HALIFAX

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Item No.
Executive Standing Committee
December 15, 2014

TO: Mayor Savage and Members of Executive Standing Committee

Original Signed

SUBMITTED BY:

Richard Butts, Chief Administrative Officer

Original Signed

Doug Trussler, Fire Chief

DATE: December 15, 2014

SUBJECT: Fire Services Operational Review – 2014 Update

ORIGIN

February 2006 – Council motion put and passed that "Staff develop a multi-year response strategy for implementation as outlined in the February 6, 2006 Council report and in accordance with the Business Planning and Budget cycles."[1]

June 2012 – The Fire Chief directed staff to prepare a Master Fire Plan to meet the requirements of *Halifax Regional Municipality Charter* 2008, c. 39, s. 1, Part X, Section 304 (4).

LEGISLATIVE AUTHORITY

The *Halifax Regional Municipality Charter* 2008, c. 39, s. 1. confers legislative authority to maintain and provide fire and emergency services by providing the service, assisting others to provide the service, or working with others to provide the service.

The *Fire Safety Act, An Act to Promote and Encourage Fire Safety*, 2002, c. 6, s. 1. confers legislative authority to make and enforce municipal by-laws relating to matters dealt with by the Fire Safety Act, the regulations or the Fire Code.[2]

Administrative Order 24, Respecting Fire and Emergency Service in Halifax Regional Municipality establishes Halifax Regional Fire & Emergency (HRFE) as a fire department pursuant to Section 294 of the *Municipal Government Act*, 1998, c.18, s1.

[1] See http://www.halifax.ca/council/documents/c060214.pdf and http://www.halifax.ca/council/agendasc/documents/FireEmergencyServiceDelivery.pdf
[2] See http://nslegislature.ca/legc/statutes/firesafe.htm

RECOMMENDATION

It is recommended that Executive Standing Committee recommend that Halifax Regional Council:

1. Endorse the 5-Year Technology Roadmap objectives in the Discussion section of this report and include the year one objectives (Data Management and Process Review, HRFE Dispatch Project, and HRFE FDM Review and Enhancements) in the 2015/2016 capital budget;

2. Endorse the consolidation of equipment, career personnel and volunteer personnel in the core fire stations, to more effectively deliver fires services, and authorize staff to decommission Stations 4 (Lady Hammond), 11 (Patton Road) and 13 (King Street);

3. Authorize staff to initiate the process to improve coverage by relocating stations 8 (Bedford) and 9 (Sackville) to increase coverage and eliminate gaps that exist due to the growth of Bedford West/Hammonds Plains;

4. Authorize staff to investigate partnership opportunities with Halifax Stanfield International Airport to improve service delivery;

5. Endorse the following

   (a) Improve the rural fire response by:

      i. maintaining E Platoon complements, as per the Discussion section of the report and as set out in Attachment 1 (proposed staffing model);
      ii. increasing career staff to four in major rural stations; and
      iii. investigating options to transition Station 28 (Sheet Harbour) to E Platoon staffing level.

   (b) Maintain 24/7 Volunteer staffing, as per the Discussion section of the report and as set out in Attachment 1 (proposed staffing model).

   (c) Decommission volunteer sub-stations 25 (Ostrea Lake-Pleasant Point), 31 (East Ship Harbour), 36 (Meaghers Grant), and 43 (Grand Lake – Oakfield);

   (d) Maintain the existing fire coverage MOU with Enfield;

   (e) Investigate entering into fire coverage MOUs with communities bounding Halifax Regional Municipality, including Hubbards and Ecum Secum; and

   (f) Continue volunteer recruitment initiatives.

6. Direct staff to return to Council with a revised Fire Service Delivery Target and Administrative Order 24 no later than March 2016, following further detailed analysis of the 2006 Service Delivery Standard.

OVERVIEW

A comprehensive Operational Review of fire services in the municipality has not taken place since fire coverage in Halifax County was the responsibility of 38 individual fire departments, each with its own fire stations, equipment and personnel. Since 2012, HRFE has embarked on a process of critical self-examination and a re-evaluation of how fire services are delivered in the municipality. This process is driven by a commitment, on the part of the Fire Chief and fire services' senior management, to modernize HALIFAX's fire service – to make the best use of personnel, stations and equipment to serve the municipality.

The recommendations laid out in this report represent an initial step in reconfiguring fire services and mapping the next steps in bringing together the necessary resources to ensure appropriate levels of fire coverage within the municipality. The report's recommendations lay the groundwork for moving ahead with changes that will result in better business intelligence and an improved capacity to make informed choices about how best to allocate HRFE resources. The recommendations are intended to address immediate service delivery challenges, both in the core and in the rural context. No reductions in staff and no reductions in fire coverage are proposed in the report. HRFE's recommendations are, instead, intended to repurpose resources to make lasting improvements to fire services.

BACKGROUND

Halifax Regional Fire and Emergency Overview: Halifax Regional Fire & Emergency (HRFE) is the oldest fire service in Canada, serving and protecting 413,700 permanent residents in a 5,490 km^2 area. A variety of land uses exist in HRM including commercial, industrial(ship building, oil refineries, fisheries), military, high, medium, and low density residential, agricultural, institutional (universities, colleges, schools, local and regional hospitals, nursing homes, etc.) and assembly occupancies.

Strategically located in fire stations throughout HRM, career and volunteer fire crews provide a full range of emergency services including:

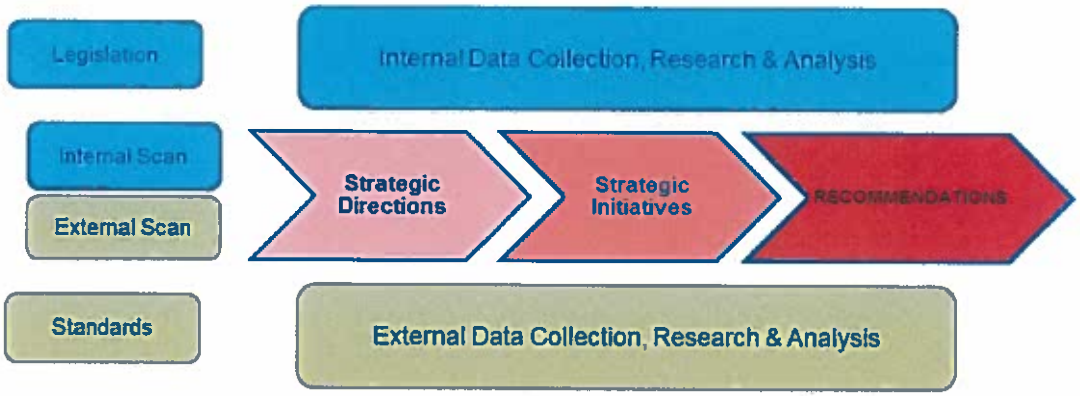
- fire prevention (fire inspections and code enforcement, fire investigations, plans examination, and public fire safety education);
- fire suppression and rescue;
- technical rescue (auto extrication, machinery, ice-water, high and low angle rope, trench, and confined space rescue, USAR – urban search and rescue);
- hazardous materials response including CBRNE (chemical, biological, radioactive, nuclear and explosive);
- pre-hospital emergency medical services; and
- emergency preparedness.

Operational Review | Phase I – Management Team Re-alignment: In June 2012, the Fire Chief asked senior fire services staff to conduct a review of HRFE's management team to eliminate duplicated management processes and activities, streamline service delivery and improve effectiveness, and provide better role clarity within the chief officer ranks. This phase of the Fire Chief's operational review resulted in the elimination of one entire senior rank and reduced the number of chief officers by 25 percent. The alignment of the non-union administrative structure with other business units, and reconfiguration of HRFE operations into six divisions put responsibility and decision-making, in the field, closer to front-line operations. In addition, the volunteer rank structure was reorganized to align with the career service rank structure, giving one unified command and control structure across HRM.

Operational Review | Phase II – Master Fire Plan: In October 2012, the Fire Chief struck a steering committee composed of management, union, civilian and volunteer staff members to undertake a review of HRFE operations and develop a Master Fire Plan. The Master Fire Plan is meant to provide Council with advice on deployment of apparatus, citing of fire stations, and safe, effective staffing levels. As of the

writing of this report, the Master Fire Plan remains a work-in-progress, however, the work done to date informs the recommendations made in this report.

Master Fire Plan Development – Process Overview: Development of the Master Fire Plan has involved multiple, interrelated approaches to data collection, research and analysis. These approaches are intended to strengthen the plan-writing process and help to ensure that the plan is informed by reliable data, solid subject-matter research and representative stakeholder feedback.



Master Fire Plan

Development – Stakeholder Surveys: External surveys were sent to 140 stakeholders who have an influence on, or impact, service delivery. An internal survey was sent to 1,100 employees (career and volunteer members). These surveys collected essential information which helped to determine the fire service's current strengths, weaknesses, opportunities, and threats (SWOT analysis). Stakeholders ranged from the Mayor and Regional Council to the Canadian Coast Guard. The stakeholder surveys were compiled in May 2013. HRFE received 271 completed surveys, including several group responses, which provided over 3,000 individual comments.

Master Fire Plan Development – External Data Collection, Research and Analysis: HRFE has commissioned numerous data collection, research and analysis projects designed to inform the development of a Master Fire Plan (see Table A).

TABLE A: DATA COLLECTION, RESEARCH AND ANALYSIS PROJECTS

Scan	Purpose
Building Condition and Energy Assessment	Provided a comprehensive review of the condition and utilization of fire stations in support HRM's long term asset management plan.
Fire Services Technology Roadmap	Defined and prioritized projects to modernize technology in HRFE.
Fire Underwriters Survey (FUS)	Provided information about the strengths and potential weaknesses in fire defenses with recommendations to deal with issues.
Fire Dispatching Operation Review	Reviewed current 9-1-1, fire, and emergency dispatch operations processes and technologies.
Fire Safety Inspection Review	Reviewed the current processes in place to provide legislated fire inspections under the Fire Safety Act and Fire Safety Regulations.
By-Law M-100 Review	Reviewed the current processes in place to provide legislated fire inspections and support M-100.

Additional details concerning these data collection, research and analysis projects are provided in the Attachment 2 and Attachment 3 to this report.

Master Fire Plan Development – Strategic Issues: The internal and external scans identified multiple strategic issues that were then categorized into three strategic directions (see Table B).

TABLE B: MASTER PLAN STRATEGIC DIRECTIONS

Category	Descriptor
Personnel Administration	Establish consistent, transparent and appropriate processes and programs to select develop and deploy staff.
Physical Assets	Evaluate and determine fleet, facilities, equipment, and system requirements respective to operational needs.
Policy Rationalization	Review, refine and develop guidelines, policies and procedures that meet organizational needs and legislative requirements.

Master Fire Plan Development – Standards and Legislation: The Master Fire Plan Steering committee considered national and international fire protection service standards in shaping a progressive plan to address HRM's needs. The Committee also reviewed HRFE's existing service delivery mandate, as set out in municipal By-laws and Administrative Orders and as set out in relevant Provincial legislation and regulations.

Master Fire Plan Development – Internal Data Collection, Research & Analysis: Working groups were established for each strategic direction to conduct research, review surveys, analyze studies and related information, consult key stake holders, and develop action plans. To study possible resource allocation, GIS was used to map projected response times using available data sets. Staff then validated the GIS mapping model with actual response times.

Working group reports and action plans were submitted to the Master Fire Plan Steering Committee in February 2014. The recommendations in the balance of this report are informed by the recommendations put forward by these Master Fire Plan working groups.

DISCUSSION

PART I: TECHNOLOGY UPGRADES

Technology Upgrade – Historical Underinvestment: Technology gaps have emerged due to a 10-year trend of underinvestment in HRFE technology. Technology helps to ensure that firefighters respond to emergencies faster and have the right equipment at their disposal. Appropriate technology also provides an accurate look back at statistics that form the basis of future decisions. HRFE's current software and communications hardware is not meeting its operational and strategic planning needs.

Technology Upgrades – Current Challenges: HRFE's current technology does not produce reliable data, creating uncertain decision-making for response/dispatching and reporting challenges for building inspections. HRFE is currently facing a range of technological challenges relating to inaccurate/unreliable time stamping, deficiencies in its collection and management of fire safety inspection data and inadequacies in its radio dispatch system (including an inability to know where all emergency and non-emergency fire services vehicles are at any given time). Improvements to all aspects of technology are needed.

