

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF OCTOBER 21, 2020

Item 14, Report No. 47, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on October 21, 2020.

14. THREE LINES OF DEFENCE: AN INTEGRATED APPROACH TO FIRE PROTECTION SERVICES

The Committee of the Whole recommends approval of the recommendation contained in the following report of the Acting Deputy City Manager, Community Services, dated October 14, 2020:

Recommendations

1. That this Report be received for information.

Committee of the Whole (2) Report

DATE: Wednesday, October 14, 2020

WARD(S): ALL

**TITLE: THREE LINES OF DEFENCE: AN INTEGRATED APPROACH TO
FIRE PROTECTION SERVICES**

FROM: Sunny Bains, Acting Deputy City Manager, Community Services

ACTION: FOR INFORMATION

Purpose

It is Vaughan Fire and Rescue Service's (VFRS) responsibility to enhance its understanding of the needs of its growing city. The fire service seeks forward-looking analytic techniques to create greater value for citizens and the community through data-driven decision-making. Quantifying the level of fire risk and response challenges present in communities, has been at the forefront. This report highlights the challenges and opportunities as they relate to improving the strategic optimization of the Provincial "three lines of defence", which include: (1) Public fire safety education; (2) Fire safety standards and enforcement; and (3) Emergency response in the City of Vaughan.

Report Highlights

- In May 2019, Council adopted the Master Fire Plan (MFP) 2018-2028 Implementation Strategy;
- Developed in consideration of the municipality's legislative requirements, adoption of the MFP Implementation Strategy outlines the priorities of a growing community as it relates to emergency response and public education;
- VFRS continuously pursues forward-looking analytic techniques to create greater value for citizens and the community through data-driven decision-making; and
- In order to continue its work in data analytics, VFRS has partnered with a number of internal and external bodies to gain additional emergency response insight.

Recommendations

1. That this Report be received for information.

Background

Legislated Responsibilities

Subsection 2.(1) of the *Fire Protection and Prevention Act* (FPPA) states:

“Every municipality shall:

- a. Establish a program in the municipality which must include public education with respect to fire safety and certain components of fire prevention; and
- b. Provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances.”

The intent of Section 2.(1) establishes municipal responsibility for fire protection and makes fire prevention and public education mandatory. It serves to clarify the role of municipalities in providing fire services and establish the minimum level of fire protection *without* imposing significant costs on municipalities.

The Three Lines of Defence

Within the Province of Ontario, the delivery of fire protection services is guided by the FPPA, including the strategic optimization of the three lines of defence, which include:

Line one: Public fire safety education;
Line two: Fire safety standards and enforcement; and
Line three: Emergency response.

We understand that if we enhance our first two lines of defence, there will be less reliance on the third line of defence. We have bolstered our fire prevention by including NFPA 1031 *Standard for Professional Qualifications for Fire Inspector and Plans Examiner* in our firefighter recruit curriculum, in 2018. The firefighters who achieve this qualification are able to contribute to our enhanced fire prevention inspection program, identifying fire code violations in existing buildings. Firefighter recruits also achieve NFPA 1035 *Standard on Fire and Life Safety Educator* and are able to assist with public education initiatives.

VFRS prides itself on being highly visible in the community and takes every opportunity to engage and educate the public on fire safety. Advocating for fire safety in our community is about taking action; and through innovative ideas and programming, VFRS strives to provide the highest service delivery everyday. As our first line of defence, there has been an increased focus on fire prevention outreach and proactive

fire safety education across all divisions, with the goal of preventing fires before they occur. VFRS has close to 40 fire prevention and public education programs, which includes Alarms for Life, After the Heat, Adopt-a-School, home escape planning, summer camps and library programs, distributing fire safety educational materials to residential owners and occupants, releasing public service announcements through media initiatives, and connecting with residents through social media. (See Attachment 1, Figure 1.0 and 2.0)

Using Geographic Information Systems (GIS) and Analytics in the Fire Service

Some of the most important tools for fighting fires include advanced protective gear and state-of-the-art suppression equipment. Given that we live in an age of growing communities, density issues, and complex urban and rural landscapes, one of the most valuable tools in firefighting is data.

