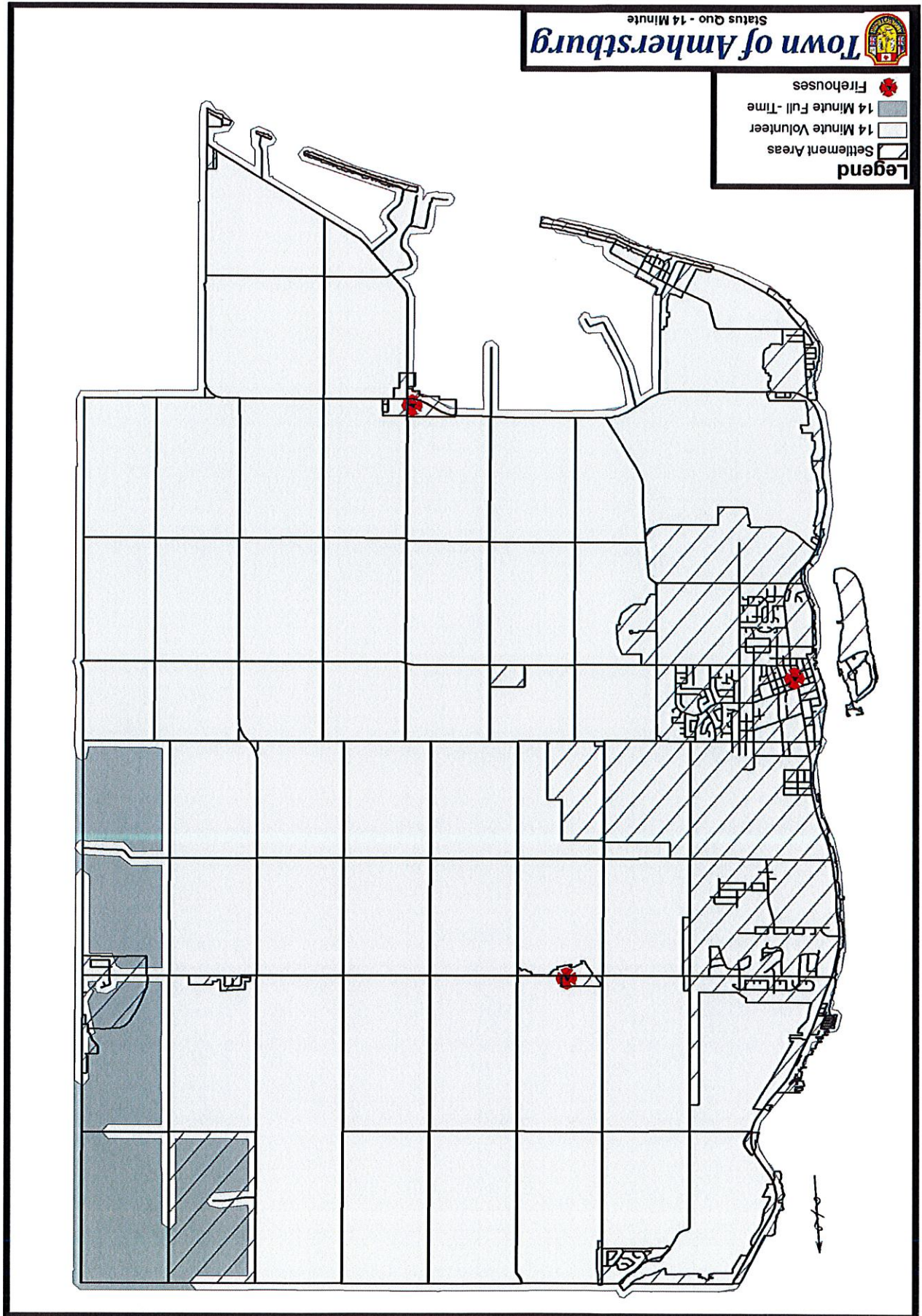
Town of Amherstburg

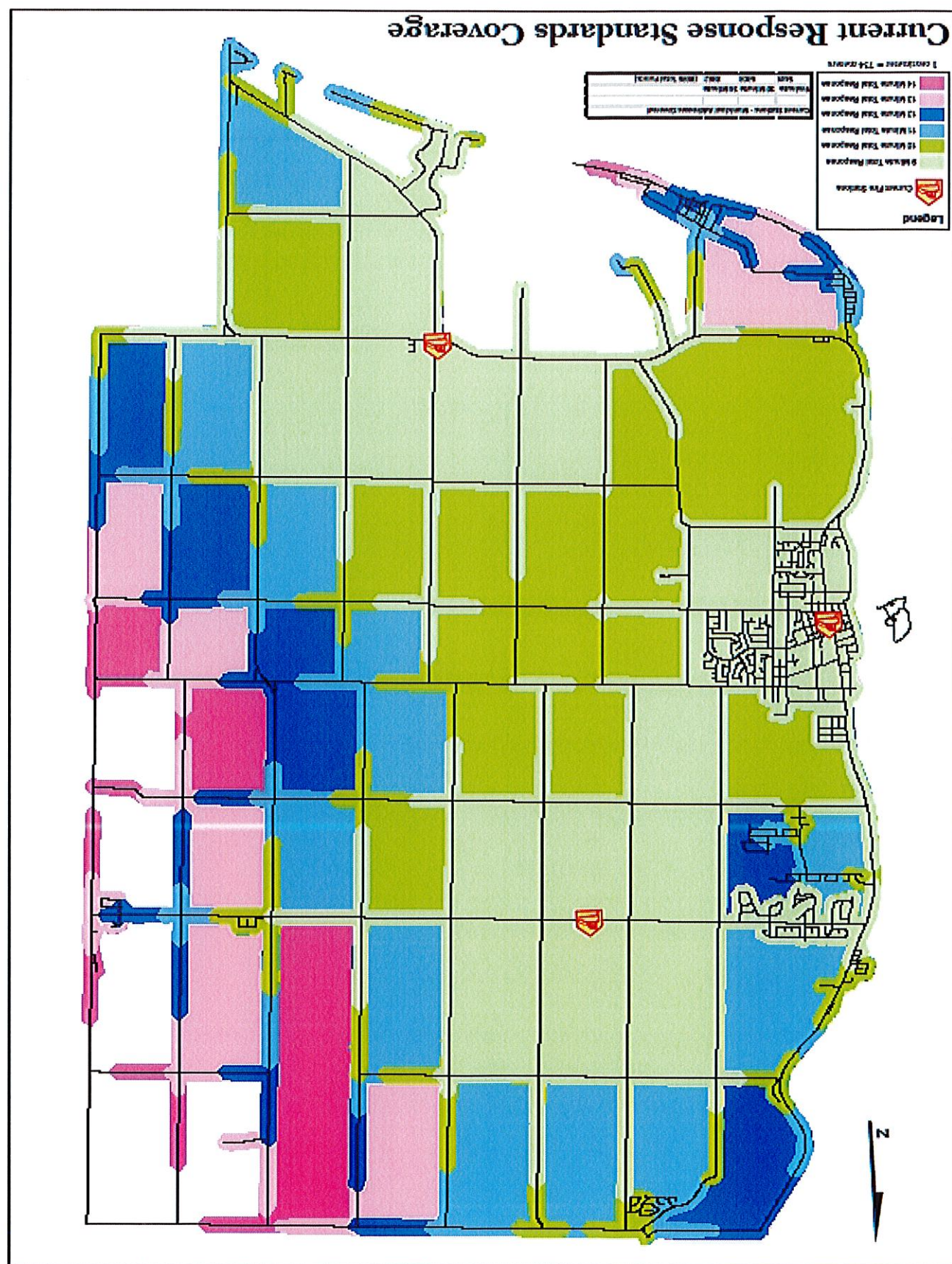
Status Quo - 10 Minute



- Legend**
- Settlement Areas
 - 10 Minute Volunteer
 - 10 Minute Full-Time
 - Firehouses







The Current Level of Response are illustrated by shaded road networks, indicating those streets and areas that are currently achieving the NFA guideline of 9 minutes, 10 minutes and 14 minutes for single family residential occupancies.

Station and Deployment Triggers

The following station and deployment triggers (the action that results in a change in resources being deployed to the area) used in identifying the deployment of fire service resources in the Town of Amherstburg are:

- Growth
- Construction
- Response Level
- Risk
- Land Use

The Fire Management Team expects that several triggers would act together to cause an action to be required.

Calculation:

Using available Town of Amherstburg data and resources can demonstrate how the change to land use significantly affects risk, response level or Capacity. Based on the identified risk value, the appropriate resources should be deployed in the area to meet the approved level of service.² The basis for these triggers can be referenced in the following documents:

- Commission on Fire Accreditation International, Inc. 4th Edition, Creating and Evaluating Standards of Response Coverage for Fire Department
- Network for Environmental Risk Assessment and Management Basis Frameworks for Risk Management
- OFM Public Fire Safety Guidelines
- Comprehensive Fire Safety Effectiveness Model Considerations

At Present the 3 station deployment model and three benchmark Demand Zone service level standards provides protection to the number of properties indicated below;

Municipal Addresses Covered	Time	9 Minutes/15 FF	10 Minutes/10 FF	14 Minutes/6FF	
	Target	2881	3501	3111	
	Actual	0	2797	3111	

² "The approved level of service to be determined by Council" in an Establishing and Regulating By-Law