Technology Upgrades – Software and Communications Hardware Roadmap: HRFE engaged Finance, Information, Communication, and Technology's (FICT) Enterprise Architecture team to define, prioritize and depict a sequence of recommended technology upgrade projects that, together, will lead to the achievement of the desired future technical state for HRFE. FICT was asked to link HRFE's strategic

direction to its technical objectives and explore the technical opportunities available to improve fire services.

The technology roadmap project was completed in June 2014. The five-year plan details the path to HRFE's desired state including the projects required, the high-level costs, the desired order, and expected timelines.

Technology Upgrades – Expected Outcomes: Key outcomes of the technology plan will be to:

- Adopt governance processes to ensure data remains consistent and reliable for decision making.
- Bring FDM (RMS) in line with best practices to act as a true system of record for fire activities.
- Ensure that Fire Dispatch operations are utilizing consistent processes and current technologies to minimize incident response times.
- Enhance how personnel are rostered to allow station staffing coverage to be accurately managed
- Integrate mobile technology to enhance fire ground operations.
- Modernize the management of truck and station assets to ensure equipment is available when needed and reduce loss.

Technology Upgrades – Opportunity Assessments: For larger, more complex technology upgrade initiatives, opportunity assessments would take place before project initiation. The opportunity assessments would investigate various technical options and identify a preferred solution. Projects currently identified for opportunity assessment include: pre-incident planning; non-capital asset management; roster management; business Intelligence; and multi-agency accountability management.

Technology Upgrades – Projected Costs: The roadmap components collectively represent a $9.4 million dollar investment. The 5-year, $9.4 million dollar technology investment breaks down as follows: $1.91 million in year one; $2.27 million in year two; $2.15 million in year three; $2.12 million in year four; and $.95 million in year five. Year-by-year project details are reproduced in Attachment 3.

The technology upgrade projected costs incorporate contingencies, allow for training and change management, include ongoing capital costs and provide for procurement of hardware and software.

Technology Upgrades – Architecture Principles: HRFE data will be entered in one HRM application and shared electronically with other applications that require copies of the data. Integrations will leverage HRM standard technologies and HRM enterprise applications will be utilized where possible. Information management best practices, such as master data management, the standardization of data codes and content, and data governance will be part of each HRFE initiative to maximize operational benefits and efficiencies.

Technology Upgrades – Integration with Corporate Initiatives: The technology roadmap will work in conjunction with multiple corporate-wide initiatives that are currently underway, including, Enterprise Asset Management (EAM), Trunk Mobile Radio (TMR2), Centralized Print Management, Traffic Signal Control System Replacement, and Mobile Device Strategy. Software and communications hardware investments will also take into account several planned corporate initiatives, including, Health & Safety and Incident Reporting, Situational Awareness, and Corporate Automatic Vehicle Location (AVL).

PART II: REALLOCATION OF RESOURCES

GENERAL

Fire Stations – Historical Legacy: HRFE currently has 52 fire stations located throughout the municipality. While many of these stations are well situated, station siting is not optimal in all cases. Many stations were constructed pre-amalgamation when responsibility for fire coverage was divided between 38 individual fire departments. Following amalgamation, the HRFE inherited its current complement of fire stations from its predecessor fire services. This legacy has resulted in inefficiencies in coverage that need to be addressed to make the most effective use of the fire services' resources and provide fire coverage where most needed.

Fire Stations – Infrastructure Plan Objectives: HRFE staff have brought together FUS facility recommendations, RP+5 projections, response time mapping criteria, staffing requirements, building condition assessments and financial analysis to create an infrastructure plan.[3] The infrastructure plan's objectives are as follows:

- relocate stations to improve service delivery and reduce overlaps;
- decommission stations and reallocate resources to improve overall service delivery;
- align resources with risk assessments to improve public safety outcomes; and
- consolidate stations to improve effectiveness and efficiency of service.

Fire Stations – Reconfiguration: Reconfiguration of fire stations will improve health and safety outcomes, both for firefighters and for the public. Reconfiguration will also serve to manage public expectations.

The long-term strategic plan for fire station reconfiguration and upgrade will have to be continuously revisited to account for changing land uses and emerging development patterns. Station reconfiguration decisions will factor in the following:

- station state of repair and energy consumption;
- compliance with station construction design criteria;
- physical location and capacity to service area (including gaps/overlaps in service coverage);
- availability of personnel (volunteer, career or combination) to staff the station; and
- availability of apparatus to equip the station.

[3] See Attachment 2 for additional detail regarding the Fire Underwriters Study (FUS) response time mapping criteria, staffing requirements, building condition assessments and financial analysis.

Fire Stations – Staffing: HRFE operates a variety of fire stations staffed by combinations of volunteer and career firefighters. HRFE provides a full range of emergency services including fire prevention, fire suppression, rescue, technical rescue, hazardous material response, pre-hospital emergency medical services and emergency preparedness. To provide such a service, HRFE has to be able to respond in a timely manner with the appropriate equipment and trained personnel. As a result, the locations of their stations, staffing complements, and available equipment all play a role in their service offering.

The recommended staffing model changes will not necessitate an increase in our current 406 operational FTE's. Consolidating staffing into fewer Stations will enable HRFE to address some of our current service gaps, improve service delivery levels, and provide efficiencies in scale and costs.

HRFE has 482 full time employees, including 406 career firefighters, and 615 volunteers currently working out of 52 fire stations as follows:

- 10 stations are staffed with A, B, C and D Platoons (24-hour, 7 days-a-week coverage by career firefighters);
- 8 stations are composite stations (24-hour, 7 days-a-week coverage by career firefighters augmented by volunteer firefighters);
- 9 stations are staffed with E Platoon (career firefighters, Monday to Friday coverage, 10.5 hours per day excluding statutory holidays with volunteer firefighter coverage in the evenings, weekends, and statutory holidays); and
- 25 stations are staffed with volunteer firefighters around the clock.

URBAN CORE RESOURCE REALLOCATION

Fire Station Reconfiguration – Career Stations Recommended for Consolidation: HRFE has assessed station staffing, call volumes and coverage areas for career fire stations in the urban core. Three existing career fire stations are being recommended for decommissioning in 2015; Station 4 (Lady Hammond); Station 11 (Patton Road); and Station 13 (King Street) and their resources consolidated in neighbouring stations. All three stations have overlapping catchment area coverage with nearby stations (see Attachment 4). No staff reductions would result from the proposed station decommissioning – staff will be redeployed to improve overall service delivery effectiveness (see Table C).

Table C: Career Station Resources Recommended for Consolidation (2015)

Station	Overlapping Catchment Areas	Staff and Equipment Redeployment
Station 4 (Lady Hammond)	Station 5 (Bayers Road) and Station 3 (West Street) cover the entire catchment area that is currently covered by Station 4 (Lady Hammond)	Transferred to Station 2 (University Avenue) to staff an existing, but currently unstaffed, aerial truck.
Station 11 (Patton Road)	Station 10 (Sackville Drive) covers most of the catchment area that is currently covered by Station 11 (Patton Road).	Transferred to Station 58 (Lakeside) to give Station 58 a staff complement of four firefighters per shift.
Station 13 (King Street).	Station 12 (Highfield Park), Station 14 (Second Street), Station 15 (Pleasant Street), and Station 3 (West Street) are all able to cover the entire catchment area that is currently covered by Station 13 (King Street).	Transferred to Station 12 (Highfield Park) to staff an existing, but currently unstaffed, aerial truck.

If Station 13 (King Street) is decommissioned, the Halifax Harbour rescue boat would be moved to Station 15 (Pleasant Street) where staff there is trained to respond with the rescue boat.

Station Decommissioning Analysis – Station 4 (Lady Hammond)

HRFE analyzed the impact on fire coverage if Station 4 (Lady Hammond) is decommissioned. The analysis looked at how many risks (required fire flow points[4]) would be left uncovered after the proposed decommissioning. About 16,709 risks are within an eight minute response zone for Station 4 (Lady Hammond). Roughly 16,707 risks are within a five minute response zone for Station 4 (Lady Hammond).[5]

If Station 4 (Lady Hammond) is decommissioned, all fire flow point risks will remain covered by two other fire stations – (Station 5 (Bayers Road) and Station 3 (West Street). All 16,709 risks are within the five minute and eight minute response zones from Station 5 (Bayers Road) and/or Station 3 (West Street). Decommissioning Station 4 (Lady Hammond) will, therefore, not impact fire response. Staff recommended that Station 4 (Lady Hammond) be decommissioned and that the crew (four personnel) be reassigned to crew an aerial apparatus in the urban core. In addition to the reduction in building operating and capital costs, HRFE would reduce its overtime deficit (due to the reassignment of officers in the core). No change to fire protection classifications (insurance underwriter ratings) would result from decommissioning Station 4 (Lady Hammond).[6]

Station Decommissioning Analysis – Station 11 (Patton Road)

HRFE analyzed the impact on fire coverage if Station 11 (Patton Road) is decommissioned. The analysis looked at how many risks (required fire flow points) would be left uncovered after the proposed decommissioning. About 1,689 risks are within an eight minute response zone for Station 11 (Patton Road). The response zone for Station 11 (Patton Road) has low exposures and few hazards as indicated by a Basic Fire Flow requirement of 1,200 imperial gallons per minute (gpm). Station 11 (Patton Road) responds to an average of 41 calls per year; only .79 calls per week.

If Station 11 (Patton Road) is decommissioned, all fire flow point risks will remain covered by one other fire station – Station 10 (Sackville Drive). All 1,689 risks are within the ten minute response zone from Station 10 (Sackville Drive). Decommissioning Station 11 (Patton Road) will, therefore, not impact fire response. Staff recommend that Station 11 (Patton Road) be decommissioned and that the crew (two personnel) be reassigned to Station 58 (Lakeside) to fully crew an apparatus. In addition to the reduction in building operating and capital costs, HRFE would reduce its overtime deficit (due to the reassignment of an officer). No change to fire protection classifications (insurance underwriter ratings) would result from decommissioning Station 11 (Patton Road).

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[4] The Required Fire Flow (RFF) is the rate of water flow that is necessary to confine and control a major fire in a specific building or group of buildings which comprise essentially the same fire area by virtue of immediate exposure. It is a constant. The RFF determines the resources required. The higher the RFF, the more resources (firefighters and apparatus) are required. To put this in perspective, response areas with five buildings that are 3 stories (10m) or more in height or areas with a basic fire flow greater than 3,300 gpm also require an aerial (staffed with four firefighters).

[5] The eight minute and five minute response times correspond with the service delivery targets approved by Council in 2006. See Table I and J in this staff report.

[6] The Public Fire Protection Classification (PFPC) is the fire insurance grading system that is published in the fire insurance grading index for commercial lines property and casualty insurers in Canada. The PFPC system uses a scale of one to ten, where one represents the maximum credit received and 10 represents no credit received. The system of fire insurance grading used in personal lines insurance is the Dwelling Protection Grade (DPG) system. The DPG system uses a scale of one to five; five represents an unrecognized level of protection or no protection at all.

Station Decommissioning Analysis – Station 13 (King Street)

HRFE analyzed the impact on fire coverage if Station 13 (King Street) is decommissioned. The analysis looked at how many risks (required fire flow points) would be left uncovered after the proposed decommissioning. About 15,953 risks are within an eight minute response zone for Station 13 (King Street). Roughly 15,924 risks are within a five minute response zone for Station 13 (King Street).

If Station 13 (King Street) is decommissioned, all fire flow point risks will remain covered by four other fire stations – Station 12 (Highfield Park), Station 14 (Second Street), Station 15 (Pleasant Street), and Station 3 (West Street). All 15,953 risks are within the five minute and eight minute response zones from Station 12 (Highfield Park), Station 14 (Second Street), Station 15 (Pleasant Street), and/or Station 3 (West Street). Decommissioning Station 13 (King Street) will, therefore, not impact fire response. Staff recommend that Station 13 (King Street) be decommissioned and that the crew (four personnel) be reassigned to fully crew an aerial apparatus in the urban core. In addition to the reduction in building operating and capital costs, HRFE would reduce its overtime deficit (due to the reassignment of officers in the core). No change to fire protection classifications (insurance underwriter ratings) would result from decommissioning Station 13 (King Street).

Fire Station Reconfiguration – Career Stations Recommended for Relocation: Staff recommend that the municipality immediately identify and acquire land as follows:

- In the Larry Uteck area, to begin construction of a new fire station to replace Station 8 (Bedford); and
- On the Bedford Highway, to begin construction of a new fire station to replace Station 9 (Sackville).

These two new fire stations would address the current and future gaps in fire protection in the Bedford region. The current Station 8 (Bedford) and Station 9 (Sackville) would be decommissioned once the new stations open.