Based in the City of Vaughan with a population of more than 335,000, Vaughan Fire and Rescue Service strives to operate as efficiently and effectively as possible, while maintaining what is most important: the safety of firefighters and those who live in, work in, and visit the city.

As a leader in the industry, it is VFRS's responsibility to enhance its understanding of the needs of its growing city. The service seeks forward-looking analytic techniques to create greater value for citizens and the community through data-driven decision-making.

Setting the Direction

There is an increasing burden upon decision makers, such as city managers and fire chiefs, to demonstrate the efficiency of their services, and in the case of fire departments, to validate their performance. A persistent issue has been quantifying the level of fire risk and response challenges present in communities while taking life safety and property protection into consideration. The difficulty facing many communities is determining what "optimal" protection means from the perspective of matching the limited resources of a community to its fire risk from a life safety and property protection standpoint.

In February 2018, VFRS hired Dillon Consulting to develop a Master Fire Plan (MFP) and city-wide risk assessment to set the direction of the service for the next ten years. The detailed plan contains maps, charts, and data; however, there were some gaps in using the data to fully understand the future development of the City and the resources required to keep pace. This indicated a need to develop tools that could properly determine and forecast operational capacity.

To address this issue, VFRS partnered with the Regional Municipality of York (York Region), York University, the University of Calabria, Universidad Autónoma del Estado de México, and the University of Genoa to undertake a project in innovation that would:

- Use shared data to create community profiles to understand risks within the City and the vulnerability index;
- Map a future state of the municipality and current resources to develop predictive analytics;
- Model and simulate VFRS's response to emergencies to gain an in-depth analysis of response times and other key performance indicators; and
- Use data-driven, evidence-based decision-making to determine fire station locations and allocation of resources.

Using Data for the Future

Quantitative fire risk analysis is critical to the decision-making process required for resource allocation in mitigating the effects of fire. VFRS worked with our municipal partner, York Region, to learn about the techniques and tools that could drive insight from data. The difficulty was; gaining access to the various data sources, evaluating its accuracy, and then making sense of how it all fit together into a model. Ultimately, an interactive decision support tool was created. This was achieved by looking at historical response-time data, building permits, population data, present road networks and planned road extensions. From there, travel-time models for each fire station were generated using different scenarios. The response coverage for each scenario factored in the number of properties and population that could be reached as well as other key criteria, including vulnerable populations and areas that have been identified as difficult to access. The tool has become a vital resource and has helped VFRS make decisions about station placement, resource allocation, and road network improvements.

Evaluating Performance through Simulation

For the second part of their project, VFRS partnered with York University's Advanced Disaster, Emergency and Rapid Response Simulation (ADERSIM) team in the School of Administrative Studies, in collaboration with the Modelling and Simulation Center - Laboratory of Enterprise Solutions (MSC-LES) of the University of Calabria. This part was two-fold: to conduct a statistical analysis of the VFRS incident database (covering records since January 2009), and to undertake modelling and simulation of VFRS's response to emergencies. VFRS sought to answer these questions:

- Is the current assignment of apparatus/crews operationally adequate and efficient?
- Is there a need to increase responding units at any station or to reallocate existing ones to other stations?
- Would it be appropriate for VFRS to consider building additional fire stations?

The modelling and simulation framework involved two different simulation models running on separate platforms: an Incident Generation Engine, which simulates the arrival to emergency incidents, and a Response Simulation Model, which is an agent-based simulation model that receives inputs from the first model.

The objective was to use modelling and simulation technology to evaluate the expected operating performance and efficiency of the VFRS system (stations, vehicles, and firefighting crews), taking into consideration the uncertainties of emergencies (e.g. time and geographic location of the event, type of incident, alarm processing, vehicle turnout time and on-scene time, among other relevant variables).

Gaining Insight from Data

VFRS worked with York University for 18 months on the modelling and simulation. The service provided historical data and operational procedures/protocols, as well as reviewed the simulation model and preliminary results with the researchers and offered input into required adjustments. In particular, VFRS validated some of the basic assumptions made in the model and the initial simulation results. This enabled the researchers to better identify statistics and operational parameters to build and refine the model as needed.