Table D: Career Stations Recommended for Relocation (2017)

Station	Rationale for Relocation	Staff and Equipment Redeployment
Station 8 (Bedford	Current station location is sub-optimal to allow for desired response times to the Larry Uteck/Bedford West catchment area	Transferred to relocated Station 8 (Larry Uteck/ Bedford West). Replace engine with quint.
Station 9 (Sackville)	Station 10 (Sackville Drive) covers most of the catchment area that is currently covered by Station 9 (Sackville) Current station location is sub-optimal to allow for desired response times to the Larry Uteck/Bedford West catchment area.	Transferred to relocated Station 9 (Bedford Highway). Replace engine with quint.

Station Relocation Analysis – Station 8 (Bedford)

HRFE analyzed the impact on fire coverage if Station 8 (Bedford) is relocated. The analysis looked at how many risks (required fire flow points) would be left uncovered after the proposed relocation. About 6,558 risks are within an eight minute response zone for Station 8 (Bedford). Roughly 6,426 risks are within a five minute response zone for Station 8 (Bedford) – 98 percent of risks in the response zone.

If Station 8 (Bedford) is relocated simultaneously with Station 9 (Sackville), all fire flow point risks within the existing response zone for Station 8 (Bedford) will remain covered by two fire stations – relocated Station 8 (Bedford) and Station 9 (Sackville). All 6,558 risks would be within the five minute or eight minute response zone from the relocated Station 8 (Bedford) and/or from Station 9 (Sackville). Relocating Station 8 (Bedford) will, therefore, not impact fire response within the existing response zone for Station 8 (Bedford). Staff recommend that personnel currently assigned to Station 8 (Bedford) be assigned to the relocated Station 8 (Bedford). No change to fire protection classifications (insurance underwriter ratings), for properties within the existing response zone for Station 8 (Bedford), would result from relocating Station 8 (Bedford).

Gaps in fire coverage in the Bedford West/Hammonds Plains area have been projected based on an analysis of population density and realistic projections of future growth – growth that will strain the ability to respond from Station 8 (Bedford).[7] Service coverage gaps will emerge and expand if not addressed. Relocating Station 8 (Bedford) will shift the station's response zone to encompass portions of the existing Station 8 (Bedford) response zone and encompass the areas of growth in Bedford West/Hammonds Plains; specifically the areas under development bounded by Highway 102, Kearney Lake Road, Larry Uteck Drive and Hammonds Plain Road. Between 10,000 and 12,000 additional (projected) required fire flow risks will be within Station 8 (Bedford)'s reconfigured response zone. If Station 8 (Bedford) is not relocated, none of the additional required fire flow risks can be reached within a five minute response time. Parts of the Bedford West/Hammonds Plains growth area will not be reachable within an eight minute response time if Station 8 (Bedford) is not relocated. .

Station Relocation Analysis – Station 9 (Sackville)

HRFE analyzed the impact on fire coverage if Station 9 (Sackville) is relocated. The analysis looked at how many risks (required fire flow points) would be left uncovered after the proposed relocation. About 7,261 risks are within an eight minute response zone for Station 9 (Sackville).

If Station 9 (Sackville) is relocated simultaneously with Station 8 (Bedford), all fire flow point risks within the existing response zone for Station 9 (Sackville) will remain covered by two other fire stations – relocated Station 9 (Sackville) and Station 10 (Sackville Drive). All 7,261 risks would be within the five minute or eight minute response zone from the relocated Station 9 (Sackville) and/or from Station 10 (Sackville Drive). Relocating Station 9 (Sackville) will, therefore, not impact fire response within the existing response zone for Station 9 (Sackville). Staff recommend that personnel currently assigned to Station 9 (Sackville) be assigned to the relocated Station 9 (Sackville). No change to fire protection classifications (insurance underwriter ratings), for properties within the existing response zone for Station 9 (Sackville), would result from relocating Station 9 (Sackville).

Current gaps in fire protection will be closed if Station 9 (Sackville) is relocated simultaneously with Station 8 (Bedford). The Dartmouth Road area of Bedford cannot be reached, by either Station 8 (Bedford) or Station 9 (Sackville), within a five minute response time. Relocating Station 9 (Sackville) will allow crew to respond to fire emergencies on Dartmouth Road inside of five minutes. Relocation of Station 9 (Sackville) will also enable crew to provide 10-minute response time fire coverage to portions of Fall River, all of Burnside Industrial Park and portions of downtown Dartmouth. This will allow Station 9

[7] RP+5 describes Bedford West/Hammonds Plains as a "growth area". Projected build out capacity, based upon master plan projects, potential large infill projects and potential vacant serviceable lands within the urban service area support projections of 10,000 to 12,000 additional required fire flow points in the Bedford West/Hammonds Plains area.

(Sackville) to provide backup coverage to Station 7 (Knigthsridge), Station 8 (Bedford), Station 41 (Waverley), Station 45 (Fall River) and Station 50 (Hammonds Plains).

Urban Core Staffing – Volunteer Consolidation: Prior to amalgamation the communities of Bedford, Sackville, Cole Harbour and Eastern Passage had a volunteer component to supplement the career firefighters who worked only day time hours. After amalgamation these areas evolved into 24 hour career firefighter coverage. With the move to career staffing in the urban core, the need to have volunteers was diminished. Volunteer firefighter groups have been maintained for the urban core, but are rarely needed due to the availability of career firefighters 24/7. HRFE currently has 91 volunteers in the urban core that received honourarium points for participation in 2013/2014.

HRFE is proposing to reduce the number of urban core volunteers to 40 and realign deployment of these urban core volunteers to optimize their volunteer contributions. Consolidation would involve grouping urban core 'active' volunteer members within discrete geographic areas (maximum 20 members each). Two volunteer groupings would be created. The first group of volunteers would be available for call-out to emergencies within the catchment areas for Station 16 (Eastern Passage), Station 17 (Cole Harbour) and Station 18 (Westphal). The second group of volunteers would be available for call-out to emergencies with the catchment areas for Station 8 (Bedford), Station 9 (Metropolitan Ave.) and Station 10 (Sackville). Consolidating urban core volunteers will reduce the demand on HRFE's volunteer honourarium fund. HRFE will be able to redirect honouraria to support volunteer recruitment in rural areas of the Municipality that need volunteer firefighters.

RURAL RESOURCE REALLOCATION

Rural Fire Coverage: Decisions regarding how to staff rural fire stations are made on the basis of a number of interrelated factors, including the following:

- volunteer pool size (station specific);
- station location (relative to nearby career-staffed and volunteer-staffed stations);
- availability of coverage from neighbouring communities (reciprocal coverage agreements under MOU); and
- assessment of fire risk within the station's catchment area (based on population density, land usage, number of buildings and associated required fire flows).

As assessed fire risks evolve and volunteer availability changes, a full range of fire coverage options have to be considered, including:

- converting the station into a substation;
- converting the station into an E Platoon station;
- commissioning a new station;
- decommissioning the station;
- ramping up volunteers recruitment efforts; and
- negotiating coverage (by a neighbouring fire service) under an MOU.

HRFE have evaluated options to strengthen rural fire coverage. Fire services are recommending a combination of strategies to provide fire service as effectively as possible to rural residents of the municipality, including consolidating apparatus and firefighters and decommissioning stations.

Rural Staffing – Volunteer Station Staffing Levels: Despite considerable recruitment efforts, volunteer firefighter recruitment and retention remains a challenge. Over the last decade there has been a dramatic decline in the number of volunteers within the firefighting ranks. In 1996, at the time of amalgamation, HRFE volunteer members numbered in excess of 750 members. In 2014, the total number of volunteer members is approximately 615, of which 434 are currently actively participating (using Honorarium points

as a measure of participation).This is a problem at fire departments across Canada as they all struggle to recruit new volunteers. The reasons for the decline in volunteer numbers include:

- an ageing demographic;
- more demands on people's time;
- more stringent fire training requirements; and
- population shifts from rural and suburban communities to the urban core.

Many of HRFE's rural volunteer stations have low numbers of volunteers. Understaffing poses safety risks to volunteer personnel responding to fire emergencies

Rural Staffing – Volunteer Recruitment Initiatives: Staff recognize that volunteers are crucial to the continued viability of the fire service. HRFE's senior management will continue to work closely with station chiefs to advance recruitment efforts. In 2015, particular emphasis will be placed on volunteer recruitment efforts at Station 55 (Seabright) and Station 56 (Black Point) and along the entire Eastern Shore. HRFE have used a variety of advertising mediums to attempt to attract volunteers to the fire service. Advertising has included signage at volunteer stations, adverts in community newsletters/newspapers, adverts in councillor newsletters and posters. HRFE's web site has a call for volunteers. HRFE has also had a presence at community events hosted in rural and urban areas where staff have handed out collateral materials to encourage voluntarism. Open houses, organized by HRFE itself, have rounded out the volunteer recruitment effort. Funds made available, as a result of urban core volunteer consolidation, will be used to enhance rural volunteer development and retention.

Rural Staffing – Volunteer Fire Stations: Historically, a number of fire stations in the municipality have been, and continue to be, staffed by volunteer firefighters. Volunteer firefighters are expected to be available for call-out on a 24/7 basis. Stations that are currently staffed by volunteers have (comparative to career stations) lower call volumes and lower population densities per km^2. Typically, volunteer stations also do not have concentrations of industrial or commercial structures that pose significant fire safety risks. There are currently 25 volunteer fire stations. Staff recommend that four of these volunteer stations (Stations 25 (Ostrea), 31 (East Ship Harbour), 36 (Meaghers Grant) and 43 (Grand Lake) be decommissioned. If decommissioning of these volunteer stations proceeds, then Stations 19 (Lawrencetown Beach), 20 (East Lawrencetown), 21 (Lake Echo), 22 (North Preston), 26 (Oyster Pond), 29 (Moser River), 30 (Tangier), 33 (Three Harbours), 34 (Mushaboom), 35 (Crooks Brook), 39 (Upper Musquodoboit), 40 (Dutch Settlement), 41 (Waverley), 42 (Wellington), 47 (Goffs), 48 (Beaverbank), 52 (Prospect), 55 (Seabright), 56 (Black Point) and 62 (Harrietsfield-Sambro) would remain as volunteer fire stations.

Fire Station Reconfiguration – Recently Decommissioned Volunteer Stations: The low level of volunteerism in rural areas, considerable building maintenance costs, apparatus costs, and equipment costs, have required HRFE to develop a new volunteer-based service delivery model. In 2013 HRFE decommissioned five volunteer fire stations: 32 (Mooseland), 37 (Elderbank), 53 (Terrence Bay), 61 (Ketch Harbor) and 51 (Upper Hammonds Plains). These stations were Sub Stations of fire stations in their respective areas. The volunteer stations were understaffed (insufficient volunteers) and found to have experienced low call volumes. The five volunteer stations had a total of just six volunteers, only four having been trained in fire suppression techniques. These five stations fielded 525 calls between 2008 and 2013, which equates to an average of .34 calls per week/per station.

Fire Station Reconfiguration – Volunteer Stations Recommended for Decommissioning: HRFE has assessed volunteer numbers and call volumes for volunteer fire stations. Four existing volunteer fire stations are not able to meet the municipality's desired volunteer complement levels. Collectively the four stations have only five volunteers. All of the volunteer stations that are recommended to be decommissioned have catchment areas that are overlapped by adjacent volunteer stations that would remain operational (see Table E).

Table E: Volunteer Stations Recommended for Decommissioning (2015)

Station	Calls Per Week	Volunteers	Overlapping Catchment Areas
25 (Ostrea Lake – Pleasant Point)	0.7	4	Station 24 (Musquodoboit Harbour) and Station 26 (Oyster Pond and Area) overlap the Station 25 (Ostrea Lake – Pleasant Point) catchment area
31 (East Ship Harbour)	0.73	0	Station 30 (Tangier) overlaps the Station 31 (East Ship Harbour) catchment area
36 (Meaghers Grant)	0.69	1	Station 24 (Musquodoboit Harbour) and Station 38 (Middle Musquodoboit) overlap the Station 36 (Meaghers Grant) catchment area
43 (Grand Lake - Oakfield	1.6	0	Station 42 (Wellington), Station 45 (Lakeview/Fall River/Windsor Junction) and Enfield Fire Department overlap the Station 43 (Grand Lake – Oakfield) catchment area

* Call volumes calculated for 2010-2014 period (27-48% of recorded call outs were medical related).