Interpreting and using data are necessary for fire service management. Decisions on a wide range of critical issues such as funding, apparatus purchases, station placement, and staffing, are validated using data obtained from a wide variety of sources. VFRS has developed predictive, spatial, and prescriptive methods to segregate, organize, and model the data to draw conclusions and identify patterns. We use math, statistics, and modelling along with creativity and skepticism to ask the right questions, explore data and distill it down to insights that support their most critical decisions while reducing costs, improving efficiencies, and mitigating risks.

The modelling and simulation tools were used to examine response performance. Results from the simulation have led VFRS to better evaluate community risks and consider improvements in its operations. The modelling has allowed VFRS to determine optimal unit availability and ideal station location and truck placement.

Award-Winning Work

The completed project, titled “Igniting Insight: Using Geographic Information Systems (GIS) and Analytics in the Fire Service,” received the bronze 2019 Innovative Management Award from the National Institute of Public Administration of Canada (IPAC). Launched in 1990, the Innovative Management Award recognizes government organizations that have shown exceptional innovations that address the wide variety of issues facing society today. It celebrates the ability of public servants across the country

to transform public administration, advance knowledge of management systems and structures, and improve transparency, accountability and responsiveness while increasing public participation.

The simulation model received international attention when it was presented at the 9th International Defence and Homeland Security Simulation Workshop, in Lisbon, Portugal, September 2019 in a presentation titled “Agent-Based Simulation of a Fire Department’s Response to Emergency Incidents.”

Commitment to Innovation

Public service agencies, such as fire departments, are capitalizing on the synthesis of big data in an effort to enhance its capabilities as well as protect its personnel and the citizens it serves. VFRS’s use of data and smart technology aligns with the City of Vaughan’s overall commitment to innovation and continuous improvement. In January 2016, Vaughan became the second municipality in Canada to be World Council on City Data ISO 37120 Platinum Certified and will be the first city to pilot the new Smart Cities standard ISO 37122.

Vaughan Fire and Rescue Service continues to elevate its reputation as a trusted and sought-after Smart City technology leader. VFRS uses data to identify the impacts of any resource allocation or infrastructure change on performance and response times – two factors that are paramount when responding to an emergency. Employing data analytics for fire prevention, suppression, and response allocation will help ensure the fire service is strong, resilient, and well-positioned for the future.

Since the Office of the Chief Information Officer (OCIO) hosted a Digital Day in early 2020, the focus of which was data and analytics, data has been receiving growing attention across the City, especially as a key component of evidence-based decision making. A number of data-related initiatives are underway that are aligned with this goal in mind, including the collaborative sharing of knowledge and experience with developing departments, such as VFRS. Data is being collected corporately that informs Corporate Performance Measures and Objectives & Key Results (OKRs).

The OCIO has initiated a small data services group that provides some data and analytics capabilities in general, and with VFRS in particular, both in the context of EOC Emergency Management during the COVID pandemic, and also collaborated operationally with VFRS directly, before, and during the pandemic.

The OCIO has helped VFRS develop an initial data and analytics capability and facilitated access to incident and medical data sourced from Firehouse.

Specifically, the OCIO has assisted VFRS in the following ways:

- Provided analytics software to VFRS staff;
- Provided guidance and support to VFRS staff for using analytics technology;
- Built a Firehouse-sourced data-mart and enabled access to VFRS staff;
- Built a performance metrics dashboard with the goal of hosting publicly on our web page; and
- Delivered EOC-focused analytics and reporting for senior EOC and VFRS staff particularly for incident and medical metrics during the COVID-19 pandemic.

VFRS has developed a dashboard which tracks performance metrics, key point indicators, and other strategic data points, which will simplify complex data sets and provide users with intelligence and actionable insights to help inform an evidence-based decision making processes on a regular basis.

Vaughan Fire and Rescue Service Operational Performance

Fire department operational performance is a function of three considerations: resource availability/reliability, department capability, and overall operational effectiveness.

Resource Availability/Reliability is the degree to which the resources are ready and available to respond. (Attachment 2, Figure 3.0)

Department Capability is the ability of the resources deployed to manage an incident.

Operational Effectiveness is the product of availability and capability. It is the outcome achieved by deployed resources or a measure of the ability to match resources deployed to the risk level to which they are responding.

Response time objectives are divided into several distinct segments. The call processing time is the elapsed time from when VFRS receives an emergency call at the communications centre until emergency response information begins to be transmitted to the responding fire station-truck(s). The turn-out time is the elapsed time from the start of the notification process until the responding truck is en route to scene of the emergency. Travel time is the elapsed time from when the first responding truck is en route to when that truck arrives at the incident location. The total response time is the elapsed time from when VFRS receives the emergency call to the arrival of the first truck at the incident location. The chart in Attachment 2, Figure 4.0 outlines the VFRS response times from 2016 to 2019; and Figure 5.0 is the map of the station location.

Our focus has turned to identifying the barriers and challenges to improving response times. Performance metrics are intended to assess department's response availability, optimize its capability to arrive and mitigate an incident, and evaluate effectiveness of on-scene operational performance. We seek optimal performance in every deployment thereby leading to positive outcomes for firefighters, civilians, and any property/environment involved. Performance measures can be used to learn, improve,

and optimize fire department operations. Consistent data, realistic response goals, and optimizing staffing to maximize efficiency, are all critical factors we consider.

The development of the MFP and city-wide risk assessment is consistent with the City's vision that includes strategic initiatives focused on organizational excellence, staff excellence, and service excellence. Incorporating a risk assessment, a resource deployment overview and an analysis of current performance, the strategic plan outlines the resources needed to address the service demands of the community as the City continues to develop over the next ten years.

The MFP outlines three major challenges to response times, including road networks, congestion, and fire station placement. VFRS is committed to improvements in our response performance and are continually researching, analyzing, building and integrating robust systems and processes to support routine and emergency operations.

Pre-emptive Technology

Traffic congestion is a problem and is increasing, particularly in an urban area impacting the travel time of emergency response vehicles. Factors such as existing road networks with increasing congestion are impacting the response times of VFRS.

During an emergency, the primary goal is for the emergency response units to arrive as quickly and as safely as possible. Utilizing an adaptive pre-emptive system allows the fire apparatus to control signalized intersections remotely so they can request a green light well in advance of the emergency vehicle approaching the intersection. This clears the intersection prior to its arrival so the fire truck can move through and avoid the more dangerous and chaotic approach relying on honking horns and blazing sirens to urge drivers to move out of the way.

In 2019, VFRS partnered with York Region on a pilot program that upgrades pre-emptive traffic technology from infrared to GPS technology that will send the signal and be received in a radius, rather than line of sight only. This allows traffic lights to remain green, in emergency situations, until the emergency vehicle has passed the intersection. The system not only protects firefighters, but also the people in the community by clearing traffic for emergency vehicles and moving motorists through congested routes. We are currently expanding the project to install the pre-emptive technology on all front run apparatus by 2021. Pre-emptive systems can decrease response times and provide safer travel for emergency vehicles.

Emergency Services as Critical Inputs for Infrastructure Prioritization

VFRS is working collaboratively with the Regional Municipality of York's Transportation Services, adding emergency response time as a critical input for the prioritization of projects within the 10-year Roads and Transit Capital Construction Program budget.

Adding response time as a critical input and selection criteria for infrastructure prioritization will help address road networks issues.

Investment in Infrastructure

In the past, a common solution for decreasing response time was to increase the number of fire stations and strategically locate them across the City. This entails building new stations, hiring more firefighters, and purchasing new equipment. Over the past decade, VFRS has spent approximately \$27 million on capital infrastructure related to new builds to ensure public safety in the City of Vaughan and hired 90 new staff. In 2020, land for station 7-12 and 7-11 will be secured. Over the next six years, VFRS will build station 7-12 and 7-11 in 2023 and 2026 respectively and relocate one fire station, with an estimated projected cost of \$28 million for the three projects. Additional staff will need to be hired for the new fire stations, increasing current operation costs, which is funded 98% through taxation. With the build of fire station 7-12, the data scientist has modelled an improvement in overall response times of 5%, at a cost of \$8M for the infrastructure build in addition to approximately \$120,000 for the operating costs of the new fire station (annually) and close to \$2.8M increase in labour cost annually. While the investment in infrastructure and new hires are effective in improving response times, as stated earlier; data, GIS and technology solutions need to be considered and employed in improving efficiencies as well.