Rural Staffing – E Platoon Fire Stations: HRFE's E Platoon staffing model was developed as a means to deal with rural coverage challenges in as fiscally responsible a fashion as possible. Rural fire coverage has to be assessed on an ongoing basis as population density and volunteer availability fluctuates. The service delivery level review (discussed in Part V of this report) is being proposed to assist HRFE in defining responsible service delivery targets for rural communities.

The E Platoon staffing model uses a blend of career and volunteer firefighters. E Platoon stations are staffed by career firefighters from Monday to Friday (10.5 hour long, daytime only shifts). Volunteer firefighters provide E Platoon station coverage in the evenings, on weekends, statutory holidays and during the daytime when available. As of July 2014, the following nine stations are staffed as E Platoon stations: 21 (Lake Echo), 24 (Musquodoboit Harbour); 38 (Middle Musquodoboit), 45 (Lakeview/Fall River/Windsor Junction), 50 (Hammonds Plains), 54 (Shad Bay), 60 (Herring Cove), 63 (Sambro), 65 (Upper Tantallon). The crew from Station 21(Lake Echo) will be reassigned to Station 23 (Chezzetcook). These stations have been chosen as E Platoon stations due to their comparatively high call volumes (relative to other rural stations), and their capacity to support nearby volunteer stations.

Rural Staffing – Conversion of E Platoon Stations to Volunteer Stations: Staffing reconfigurations have reduced the number of Platoon E stations from 15 stations to 9 stations. As of July 2014, the following six fire stations have been converted from E Platoon stations to 24-hour volunteer firefighter coverage: 20 (Lawrencetown), 23 (Chezzetcook), 47(Goffs), 55 (Seabright), 56 (Black Point) and 62 (Harrietsfield-Sambro). Call volumes to these former E Platoon stations were very low prior to their conversion to volunteer stations. Call volumes ranged from 1 day-time call every 2 weeks (highest frequency) to 1 day-time call every 6 weeks (lowest frequency). Career firefighters stationed at neighbouring E Platoon stations will now provide support to these new, volunteer-only fire stations, as detailed in Table F.

Table F: Volunteer Station Coverage by Career Firefighters

Volunteer Station	Initial Career Response
20 (Lawrencetown)	21 (Lake Echo) and 24 (Musquodoboit Harbour)
21 (Lake Echo)	18 (Westphal) and 23 (Chezzetcook)
47 (Goffs)	45 (Lakeview/Fall River/Windsor Junction), supplemented by Enfield Fire Department
55 (Seabright)	54 (Shad Bay) and 65 (Upper Tantallon)
56 (Black Point)	65 (Upper Tantallon)
62 (Harrietsfield-Sambro).	6 (Spryfield) and 63 (Sambro)

Rural Staffing – Rationale for E Platoon Reconfiguration: The recent E Platoon changes (reducing the number of E Platoon-staffed-stations from fifteen stations to nine stations) resulted in, increased crew safety, efficiencies in training and skill maintenance, superior service delivery and an overall reduction in costs.

By staffing E Platoon stations with four career members, HRFE has better ensured that adequate numbers are on scene as early as possible. Interior structural firefighting operations cannot take place until a minimum of four firefighters are on scene. Based on the previous E Platoon staffing model (15 E Platoon stations), this was dependent upon the crews of at least two E Platoon-staffed-stations arriving at the scene and/or support from the volunteer firefighters. By reducing the number of E platoon stations by six, HRFE has been able to consolidate career firefighters in fewer E Platoon stations. This means that E Platoon crews are able to act immediately upon arrival at a fire emergency.

Reconfiguration has also helped to ensure that E Platoon career staff can train regularly. A minimum of four personnel are required to carry out many of HRFE's training drills – drills that are needed to maintain firefighting skills. The previous distribution of career fire fighter (across15 E Platoon stations) meant that training necessitated pulling together career staff from two or more stations, leaving a catchment area unprotected by career firefighters while training took place. Grouping E Platoon career firefighters into units of four has, therefore, created training efficiencies.

Rural Fire Station Reconfiguration – Consolidation and New Station Construction HRFE staff have identified gaps in fire service coverage for both Halifax Stanfield International Airport and the Aerotech Business Park. Fire coverage for the airport is the responsibility of the municipality, though the airport maintains crews at the airport to provide limited fire suppression in the case of crash (sufficient only to allow for the removal of passengers). HRFE is responsible for fire protection of buildings located on the airport premises, including terminals and hangers.

Staff recommend that consideration be given to consolidating Station 42 (Wellington) and Station 47 (Goffs). Consolidation of these two stations would require the construction of a new station near the new Provincial Trunk Road. Although Station 47 (Goffs) currently services the airport and the Aerotech Business Park, its location is sub-optimal from a response time point of view.

Negotiation with Airport: Further to the proposed consolidation of stations 42 and 47, staff are seeking Council's endorsement to investigate a partnership opportunity with Halifax Stanfield International Airport, to cost-share the provision of improved fire engine and aerial apparatus coverage. Locating a fire station close to the airport and to the business park would improve fire underwriter ratings and reduce insurance costs for both the airport itself and for the business park and its tenants.

Rural Coverage – Reciprocal Fire Protection Agreements and MOUs: In February of 2004, HRFE entered into a fire coverage agreement with the Enfield Volunteer Fire Department Association (EVFDA). The EVFDA-HRFE agreement renews annually unless notice to terminate is given. Under the terms of the agreement, EVFDA provides fire coverage in parts of the communities of Enfield and Oldham (as

described in the agreement). Level of fire service is spelled out in the agreement. EVFDA is compensated annually for the agreed upon fire coverage. Under the agreement, HRFE and EVFDA also have agreed to provide mutual aid to each other (in addition to the paid fire protection services set out in the agreement).

Fire protection and mutual aid agreements, like the agreement currently in place with EVFDA, can be used to augment fire coverage in rural parts of the municipality that bound neighbouring communities. HRFE is recommending that additional fire coverage agreements be explored with communities that are able to provide an acceptable standard of fire coverage. In doing so, HRFE can supplement rural service delivery in a cost effective fashion. As an initial step, HRFE is recommending that agreements be explored with both Hubbards and Ecum Secum.

Table G: Volunteer Staffing Strategy by Region

Western Region	• Maintain current E Platoon staffing model; • Investigate MOU opportunities with the Hubbards Fire Department; • Continue working with local station chiefs on volunteer recruitment efforts at Station 55 (Seabright) and Station 56 (Black Point); • Monitor future 24/7 staffing requirements based on volunteer participation, risk assessments, call volume, and population density.
Eastern Shore	• Maintain current E Platoon Staffing Model • Move E Platoon crew from Station 21 (Lake Echo) to Station 23 (Chezzetcook) • Staff Station 28 (Sheet Harbour) with an E Platoon complement; and • Continue working with local station chiefs on volunteer recruitment efforts.

RESOURCE MANAGEMENT – OTHER FIRE SERVICES STRATEGIES

Training Facilities: HRFE's current training facilities were constructed by the former City of Halifax in the mid-1980's to support 6 fire stations and approximately 220 members. No provision was made for expansion, nor was provision made for the use of live fire training structures. Due to the exceptional water supply provided to the site, this facility is primary used as a training facility for pump operations, engineer driver training and aerial operational training.

HRFE needs a fire training facility which will allow for year-round live fire, flashover and natural gas training, as well as CBRNE (Chemical, Biological, Radiological, Nuclear and Explosive), confined space, trench rescue, collapse rescue and high angle technical rescue training. If properly designed and funded, the facility could be utilized for vehicle extrication training, hazardous materials response training and could be used by other municipal departments for trench training, confined space training, natural gas and driver training. HRFE has engaged Stantec to assist with siting the training facility (see Attachment 2).

HRFE recognizes that acquiring land and constructing a modernized training facility would be costly. Consequently, HRFE is proposing that training facility partnership opportunities be investigated with internal partners, including Halifax Regional Police (HRP), Transportation and Public Works (TPW) and Halifax Transit. HRFE is also proposing that training facility partnership opportunities be investigated with external partners, including the Province of Nova Scotia (PNS), the Department of National Defence (DND) and the Royal Canadian Mounted Police (RCMP).

The current report recommendations do not account for expenditures relating to the construction of a new training facility. This is a reflection of competing priorities facing HRFE in the short-to-medium time-frame – in particular, the relocation of Station 8 (Bedford) and Station 9 (Sackville) has been identified as an immediate fire protection priority.

Fire Fleet Rationalization: Although the current complement of fleet is appropriate with the recent addition of several new pieces of apparatus, the assignment of fleet to Stations does not allow the business unit to meet the needs of the service response time requirements. Improvements to service delivery can be realized by rationalizing emergency and non-emergency vehicles regarding appropriate location, assignment and configuration. Units should be placed in locations with the most appropriate response times in the areas of highest risk and incident rates. Non-emergency vehicles should be allocated based on functional purpose and need.

PART III: FIRE-SAFETY INSPECTIONS

Fire-safety Inspections – Fire Safety Act Requirements: The Province's Fire Safety Act imposes a number of fire-safety inspection duties on the municipality. Under the legislation, HRM is required to establish a system of fire-safety inspections of land and premises situate within its jurisdiction. The municipality is further required to establish and conduct a system of inspections, ensure that a record is made of every inspection undertaken by the municipality and retain those records of inspection.[8]

Under the Fire Safety Act, the Governor in Council may make regulations respecting the scope, content and record-keeping requirements regarding a system of inspections for which a municipality is responsible, including:

- the classes of places that require mandatory inspection;
- the minimum frequency for inspections of each class of place; and
- the requirement for a municipal council to consider the need for inspection of other classes of places and the adoption and implementation of a policy on inspections for any such classes of places.

Regulations passed by Governor in Council, pursuant to the Fire Safety Act, impose fire-safety inspection responsibilities on the municipality in regards to the following: [9]

- assembly occupancies (Group A);[10]
- residential occupancies that have more than 3 units and are not regulated under the Homes for Special Care Act (Group C);[11]
- business and personal services occupancies (Group D);[12]
- mercantile occupancies (Group E);[13] and
- industrial occupancies (Group F)[14].

The only occupancy group that has a mandatory re-inspection period is assembly occupancies (Group A). Re-inspection of assembly occupancies must take place at least once every three years.

Fire-safety Inspections – By-law M-100 Requirements: By-law M-100 Respecting Standards for Residential Occupancies,[15] applies to all residential occupancies in the municipality.[16] By-law M-100 imposes multiple fire-related standards on building owners, including standards relating to fire alarm

[8] See http://nslegislature.ca/legc/statutes/firesafe.htm.
[9] See http://www.novascotia.ca/just/regulations/regs/fsfiresf.htm, sections 13-14.
[10] Group A occupancy examples include movie theatres, schools, restaurants, arenas, and bleachers.
[11] Group C occupancy examples include apartments, hotels, dormitories and boarding houses.
[12] Group D occupancy examples include offices.
[13] Group E occupancy examples include department stores, grocery stores and markets.
[14] Group F occupancy examples include high risk industrial facilities.
[15] See http://halifax.ca/legislation/bylaws/hrm/documents/By-LawM-100.pdf
[16] Residential occupancies include buildings occupied or used for sleeping accommodation, but exclude buildings where people are harboured or detained, hunting camps, cottages and other similar seasonal residences.

systems, fire safety plans, fire separations, fire escapes, fireplaces, chimneys, fuel-burning appliances, fire extinguishers and wiring. By-law M-100 also governs rooming house licensing and annual inspections of licensed rooming houses

Fire-safety Inspections – By-law M-100 Enforcement (Current State): Enforcement of By-law M-100 is currently split between the HRFE's Fire Prevention staff and Planning and Development's (PD) Municipal Compliance staff. [17] General maintenance standards are enforced by HRFE or PD depending on the building's classification (based on size and type of occupancy). Rooming, boarding and lodging houses, are primarily enforced by PD, with some enforced by HRFE (depending on the building's classification – size and type of occupancy).

Fire-safety Inspections – Fire Safety Act Enforcement (Current State): HRFE is currently exclusively responsible for fire safety inspections under the Fires Safety Act as follows: assembly occupancies (Group A); business and personal services occupancies (Group D); mercantile occupancies (Group E); and industrial occupancies (Group F)

Residential occupancies that have more than 3 units and are not regulated under the Homes for Special Care Act (Group C) are currently the shared responsibility of HRFE and PD.[18] HRFE is currently responsible for buildings under Part 3 of the Building Code, and buildings under Part 9 of the Building Code that are mixed use (commercial and residential).[19] PD is currently responsible for residential buildings under Part 9 of the Building Code, excluding properties that have mixed use (commercial and residential).