Citizen Satisfaction

The 2018 Citizen Satisfaction Survey is a proven tool that tells us what citizens think of the services we provide. This survey shows that a remarkable 97 per cent of citizens are happy with their quality of life here in Vaughan and give high satisfaction ratings for everything from libraries and recreation to waste collection and value for taxpayers' hard-earned dollars. Vaughan Fire and Rescue Service enjoys an unprecedented 100 per cent satisfaction rating.

Previous Reports/Authority

[Vaughan Fire and Rescue Service 2018 Annual Report](#)

[Vaughan Fire and Rescue Service 2019 Annual Report](#)

[Item 2, Report 7 – FAA, May 14, 2019 – Master Fire Plan 2018 – 28 Implementation Strategy](#)

Analysis and Options

The Provincial “three lines of defence” model (public fire safety education; fire safety standards and enforcement; emergency response) has proven to be an effective strategy in reducing the number of fire related fatalities and injuries and reducing the overall impacts of fire while enhancing the safety of firefighters.

The options and recommendations presented within the Master Fire Plan are intended to optimize the use of this model in providing the most effective and efficient level of fire protection services, with the most value to the community.

Vaughan Fire and Rescue Service continues to pursue forward-looking analytic techniques to create greater value for citizens and the community through data-driven decision-making with the use of geographic information systems and analytics, gaining insight from data, the use of pre-emptive technology, evaluating performance through simulations and its commitment to innovation, while complying with legislative requirements,

Financial Impact

There is no financial impact associated with this report.

The Acting Deputy City Manager of Community Services and the Chief Financial Officer have reviewed the report and agreed with the financial impact information.

Broader Regional Impacts/Considerations

There are no regional impacts.

Conclusion

The ability to meet the demands of a rapidly growing city while responding to various incidents is a testament to our commitment to ensuring that every citizen receives the highest quality of service.

For more information, please contact: Fire Chief Deryn Rizzi (905-832-8585 ext. 6301)

Attachments

1. VFRS – Fire Prevention & Public Education
 - Figure 1.0: 2019 Fire Prevention Initiatives
 - Figure 2.0: Description of Current Public Education Initiatives
2. VFRS – Operational Performance
 - Figure 3.0: 2019 Unit Utilization
 - Figure 4.0: 2016-2019 Response Time Data by District
 - Figure 5.0: 2020 Fire Station District Map

Prepared by

Deryn Rizzi, Fire Chief, extension 6301

Reviewed by



Sunny Bains, Acting Deputy
City Manager, Community Services



Jim Harnum, City Manager

VFRS – Fire Prevention & Public Education

2019 Fire Prevention Initiatives (Figure 1.0)



Description of Current Public Education Initiatives (Figure 2.0)

Activity / Program Name	Description
Sleepover with Sparky	Vaughan Fire and Rescue Service (VFRS) Inspectors have visited with more than 3,297 grade one students each year in 67 participating elementary schools. They have partnered with teachers, provided fire safety education, and provided the students with a stuffed toy fire dog named Sparky (donated through community partnerships) that they take turns bringing home for a night. With their guardian's help, the children complete a safety checklist (i.e. matches, smoke alarms, escape plan, cooking, etc.). The checklist is sent back to the inspector for statistics and recordkeeping to monitor the success of the program.
VIP (Value Influence Peers)	Program delivered to grade six students in schools by York Regional Police, with a VFRS Inspector providing a fire safety teaching component.
Junior Firefighters	VFRS Inspectors partner with other fire inspectors and public education officers throughout York Region and deliver the Junior Firefighters program each year. After grade three children submit a fire safety poster (escape planning, smoke alarms, hazards, etc.), winners are selected from each

Activity / Program Name	Description
	municipality and they compete in a fire safety sporting/educational event at one of the municipalities (rotated annually).
Seniors' Symposium	An annual event in partnership with BASSIC (Bringing an Awareness of Senior Safety Issues to the Community), York Region Community and Health Services, York Regional Police, surrounding municipal fire services, and the provincial/federal government. A presentation, approximately one-hour long, is delivered on home fire safety.
Fire Safety Request Presentations	Request may come from property managers, schools, and institutions. Presentations are geared to suit the audience (children, seniors, families, etc.).
TAPP-C	Arson Prevention Program delivered to children on request.
GO Transit Fire Safety Event	In partnership with GO Transit, VFRS provides fire safety messages, fire safety pamphlets, and food/ drinks to morning commuters at the Rutherford or Maple Go Station.
Vaughan's Winterfest	An annual City event held in February at the Vellore Village Community Centre. A fire prevention booth is set-up and education on smoke alarms, CO alarms, escape planning, etc. is delivered. Fire safety pamphlets are handed out.
Maple Lions Club – Annual Pancake Festival	Held in April, a booth is set-up similar to what is done at Vaughan's Winterfest. This event attracts a few hundred people (primarily families with children and seniors).
Fire Prevention Week Community Event	National Fire Prevention Week is observed in Canada and the United States, during the week (from Sunday to Saturday) in which October 9 falls. Fire Prevention themes are provided by the National Fire Protection Association and Vaughan Fire and Rescue Service delivers education to the community through different venues which change year to year. Previous years have included hosting events at local Community Centres with partners from YRP, EMS, TSSA, ESA, Power Stream, Lions Club, Go Transit. Information areas include: carbon monoxide alarms, dialing 911, inspections, kitchen safety, fire

Activity / Program Name	Description
	investigations, dress-the-firefighter, fire trucks, and general fire safety trivia.
Fire Prevention Week Story Time	A VFRS Inspector visits all eight public libraries during Fire Prevention Week and reads a story to children with guardian(s) present. The Inspector talks and answers questions about fire safety. This is done in partnership with Vaughan Public Libraries who advertise in library magazines.
VFRS Website Information	Information on home sprinklers, videos on home escape planning, information on matches/lighters, fireworks safety, extinguishers, smoke alarms, and carbon monoxide alarms.
Fire Truck Visits	Firefighters visit schools, camps, and events on request and provide truck tours and general fire safety information.
After the Heat	Firefighters conduct the Alarm for Life program immediately after a house fire and deliver the program to 40 surrounding houses.
Fire Extinguisher Training	Provided on a request basis.
Fire Safety Presentations for High School Students	Presentations delivered to five high schools, to co-op and home economic students, regarding cooking safety, home fire safety, and fire safety in the workplace.
Home Alone Workshop with Vaughan Firefighters	A four-hour class provided to children from ages 11 to 14 at a community centre. Children learn about home safety, including how to answer the phone, when to call 9-1-1, and how to make simple meals without using the stove and/or oven. An extra hour dedicated to home fire safety, taught by VFRS Inspectors. Topics include smoke alarms, fire escape planning, fire hazards, and a presentation on cooking safety.
School Tour City Hall	Presentation about the different career opportunities within the fire service and show a short video.

Activity / Program Name	Description
Junior Firefighter Workshop	A two-hour basic training workshop for children ages 6 to 9 provided by fire inspectors and firefighters. Children compete (as a team) in five fire safety activities: putting out a stove top fire; using a fire hose; tying firefighter ropes and knots; inspecting a fire truck; and, playing a game of family feud. Workshop includes a showing of 'Timon & Pumbaa: Safety Smart', a visit from Sparky the toy fire dog, and a firefighter helmet, colouring book and certificate from Vaughan Fire and Rescue Service.
Fire Safety Workshop: Parent & Child	Fire safety education classes for children ages 4 to 6 and delivered in three 1 1/2-hour sessions at local community centers by VFRS fire inspectors and firefighters. Parent-assisted, fire prevention activities include: making a home fire escape plan with a Sparky toy fire dog; putting out a stove top fire and making a paper plate smoke alarm; tying firefighter ropes and knots, and touring a fire truck. Workshops include a showing of 'Franklin & The Fire', a visit from Sparky the toy fire dog, and a firefighter helmet, colouring book and certificate from Vaughan Fire and Rescue Service.
Shrove Tuesday	VFRS Chief Officers and fire inspectors interact with parents and students and promote fire safety while serving pancakes at St. Cecilia Catholic Elementary School.
High School Co-op Program	VFRS visit various high schools throughout the Vaughan region and talk about safety in the workplace, kitchen safety, fire extinguishers, sprinklers, fire alarms. This is done to prevent injuries in the workplace. Approximately 10 to 20 presentations per school year delivered to 15 to 20 students at a time.
Fireworks Training	Presentation to all the vendors that are selling fireworks and to keep them current with the rules and regulations of selling fireworks and to make sure that they comply with the Ontario Fire Code.
Senior Calendar	BASSIC (Bringing Awareness of Senior Safety Issues to the Community) is in collaboration with the fire service, police and other non-profit organizations who develop a calendar with safety messages for seniors. They also conduct free seminars on seniors' issues.