Fire-safety Inspections – Business Process Review: A fire-safety-inspection business-process-review was conducted by Finance & ICT Corporate Planning in collaboration with HRFE and PD.[20] The business improvement engagement was intended to:

- Review the fire-inspection processes in place (HRFE and PD);
- Clarify the legislative requirements of Fire Safety Act (FSA) and Fire Safety Regulations (FSR);
- Determine educational requirements for staff to be qualified to perform fire safety inspections;
- Develop strategies to utilize existing workforce capacity to manage fire safety inspection under M-100 and the Fire Safety Act; and
- Ensure that HRM is meeting its legislated responsibilities.

The business-process-review looked at the types of inspections being performed by HRFE and PD staff, the timelines for completing legislated inspections, as well as the efficiency of the current staffing model. The business process review findings were as follows:

- Fire-safety inspection obligations under the Fire Safety Act are not being met;
- Labor-intensive M-100 inspections relating to general maintenance standards exceed HRFE's current staffing capacity;
- By-law M-100 enforcement and service level standards are not clear and consistent;
- Unlicensed and uninspected rooming houses are operating in HRM;
- Co-responsibility for fires safety inspection has created inefficiencies;

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[17] Joint PD/HRFE fire inspection responsibility under By-law M-100 was detailed in a CAO Memo from December of 2005.
[18] Joint PD/HRFE fire inspection responsibility under the Fire Safety Act was detailed in a CAO Memo from December of 2005.
[19] This code provides definitions for both Part 3 and Part 9 buildings. Essentially, Part 9 buildings include houses and certain other small buildings (less than 3 stories in building height and 600 m2), while Part 3 buildings are the larger buildings with more complex requirements.
[20] Note that the review process was initiated while Municipal Compliance was under Community and Recreation Services (CRS). For sake of clarity, PD will be used in place of CRS, since PD now has operational responsibility for residential fire safety inspections.

- Frequency of inspection is currently not risk-based;[21]
- Receipt and distribution of incoming fire safety inspection calls is frustrated by the lack of a clear service delivery model.

HRFE and PD (Municipal Compliance) are engaged in an ongoing process to realign fire safety inspection to ensure that fire safety inspection work will be handled consistently for each occupancy classification and that HRFE fire crews can be utilized to assist with site inspections (as needed).

Fire-safety Inspections – Proposed Workflow: In light of the review findings, staff plans to realign fire safety inspection responsibility as follows:

Table H: Fire Safety Inspection Proposed Workflow

Recommended State	Impact / Results
PD assume responsibility for all M-100 demand work, Rooming House Licensing, and Fire Safety Inspections in C-Residential buildings. PD become responsible for the following: • M-100 Demand: 645 requests / year • M-100 Rooming House: 24+ Licenses/year • Fire Safety Insp: approx. 5081 C-Residential occupancies • Consultation on Fire Safety Inspections when requested by F&ES	Potential benefits from these changes include: Accountability will be with PD for residential inspections • Clear accountability will help HRM meet legislated inspections where we are currently deficient • Eliminate existing client confusion, potential frustration, and uncertainty • Facilitate implementation of changes to the M-100 Bylaw, which are being considered through Q1 2014 Improved use of HRM resources • Repeatable process will shorten the duration required for each inspection • Consistent data entry will allow property counts to be confirmed in the field and inspection records to be reliably reported • No longer required to triage incoming M100 Demand work (faster response) Reduce capacity demands on HRFE.
HRFE transfer responsibility for M-100 demand work, Rooming House Licensing, remaining C-Residential properties to PD, and utilize Operational fire crews to assist with remaining FSA Inspections. HRFE become responsible for the following: • M-100 work only when consultation required by PD • Fire Safety Insp: approx. 6952 buildings of A, B, D, E, and F occupancies • Consultation on Fire Safety Inspections when requested by PD	Potential benefits from these changes include: Accountability will be with HRFE for inspections of A, B, E, D and F occupancies • Clear accountability will help HRM meet legislated inspection requirements where we are currently deficient Improved use of HRM resources • Repeatable process will shorten the duration required for each inspection • Remove M-100 responsibilities from Fire Prevention Officers • HRFE can focus attention on revising its system of fire safety inspections, while maintaining current staffing numbers (11 inspectors). • Opportunities exist for changing inspection processes (explored in B3-B4)
HRFE capacity management opportunity: utilize	A reorganization of Operational crews' station duties and

[21] Inspections should be conducted based on the risks associated with the type of occupancy. Occupancy types with greater associated risks should be inspected more frequently.

operational fire crews to assist with a system of fire safety inspections.

training could provide capacity for completing fire safety inspections.

Potential benefits from this would include:

- Efficient use of an existing workforce that will provide field experience and positive public image for HRFE
- Provide operational crews with on-site experience of the buildings in their areas, specifically those matters relating to fire safety, hazardous materials, and the availability of fire-fighting infrastructure at each location
- Opportunity for Fire Prevention succession planning through exposure to these inspections by a large number of HRFE staff.

HRFE establish two levels of Fire Safety Inspection:

Full: A full inspection of all fire safety aspects of a building conducted by a Fire Prevention Officer

Maintenance: Periodic inspection of a building by operational fire crews to verify fire safety aspects of the building. If issues are identified then the building is escalated to Fire Prevention for a full inspection and verification / resolution of issues.

Full Inspections (proposed)	
HRFE Full Inspections/year:	934
Fire Prevention Inspectors:	11
Full Inspections/FPO/year:	85
Full Inspection/FPO/month:	7

The number of maintenance inspections will be determined after the year-one review.

The reassignment of fire safety inspection roles is intended to achieve the following:

- Role clarity for M-100 and residential fire safety inspections;
- Better reporting and better alignment of resources;
- Better public understanding of individual responsibility for fire safety; and
- Reduced risk for public safety and provincial intervention.

PART IV: SERVICE DELIVERY LEVELS

Service Delivery Levels – Administrative Order 24: Administrative Order 24, the Halifax Regional Municipality Fire and Emergency Service Administrative Order was passed by Council on June 12, 2001.The Administrative Order registers the Halifax Regional Fire and Emergency Service as a fire department pursuant to Section 294 of the *Municipal Government Act*. Part I of the Administrative Order sets out the powers of the Chief Officer, and addresses promotions, fire fighter qualifications and matters of discipline. Part II of the Administrative Order 24 spells out the conditions under which a volunteer fire department may be registered as a fire department and/or emergency service provider independent of the Fire Service. Appendix A, of Administrative Order 24, sets out the types of services to be delivered by the fire service and, in very simple terms, the level of service required (i.e. first responder, operational, assistance or public education/inspection/investigation).[22]

[22] See https://www.halifax.ca/legislation/adminorders/ao024.pdf

Service Delivery Levels – 2005 Standards Review: Beginning in 2001 and concluding in 2005, an internal committee of fire service managers conducted a review of fire and emergency services' service delivery levels for career stations, for composite stations and for volunteer stations. The Committee compared HRM's then-current service delivery levels to other similar sized cities and researched fire services consensus codes and standards, including those developed by the National Fire Protection Association (NFPA)[23]. A decision was made not to adopt NFPA 1700 series standards, as written, since doing so would have resulted in substantive changes in the number of personnel required to deliver fire services and would have had significant financial implications for the municipality. Service delivery levels were, instead, based on NFPA 1700 series standards with logical deviations to take into account the diversity of fire protection districts serviced by HRFE.

Service Delivery Levels – 2006 Council Direction: On February 14, 2006, Halifax Regional Council voted to approve staff's recommended service delivery levels for fire and emergency services in the municipality.[24] These service delivery levels pertain to: (a) dispatch time; (b) firefighter turnout time; (c) response time and (d) staff complement. Two different sets of service delivery levels were approved – one for fire protection districts with a population over 100 persons per km^2 – one for fire protection districts with a population under 100 persons per km^2 (see Table I and Table J).

TABLE I: HRFE SERVICE DELIVERY LEVELS
POLULATION DENSITY OF 100+ PERSONS PER SQUARE KM

Type	Particulars
Dispatch	Dispatch time of 60 seconds.
Turnout	Staff turnout time of 60 seconds.
Response	Response time of 5 minutes or less (90% of the time) for single unit responses, or for the first arriving unit of a multiple-unit response.
	Response time of 8 minutes or less (90% of the time) for subsequent arriving units of a multiple unit response or alarm assignment.
Complement	A full alarm assignment consists of 2 engines, 1 aerial, and 1 tactical unit, for a total of 12 personnel.
Incident Officers	An incident safety office and a dedicated incident commander be dispatched on full alarm assignments, with no response time criteria.
Subsequent Alarm	A subsequent alarm assignment consists of a minimum of 2 units (configuration acceptable to incident commander) for a total of 8 additional personnel.

[23] Established in 1896, the National Fire Protection Association is an advocate for fire prevention. NFPA develops, publishes, and disseminates more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks.
[24] See http://www.halifax.ca/council/documents/c060214.pdf Item 9.1.6 Halifax Region Fire and Emergency Service Delivery Levels. See also http://www.halifax.ca/council/agendasc/documents/FireEmergencyServiceDelivery.pdf

TABLE J: HRFE SERVICE DELIVERY LEVELS
POLULATION DENSITY OF LESS THAN 100 PERSONS PER SQUARE KM

Type	Particulars
Dispatch	Dispatch time of 60 seconds.
Turnout	Staff turnout time of 60 seconds.
	Volunteer turnout time of 6 minutes or less (90% of the time).
Response	Response time of 10 minutes or less (90% of the time) for single unit responses, or for the first arriving unit of a multiple-unit response.

Provision was made for extraordinary exemptions (to address natural disasters and states of emergency) and acceptable exemptions (to address island properties not accessible by public roadway, private roads). Council adopted a service delivery standard that was to be implemented over a multi-year period.

Service Levels – Failure to Audit Service Delivery Performance: Council's 2006 motion directed HRFE to develop a multi-year implementation strategy, in accordance with the business planning and budget cycles. In their 2006 report to Council, HRFE undertook to conduct annual audits of (a) dispatch time; (b) firefighter turnout time; and (c) response time. Annual audits were not conducted between 2006 and 2012.

Recognizing that fire services had a significant business–intelligence/informational deficit, HRFE contracted SCM Risk Management Services, in 2012, to review the municipality's fire service delivery levels. In the course of work conducted by POMAX and SCM Risk Management, analysis identified HRFE data collection and data management issues that made assessments of service levels problematic.[25]

Service Levels – Revisiting Previously Recommended Service Levels: Staff are recommending that service levels be revisited. A comprehensive assessment of service delivery targets/standards would need to account for a range of fire tactical priorities, including (a) life safety; (b) incident stabilization; and property conversation. Staff maintain that revisiting service delivery standards is appropriate under the circumstances. Changing demographic pressures, emerging volunteerism challenges (discussed elsewhere in this report) and evolving regional, nation and international approaches to the provision of fire protection can be considered.

Service Levels – Amendment of Administrative Order 24: Staff are recommending that Administrative Order 24 be amended to better reflect fire protection services within the municipality. Staff maintain that Administrative Order needs to comprehensively address the full range of fire protection services currently offered in the municipality, including:

- fire prevention (fire inspections & code enforcement, fire investigations, plans examination, and public fire safety education);
- fire suppression and rescue;
- technical rescue (auto extrication, machinery, ice-water, high and low angle rope, trench, and confined space rescue, USAR – urban search & rescue);
- hazardous materials response including CBRN (chemical, biological, radioactive, & nuclear);
- pre-hospital emergency medical services, and emergency preparedness.

Administrative Order 24 currently lacks service delivery standards, against which HRFE's activities may

[25]HRFE's engagement of ICT to create a technology roadmap (as discussed elsewhere in this report) was motivated, in part, by this lack of reliable dispatch and response data.

be measured. Staff are asking for direction to return to Council with revised fire service delivery targets and a draft amended Administrative Order 24.

FINANCIAL IMPLICATIONS

The recommendations laid out in this report will result in the following cost savings in fiscal 2015/2016:

- $787,000 | Potential overtime overage savings resulting from proposed E platoon realignment and the proposed decommissioning of three urban core, career fire stations – Stations 4 (Lady Hammond), 11 (Patton Road) and 13 (King Street).

- $214,000 | Building Maintenance savings realized from the proposed decommissioning of four volunteer stations – Stations 25 (Ostrea Lake), 31 (East Ship Harbour), 36 (Meaghers Grant) and 43 (Grand Lake) and the proposed decommissioning of three urban core career fire stations – Stations 4 (Lady Hammond), 11 (Patton Road) and 13 (King Street).

- $3,027,100 | Potential capital cost avoidance over the next 10 years identified in the Capital Management Engineering limited (CMEL) Building Condition report for the 7 stations identified for decommissioning plus the 2 identified for relocation.

  Capital cost avoidance breakdown down as follows: Station 4 (Lady Hammond) $451,800, Station 8 (Bedford) $537,000; Station 9 (Sackville) $701,000; Station 11 (Patton Road: $185,400; Station 13 (King Street) $635,300; Station 25 (Ostrea Lake) $52,000; Station 31 (East Ship Harbour) $80,600; and Station 36 (Meaghers Grant) $384,000. Station 43 (Grand Lake) is not owned by HRM.

- $105,000 | Vehicle Maintenance savings realized from taking seven engines out of service as a result the proposed decommissioning of four volunteer stations – Stations 25 (Ostrea Lake), 31 (East Ship Harbour), 36 (Meaghers Grant) and 43 (Grand Lake) and the proposed decommissioning of three urban core career fire stations – Stations 4 (Lady Hammond), 11 (Patton Road) and 13 (King Street).[26]

The recommendations laid out in this report will result in the following additional costs in fiscal 2015/2016:

- $252,100 | Additional first year cost of staffing Station 28 (Sheet Harbour) to E platoon level.

The recommendations laid out in this report will result in the following additional costs in fiscal 2016/2017:

- $10-14 million | Additional indicative cost (in the range of $375/sq ft) to build two new fire stations as replacements for Stations 8 (Bedford) and 9 (Sackville). This projected cost is net of the $1m cost for land acquisition.

COMMUNITY ENGAGEMENT

HRFE sent over 100 surveys to external fire and emergency services stakeholders. An internal survey was sent to 1,100 employees. HRFE received 271 completed surveys, including several group responses, which provided over 3,000 individual comments.

[26] Note that the fire services vehicles being retired from service will not necessarily come from the four volunteer and three career stations recommended for decommissioning. Removal form active service will be based on vehicle condition relative to other assets in the fire services fleet.

ENVIRONMENTAL IMPLICATIONS

There are no identified environmental implications.

ALTERNATIVES

1. Council could direct staff not to consolidate resources (equipment and personnel) and decommission one or more urban core career stations (Stations 4 (Lady Hammond), 11 (Patton Road) and/or 13 (King Street)).

   This is not recommended for the reasons outlined in the Discussion section of this report. Decommissioning would reduce overlapping fire coverage in the core.[27] Consolidation of personnel (from the decommissioned stations) will enable HRFE to staff aerial apparatus that are currently unstaffed and that have been identified as essential to effective fire coverage in the urban core. Consolidation will also reduce overtime-overage-relate-costs and reduce HRFE's building maintenance costs.

   As detailed in the Financial Implications section of this report, decommissioning will net HRFE cost savings in 2015/2016 and beyond, with no reduction in fire coverage to the areas currently serviced by these three stations.

2. Council could direct staff to reduce E Platoon staffing to two career staff per station.

   This is not recommended for the reasons outlined in the Discussion section of this report. E Platoon staff reconfiguration ensures that enough firefighters are on scene as early as possible (interior structural firefighting operations require four firefighters on scene). As discussed in the body of the report, E Platoon staff consolidation also results in training efficiencies, thereby improving fire service delivery in rural areas.

3. Council could direct staff not to decommission one or more volunteer fire stations (Stations 25 (Ostrea Lake), 31 (East Ship Harbour), 36 (Meaghers Grant) and/or 43 (Grand Lake).

   This is not recommended for the reasons outlined in the Discussion section of this report. Volunteer firefighters are not available for call-out at these four volunteer stations. Additionally, call volumes for these volunteer stations are low. Decommissioning these stations will make available for redeployment underutilized apparatus to other rural stations with active volunteer complements and higher call volumes.

ATTACHMENTS

Attachment 1: Current and Proposed Station Staffing

Attachment 2: External and Internal Data Collection, Research and Analysis

Attachment 3: Technology Roadmap Overview

Attachment 4: Response Coverage Mapping

[27] See Table C: Career Station Resources Recommended for Consolidation (2015). See also Attachment 4 – Response Coverage Mapping.

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.php then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

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ATTACHMENT 1
CURRENT AND PROPOSED STATION STAFFING

Station Number	Station Location	Current Staffing Model	Proposed Staffing Model
02	University Ave, Halifax	24/7	24/7
03	West Street, Halifax	24/7	24/7
04	Lady Hammond Rd, Halifax	24/7	Decommissioned
05	Bayers Rd, Halifax	24/7	24/7
06	Herring Cove Rd, Halifax	24/7	24/7
07	Knightsridge Dr, Halifax	24/7	24/7
08	Convoy Run, Bedford	24/7 (Composite)	24/7 (Composite)
09	Metropolitain Ave, Sackville	24/7 (Composite)	24/7 (Composite)
10	Millwood Dr, Sackville	24/7 (Composite)	24/7 (Composite)
11	Patton Rd, Sackville	24/7 (composite)	Decommissioned
12	Highfield Park Rd, Dartmouth	24/7	24/7
13	King St, Dartmouth	24/7	Decommissioned
14	Walker St, Dartmouth	24/7	24/7
15	Pleasant St, Dartmouth	24/7	24/7
16	Caldwell Rd, Eastern Passage	24/7 (Composite)	24/7 (Composite)
17	Cole Harbour Rd, Cole Harbour	24/7 (Composite)	24/7 (Composite)
18	Main St, Westphal	24/7 (Composite)	24/7 (Composite)
19	Lawrencetown Beach	Volunteer	Volunteer
20	Lawrencetown East	Volunteer**	Volunteer
21	Lake Echo	E Platoon*	Volunteer
22	North Preston	Volunteer	Volunteer
23	Chezzetcook	Volunteer**	E Platoon
24	Musquodoboit Harbour	E Platoon*	E Platoon
25	Ostrea Lake	Volunteer	Decommissioned
26	Oyster Pond	Volunteer	Volunteer
28	Sheet Harbout	Volunteer	Volunteer
29	Moser River	Volunteer	Volunteer
30	Tangier	Volunteer	Volunteer
31	Ship Harbour	Volunteer	Decommissioned
33	Three Harbours	Volunteer	Volunteer
34	Mushaboom	Volunteer	Volunteer
35	Cooks Brook	Volunteer	Volunteer
36	Meaghers Grant	Volunteer	Decommissioned
38	Middle Musquodoboit	E Platoon*	E Platoon
39	Upper Musquodoboit	Volunteer	Volunteer
40	Dutch Settlement	Volunteer	Volunteer
41	Waverley	Volunteer	Volunteer

42	Wellington	Volunteer	Volunteer
43	Grand Lake	Volunteer	Decommissioned
45	Fall River	E Platoon*	E Platoon
47	Goffs	Volunteer**	Volunteer
48	Beaver Bank	Volunteer	Volunteer
50	Hammonds Plains	E Platoon*	E Platoon
52	Prospect (Shad Bay)	Volunteer	Volunteer
54	Prospect	E Platoon*	E Platoon
55	Seabright	Volunteer**	Volunteer
56	Black Point	Volunteer**	Volunteer
58	Myra Rd, Lakeside	24/7 (Composite)	24/7 (Composite)
60	Herring Cove	E Platoon*	E Platoon
62	Harrietsfield-Sambro	Volunteer**	Volunteer
63	Harrietsfield-Sambro	E Platoon*	E Platoon
65	Tantallon	E Platoon*	E Platoon

* Staffing increased to crews of four career firefighters as of August 2014 (E Platoon realignment).
** Career firefighter staffing reassignment as of August 2014 (E Platoon realignment).

ATTACHMENT 2
EXTERNAL AND INTERNAL DATA COLLECTION, RESEARCH AND ANALYSIS

Building Condition and Energy Assessments (BCA/EA): In 2012, HRFE retained Capital Management Engineering Limited to conduct a study that would support long term asset management. The review included a condition assessment, a long range capital plan and an energy assessment. Floor-plan drawings, energy consumption records, and capital expenditures records were reviewed. A site assessment determined the makeup of the building and identified major systems. Station capital costs were modelled using industry data to provide an anticipated replacement schedule for the constituent major components over the next twenty-five years (while maintaining the current level of operations). Station energy efficiency measures were modelled using a baseline computer model that used station-specific site assessment data and energy consumption data.

Recommendations were developed from the various calculations and modelling and were populated into an Energy Efficient Capital Planning Tool (EECP-T) which allows the incorporation of energy efficiency projects into the overall capital and budgeting plan. The result produced a twenty-five year capital plan which was designed to provide the optimal recapitalization of each station. The capital plan provided a cash flow analysis of the capital need for each year for the next twenty-five years.

Fire Underwriter Study (FUS): In 2012, HRFE retained SCM Risk Management Services (formerly Insurers' Advisory Organization) to complete a comprehensive review of existing HRFE assets, procedures, and equipment (assessed in light of fire hazards within the municipality). The Fire Underwriter Study (FUS) was meant to provide objective, third-party data on strengths and weaknesses in the municipality's fire protection.[28]

HRFE staff extracted incident call particulars from its FDM database, including time of day, station crew dispatched, and incident type (fire or medical emergency). Call data for the 2010-2013 period was provided to the authors of the Fire Underwriter Study (FUS) for further analysis. The FUS project evaluated the level of fire risk throughout the municipality, the level of fire protection throughout the municipality, the distribution of fire stations, apparatus, response boundaries, agreements and contracts, future growth and development patterns. The draft study report provides recommendations to address service delivery deficiencies, including recommendations concerning where to situate fire stations.

GIS Mapping & Internal Analysis: Gaps in HRFE's available call dispatch and response time data required an alternative method to determine response time. In the absence of reliable FDM data, HRFE turned to GIS modeling. GIS was used to map projected response times using available data sets (traffic flow patterns, physical distance to (modeled) incident destination from (modeled) station location, etc.). HRFE's GIS technician modeled 5 minute, 8 minute and 10 minute response times for all HRFE fire stations. This data can be represented in GIS layers (polygons around each fire station in HRM). To verify reliability of GIS projected response times, HRFE staff compared GIS-modelling-based response time projections against known, real-life response times. Congruence of GIS-projections with real-life experience suggested that the modelling was reasonably accurate. HRFE's GIS modelling was also compared to the external GIS modelling provided by the FUS.

Using GIS Mapping HRFE has been able to:

- model the station response times;
- model gaps and overlaps in station coverage;
- model scenarios to improve fire station coverage by reducing overlaps, and covering gaps;
- map population densities for communities.

[28] The grading derived using the Fire Underwriter Study methodology is used by the Insurance Industry to set base fire insurance rates for commercial and residential properties. HRM Communities benefit from updated fire insurance grades that can provide cost savings to property owners (through reduced insurance premiums)

GIS modelling is one source of data HRFE is using to develop and refine station and crew placement options.

Pomox Fire Dispatching Operation Review – In April 2014, HRFE contracted Pomox Consulting Inc. to assess fire services' current technology, governance and business practice systems. Pomox reviewed current 9-1-1, fire, and emergency dispatch operations processes to determine the effectiveness of policies and procedures, current technology, and training initiatives.

The fire dispatch review includes the following:

- Assessment of HRFE's current relationship with Halifax Regional Police (HRP) – Integrated Emergency Services (IES);
- Assessment of the operating environment at IES;
- Evaluation of IES (Fire) operations, comparing the IES operations and environment with recognized standards, accepted practices and other fire services;
- Assessment of service provision to both internal and external clients; and
- Development of a short term and long term implementation plan of recommendations.

The report, led by the FICT Enterprise Architecture Team, will be completed by Pomox Consulting Inc. in November 2014.