Activity / Program Name	Description
Senior Buildings	VFRS visits various senior's buildings to conduct presentations regarding fire safety. Typically, presentations are 2 to 2.5 hours long.
United Way	Fire Truck Pull, supporting the City in raising funds for United Way. Team of City employees compete to pull a fire truck a short distance in the fastest time.
Take Your Kid to Work Day	This is a national program organized by The Learning Partnership to give grade nine students a one-day real-life experience in a work environment.
Chief's Breakfast	A breakfast for all City of Vaughan employees, and Vaughan Fire, where donations for the Vaughan Food Bank are collected and donated.
Santa Claus Parade	Supporting the community by marching in the parade each year.
Newcomers Bus Tour	This is a program aimed at assisting those new to the community by providing a way to discover all of the services offered in Vaughan. A fire inspector talks about smoke alarms, CO alarms, cooking safety, and calling 911.
Autism Awareness	VFRS supports local schools with community classes, by interacting with students with special needs. Teaching fire safety.
Holiday Gala	VFRS hosts a meal for families in need. VFRS interacts with the families and discusses fire safety during the holiday season.
Recent Immigrants	A VFRS Inspector enters ESL classes for adults and delivers a 20-minute to 45-minute presentation on smoke alarms, CO alarms, escape planning, kitchens safety, and calling 911. This is delivered approximately 3 to 4 times a year and classes range from 10 to 15 students at a time.
Youth Firefighter Camp	A five-day basic fire and rescue training session for youth ages 16 to 18. Up to 20 campers spend the week at the Vaughan Fire and Rescue Training Centre, experiencing a day in the life of the emergency rescue team. They extinguish a live fire with a

Activity / Program Name	Description
	fire extinguisher, operate a pump, climb an aerial ladder, break down a door, and observe an auto extraction demonstration. Certificates are awarded at the end of the session.
Junior Firefighter Camp	One 4-day and one 5-day basic fire and rescue training session for children ages 12 to 14. Up to 20 Junior firefighters per camp visit a local Vaughan fire hall and the Vaughan Fire and Rescue Training Centre to experience a day in the life of the emergency rescue team. They extinguish a live fire with a fire extinguisher, learn how to escape a confined space, break down a door, observe an auto extraction demonstration, and prepare for a firefighter physical exam.
Vulnerable Persons Registry	Vaughan Fire and Rescue Service offers special assistance to residents with a disability when an emergency occurs. Submitting information through the Vulnerable Persons Registry ensures that respondents are better equipped to aid in the event of an emergency.
March Break at IKEA	Vaughan Firefighters and Fire Inspectors host a two-day fire safety event at IKEA for over 10,000 people. Visitors of all ages meet firefighters and take a tour of a firetruck. Inside the store, an interactive education zone is set up that includes a spinning wheel of fire safety questions, fire safety prizes, and an area where children are read “No Dragons for Tea”. Sparky the robot dog attends, and a 911 simulator provides children an opportunity to practice making emergency phone calls. Encouraging everyone to spread their own fire safety messages, attendees dress up as firefighters and have their picture taken with members of our team in a photography and social media area. In another area, a white blanket is waved over the children to simulate smoke while they practice the “stay low and go” principle by crawling under the blanket to safety, all while dressed up as junior firefighters. Children are provided with activity booklets and plastic fire helmets to take home.
Coffee with a Firefighter	McDonald’s provides free coffee to customers and sets up a table where firefighters, fire inspectors, and senior officers meet with the public to discuss fire safety and firefighting. The event originated in Vaughan and has since been expanded to a province-wide campaign with Office of the Ontario Fire Marshal.

Activity / Program Name	Description
Alarm for Life	Firefighters are assigned up to 3,500 homes per year and go door-to-door and offer to check smoke alarms and CO alarms. If smoke alarms are malfunctioning, missing, or have a low battery, firefighters provide temporary smoke alarm(s) and/or batteries as may be required. The program may also be offered when firefighters are called to a house emergency, or in response to a non-emergency request. The residents are educated on how to maintain their smoke/CO alarms and firefighters answer questions on other fire safety practices, such as: home escape planning, cooking safety, electrical fire safety, and how to address other fire hazards around the home.

Note: These fire prevention and public education programs vary from year to year, depending on resource availability and budget approvals.

Attachment 2

VFRS – Operational Performance

2019 Unit Utilization (Figure 3.0)

UNIT UTILIZATION													
E - Engine LA - Ladder R - Rescue PL - Platform													
FIRE APPARATUS	E711	LA716	E726	R729	E731	PL737	E756	R759	E776	E771	E786	E791	E710
			E721			PL736	E751		E761		E781	E796	
Available	83.5%	87.3%	81.2%	83.2%	82.7%	87.4%	89.8%	86.2%	91.9%	83%	90.5%	88.2%	87.5%
On Air - Available	8.4%	7.5%	10.9%	11.0%	8.9%	7.4%	5.2%	8.2%	4.6%	9.0%	4.3%	5.9%	7.8%
Incident	6.5%	3.6%	6.2%	4.2%	6.8%	3.6%	3.8%	3.9%	2.6%	6.6%	2.4%	4.7%	3.4%
Training/Mechanical	1.6%	1.6%	1.7%	1.5%	1.6%	1.6%	1.2%	1.6%	0.8%	1.4%	2.8%	1.2%	1.3%

AVAILABLE: The percentage of time the fire apparatus is available to respond to an emergency.

ON AIR - AVAILABLE: The percentage of time the fire apparatus is driving in the district, but available to respond to an emergency.

INCIDENT: The percentage of time the fire apparatus is committed at an emergency incident and is not available to respond to a different emergency.

TRAINING/MECHANICAL: The percentage of time the fire apparatus is taken out of service for focused training evolutions or being serviced for mechanical issues.

2016-2019 Response Time Data by District (Figure 4.0)

	Call Processing Times (Answered to Notified)			
Year	2016	2017	2018	2019
Total	01:12	01:11	01:09	01:06

	Turnout Times (Notified to En route)			
District	2016	2017	2018	2019
7-1	01:43	01:30	01:23	01:22
7-2	01:52	01:32	01:23	01:25
7-3	01:38	01:22	01:17	01:16
7-5	01:37	01:20	01:21	01:20
7-6	01:37	01:20	01:22	01:22
7-7	01:33	01:19	01:19	01:24
7-8	01:43	01:30	01:27	01:22
7-9	01:41	01:20	01:10	01:19
7-10	01:44	01:24	01:13	01:19
Total	01:41	01:25	01:20	01:22

	Travel Times (En route to Arrival)			
District	2016	2017	2018	2019
7-1	05:14	05:02	05:18	05:21
7-2	06:12	06:11	06:26	06:39
7-3	06:56	06:56	06:47	07:05
7-5	06:04	06:15	06:15	06:38
7-6	06:32	06:16	06:35	06:24
7-7	07:07	07:09	07:02	06:54
7-8	06:22	06:29	06:51	06:52
7-9	08:30*	08:25*	09:31*	09:19*
7-10	07:01	06:50	06:55	06:54
Total	06:38	06:36	06:48	06:53

	Total Response (Answered to Arrival)			
District	2016	2017	2018	2019
7-1	07:10	07:00	07:08	07:03
7-2	08:13	08:00	08:16	08:18
7-3	08:44	08:42	08:21	08:51
7-5	08:06	07:59	08:04	08:32
7-6	08:43	08:15	08:25	08:02
7-7	09:09	09:02	08:49	08:48
7-8	08:22	08:23	08:39	08:33
7-9	10:22*	10:19*	11:07*	11:05*
7-10	08:53	08:41	08:31	08:20
Total	08:37	08:26	08:31	08:35

* Note: With the opening of Station 7-4 in January 2020, the response times for Station 7-9 have been reduced for 2020.

2020 Fire Station District Map (Figure 5.0)

Note: Prior to January 2020, district 7-9 encompassed the entire area of 7-9 and the new district 7-4. The map below reflects the current district boundaries. In 2022/2023 the districts will again be adjusted with the addition of district 7-12, making all districts smaller in size.