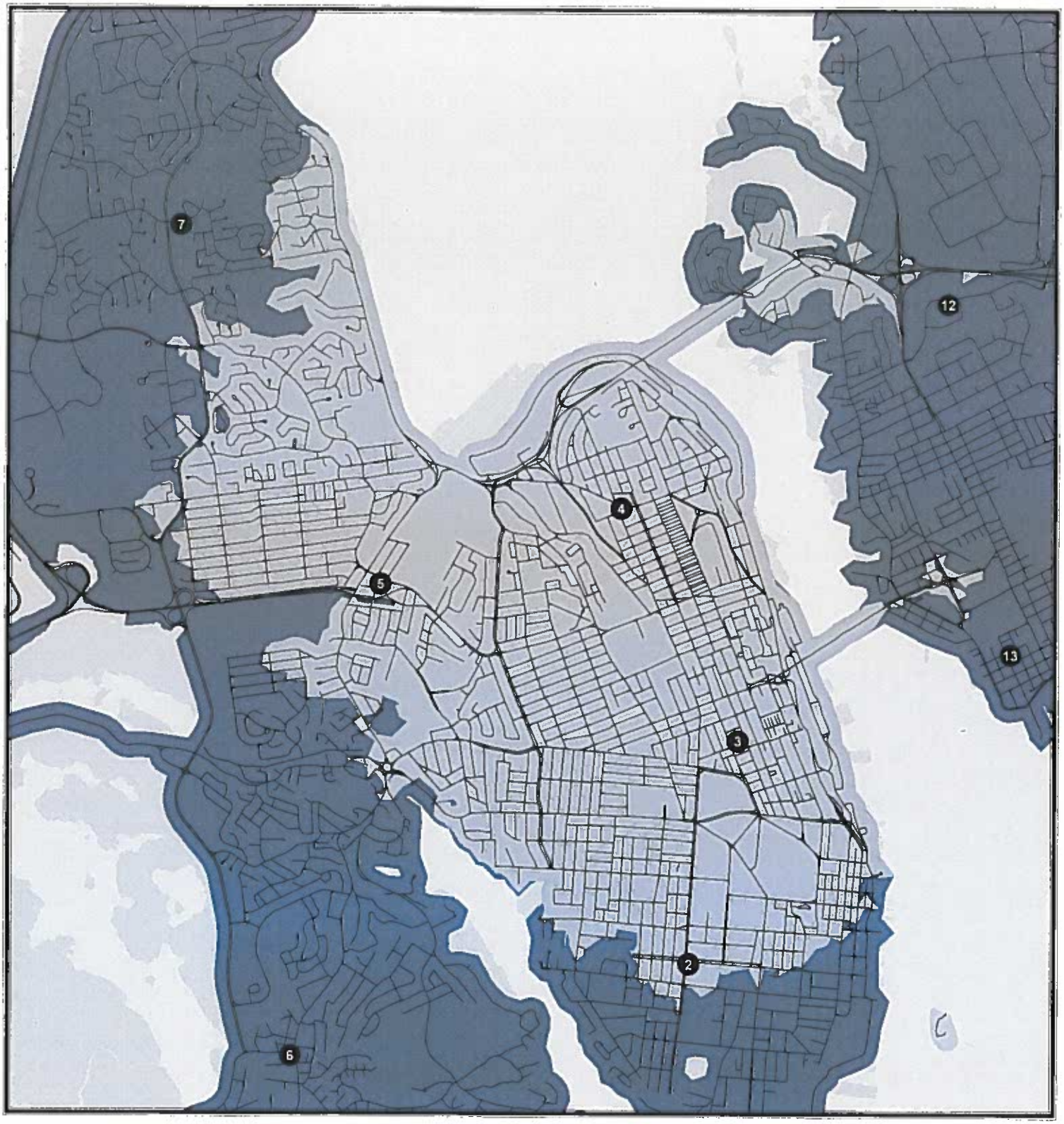
Stantec Training Facility Review: In 2014 HRFE engaged Stantec to complete a fire training facility study report. Statec was asked to (a) establish the area requirements of individual training facility components; (b) establish the global area requirements for the training facility; (c) develop criteria to evaluate different future site characteristics; and (d) assess potential site locations. The report is currently in draft form.

ATTACHMENT 3
TECHNOLOGY ROADMAP OVERVIEW

Technology Roadmap Year 1	
Project	**Overview**
Data Management and Process Review	THE HRFE Data Management and Process Review project will define how the organization manages master data, while also looking at the processes required to support sound data capture and management. This is a tactical project that will provide input into a number of other initiatives on the roadmap. The development of a data management strategy and identification of process requirements will include identifying information data stewardship responsibility, maintenance requirements, information sharing (i.e. interfaces between applications), access to information requirements/restrictions, and mediums to support standardized data collection and management. This project will also include an electronic file management strategy.
Dispatch Project	The Dispatch Review project, is currently reviewing the existing fire dispatch system operations. This review is focused on determining the effectiveness of policies and procedures, current technology and training initiatives used to dispatch fire services. The Dispatch Review project is outside of scope of the HRFE IT Roadmap, however, there are noted dependencies as the Dispatch Review project will result in a series of recommendations and projects required to improve the dispatch process and supporting technologies. A provision for the implementation of projects related to dispatch improvement has been allocated in the HRFE IT Roadmap. The specific projects for inclusion as part of the Dispatch Project defined in the HRFE IT Roadmap (i.e. the projects, sequence and priority), however, remain undefined. The projects and a more specific budgetary assumption will be determined based on the recommendations from the Dispatch Review Project.
FDM Functional Review	The FDM Functional Review project is a detailed review of each FDM module and its current implementation within HRFE. This technical review will be coupled with a review of the supporting business processes and workflow requirements. The goal of this review is to evaluate, at a detailed level, the organizational requirements for each functional capacity currently being managed within FDM, identify the opportunities available to the organization within FDM (based on the options available through the WIN 6 upgrade), and completing a comparisons between the organizational needs and solution opportunities to confirm if FDM is identified as a suitable solution to meet the longer term needs of HRFE. The results of this modular functional analysis will provide input into the definition of scope, approach and requirements associated with the upgrade of the modules as part of the FDM Functional Upgrade. If the decision is made to implement a solution outside of FDM, the functional review will provide the basis in support of the decision to implement an alternative solution and define initial project requirements.
Technology Roadmap Year 2	
Project	**Overview**

FDM Functional Upgrade (Inspection Module)	The FDM Functional Upgrade includes the activities required to upgrade the current implementation of FDM Inspection module to the WIN 6 version. The specific requirements to be completed as part of this upgrade effort will be defined through the FDM functional review project.
FDM Functional Upgrade (Incident and Investigations Modules)	The FDM Functional Upgrade includes the activities required to upgrade the current implementation of FDM Incident and Investigations modules to the WIN 6 version. The specific requirements to be completed as part of this upgrade effort will be defined through the FDM Functional Review project.
Personnel Accountability Management Review	Review of accountability management focused on assessment of opportunities to leverage technical solution(s) to support process. Includes Self Contained Breathing Apparatus (SCBA) accountability management.
Disaster Recovery & Business Continuity	The Disaster Recovery, Back Up, and Business Continuity project is focused on ensuring HRFE applications and information are protected from disaster and, in the event of a disaster, mission critical applications are restored in a timely fashion. This is specifically relevant for the core HRFE records management system (RMS), FDM, given the intention of the HRFE IT Roadmap to further enhance the information captured within FDM and the department's reliance on the tool to support their operations. Disaster recovery is focused on the development of contingent solutions to restore application functionality should a disaster impede the function of the primary data centre. Back up planning supports disaster recovery efforts by ensuring corporate knowledge is backed up on regular intervals and suitably handled (i.e. offsite) to ensure it can be restored in the event of a disaster or application failure. Business continuity defines the applications and functions required to maintain operations in the event of a disaster. Business continuity will focus on identifying mission critical applications in context of their requirement in order to support the provision of fire and emergency support services.
Technology Roadmap Year 3	
Project	**Overview**
Rostering	The HRFE Rostering project is focused on the implementation of a solution to manage scheduling and timekeeping processes. This would include the addition of self service and automated functions to improve accessibility and decrease manual efforts required to maintain schedule complexities.
Mobility (Phase 1)	Determine detailed HRFE requirements for mobility access, and the rollout of mobility tools (MDT, phone, tablet, laptop) technology to the appropriate staff and apparatus
Technology Roadmap Year 4	
Project	**Overview**
Non-Capital Assets	The Non-Capital Asset project will implement a solution to track supplies, equipment, preventative maintenance schedules, life span, etc for non capital assets
Mobility (Phase 2)	Determine detailed HRFE requirements for mobility access, and the rollout of mobility tools (MDT, phone, tablet, laptop) technology to the appropriate staff and apparatus

Technology Roadmap Year 5	
Project	**Overview**
Multi-Agency Accountability Management Opportunity Assessment	Implement tools and processes for improved tracking of personnel during an EMO emergency response.
Service Request Management	The HRFE Service Request Management project is focused on retiring the current solutions used in HRFE today to request services (i.e. work order solution, email based training requests, email based ECT support requests) and replacing with a centralized tool
BI Reporting	The BI Reporting project will implement business intelligence tools to improve reporting functionality/intelligence, specifically information that is stored within FDM and Versadex.



Station 4 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

Scale 1:40,000

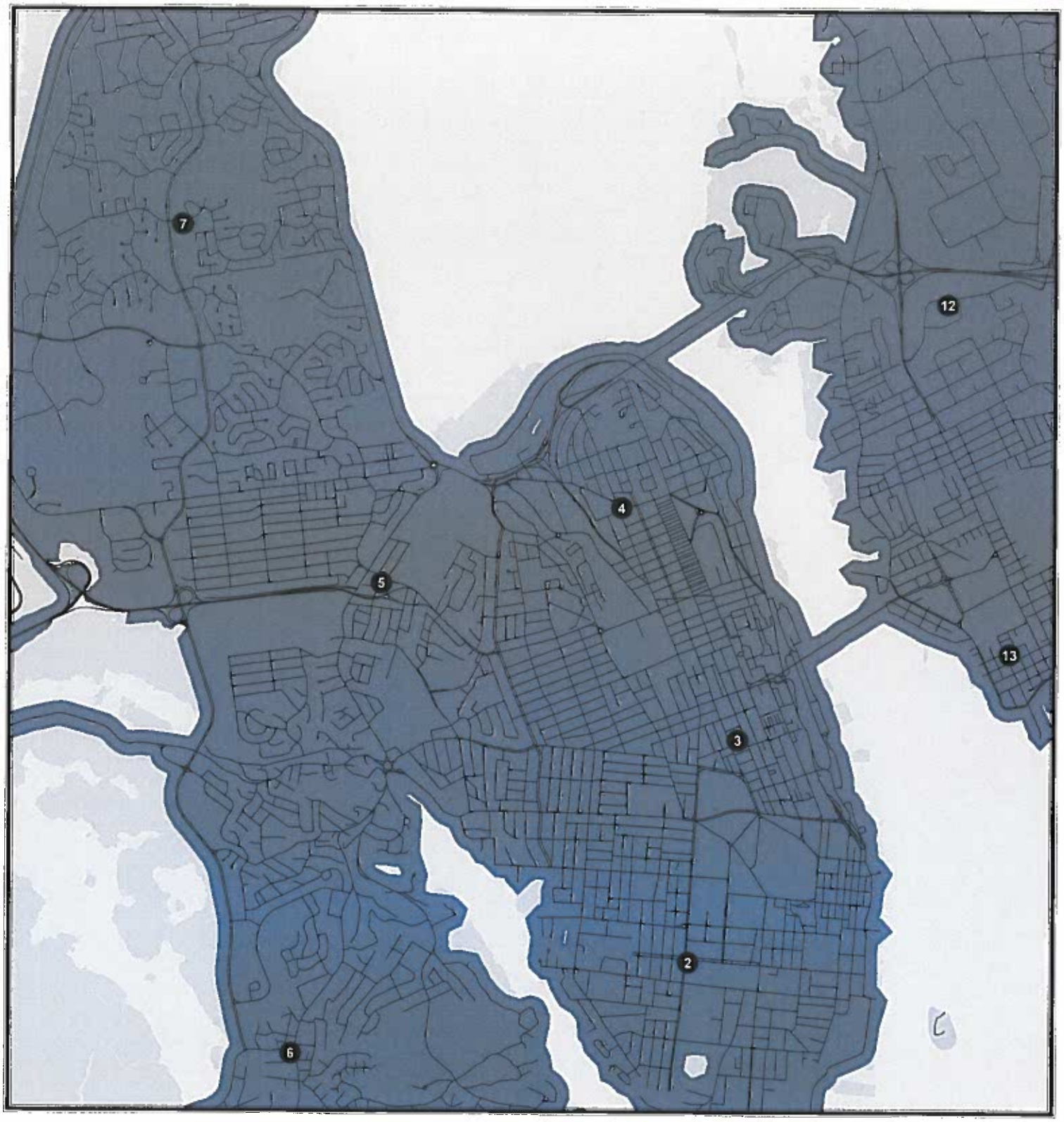
N W E S

Response Polygons

Station 4 - 5 Minute Coverage

Other Stations - 5 Minute Response

HALIFAX



No Station 4 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

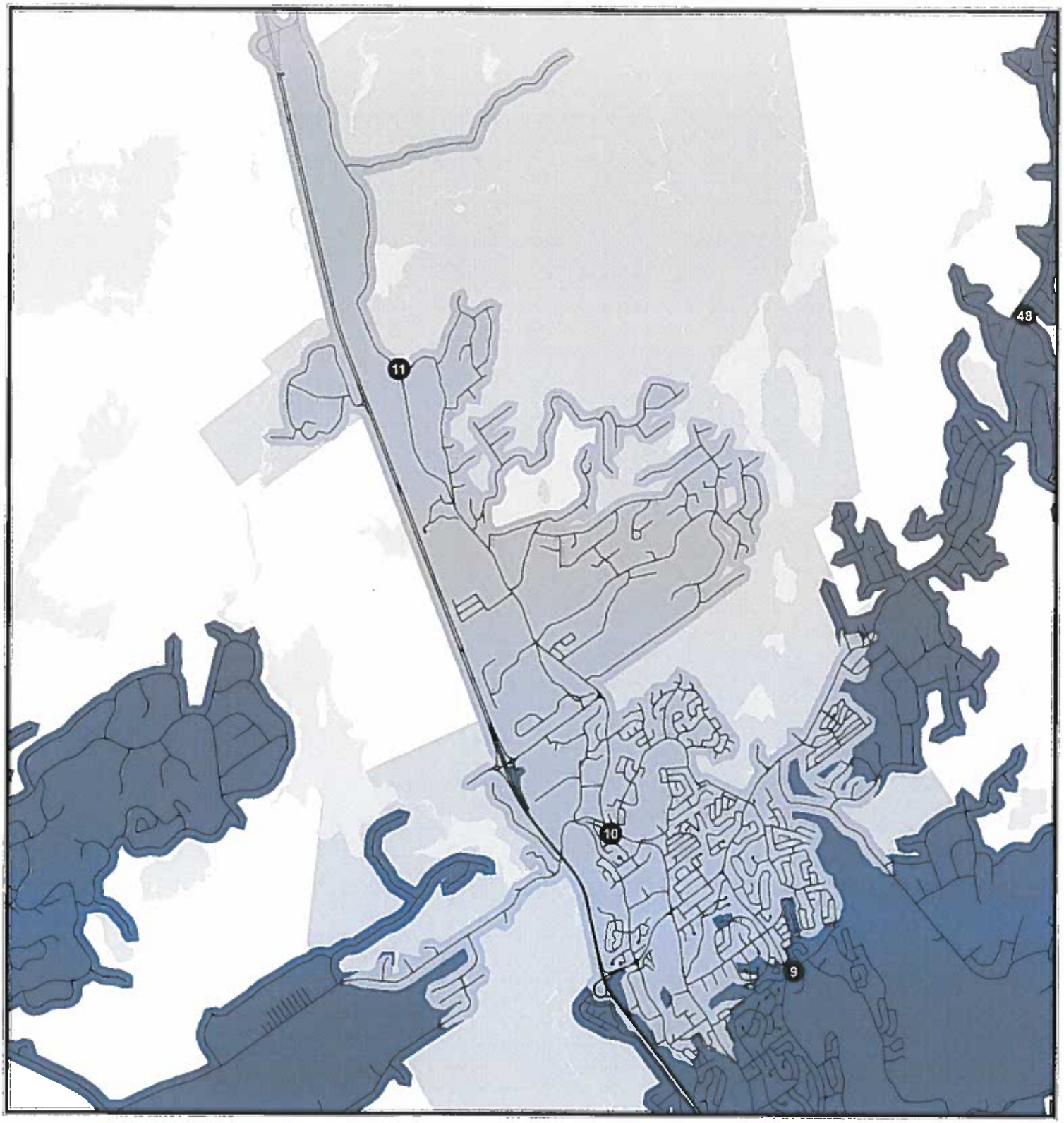
Kilometers

Scale 1:40,000

Response Polygons

5 Minute Response Coverage Without Station 4

HALIFAX



Station 11 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

Scale 1:60,000

Response Polygons

Station 11 - 10 Minute Coverage

Other Stations - 10 Minute Response

HALIFAX

No Station 11 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

Scale 1:60,000

Response Polygons

10 Minute Response Without Station 11

HALIFAX

Station 13 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

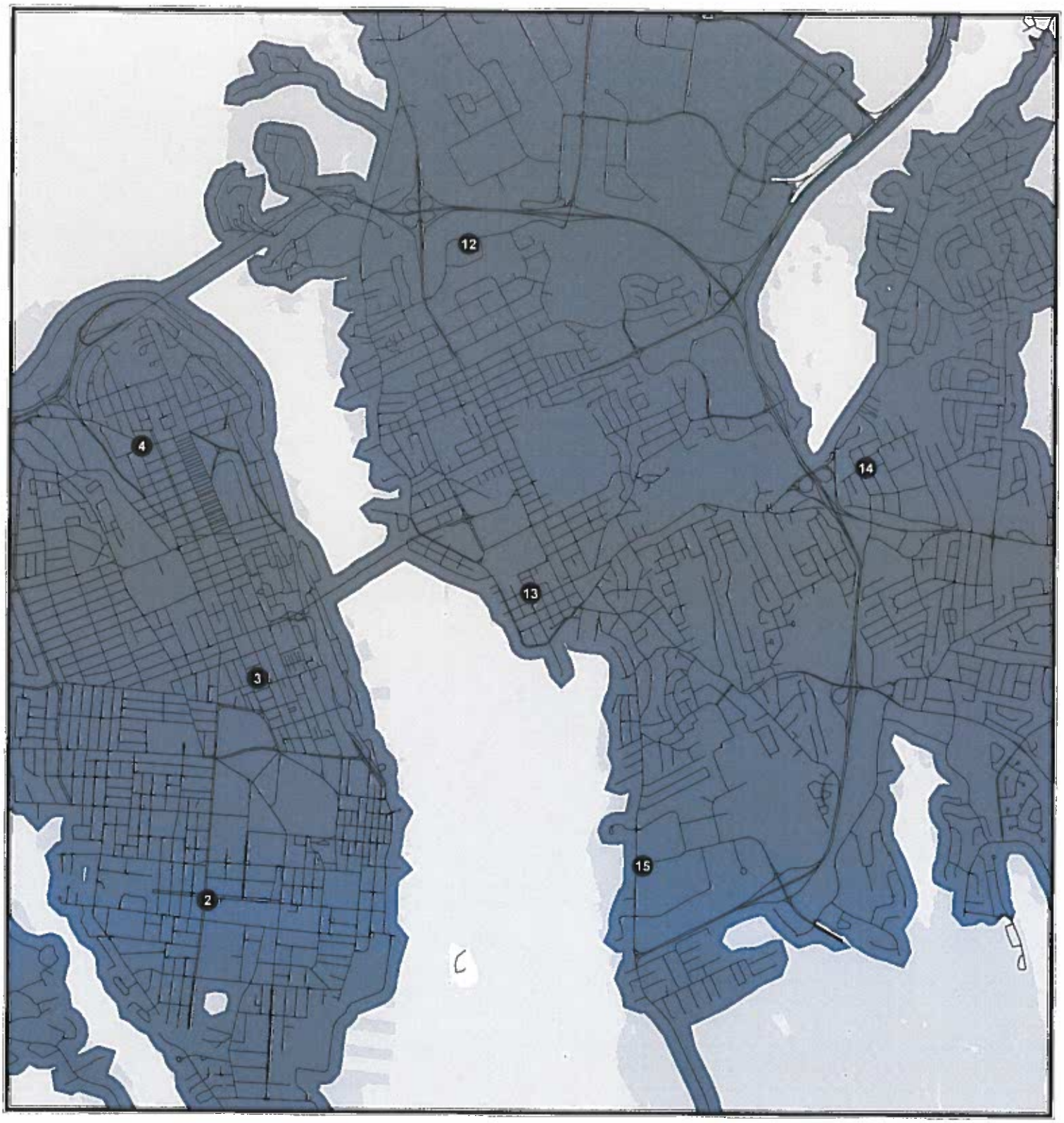
Scale 1:40,000

Response Polygons

Station 13 - 5 Minute Coverage

Other Stations - 5 Minute Response

HALIFAX



No Station 13 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

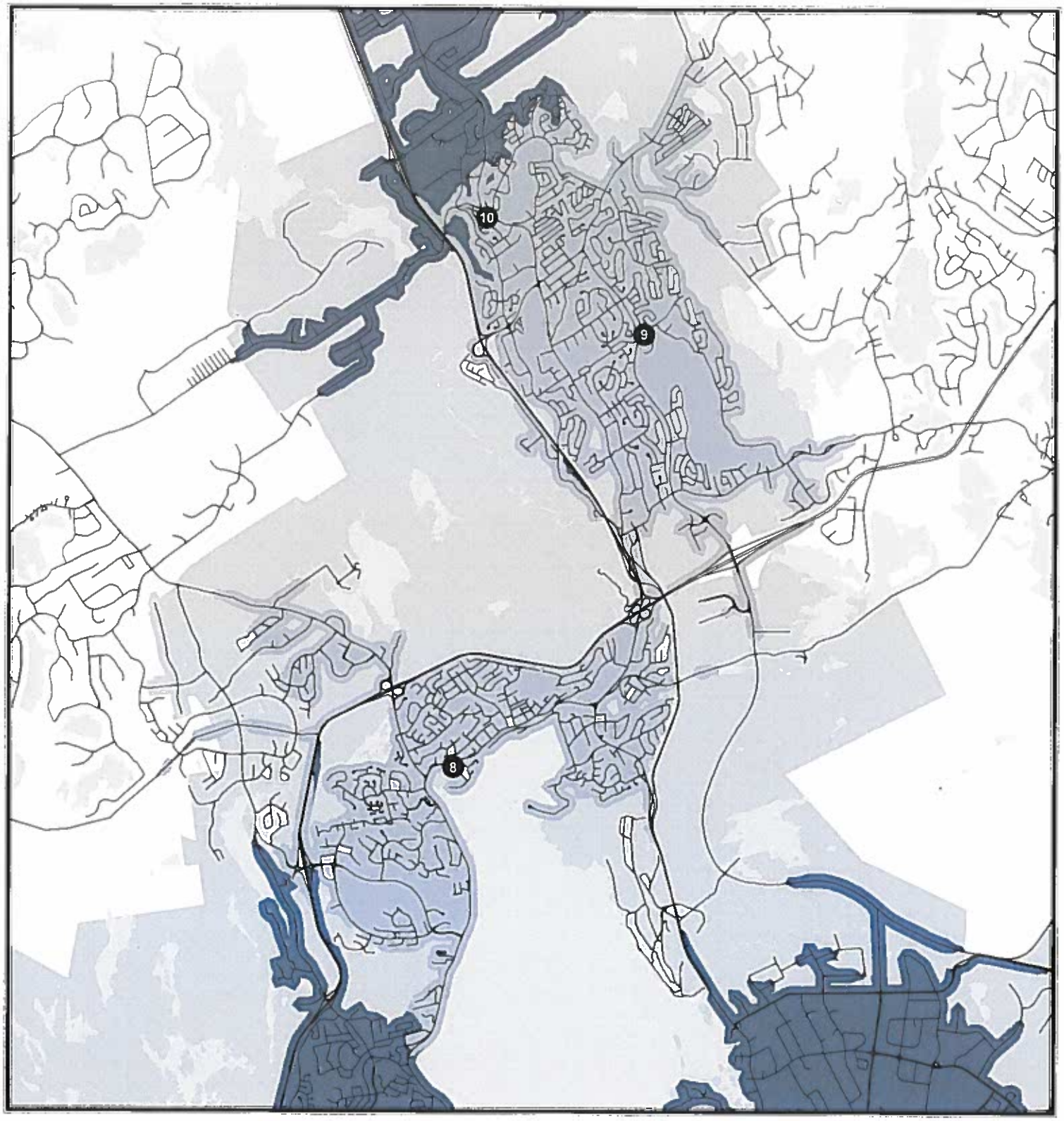
Scale 1:40,000

N W E S

Response Polygons

5 Minute Response - Without Station 13

HALIFAX



Station 8 & 9 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

Scale 1:70,000

N W E S

Response Polygons

Station 8 & 9 - 5 Minute Coverage

Other Stations - 5 Minute Response

HALIFAX

Newly Located Station 8 & 9 Response Coverage

Halifax Regional Fire and Emergency

0 0.5 1 2

Kilometers

Scale 1:70,000

Response Polygons

Proposed Station - 5 Minute Coverage

Other Stations - 5 Minute Response

HALIFAX