

**Report to
Rapport au:**

**Community and Protective Services Committee
Comité des services communautaires et de protection
18 June 2015 / 18 juin 2015**

**and Council
et au Conseil
24 June 2015 / 24 juin 2015**

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**Submitted by
Soumis par:**

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Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE **File Number:** ACS2015-COS-EPS-0021

SUBJECT: Ottawa Fire Services 2015 Station Location Study

OBJET: Étude sur l'emplacement des casernes de pompiers de 2015 – Service des incendies d'Ottawa

REPORT RECOMMENDATIONS

That the Community and Protective Services Committee Recommend Council:

1. Approve the Standards of Cover, attached as Document 1 and as outlined in this report, that sets out response times standards based on community risks that were developed as part of the Commission on Fire Accreditation International (CFAI) accreditation process;
2. Approve building a station in Kanata North as outlined in this report; and
3. Approve building a station on Cyrville Road in order to consolidate Fire Station 36 (900 Industrial Avenue) and Fire Station 55 (1700 Blair Road) as outlined in this report.

RECOMMANDATIONS DU RAPPORT

Que le Comité des services communautaires et de protection recommande au Conseil :

1. d'approuver les normes de protection, ci-jointes à titre de document 1 et telles qu'elles sont décrites dans le présent rapport, qui établissent les délais d'intervention attendus en fonction de la classification de risques élaborée dans le cadre du processus d'agrément de la Commission on Fire Accreditation International (CFAI);
2. d'approuver la construction d'une caserne de pompiers à Kanata-Nord, comme le précise le présent rapport;
3. d'approuver la construction d'une caserne de pompiers sur le chemin Cyrville afin de fusionner les casernes 36 (900, avenue Industrial) et 55 (1700, chemin Blair), comme le précise le présent rapport.

EXECUTIVE SUMMARY

ASSUMPTION AND ANALYSIS

Since the completion of the 2008 Station Location Study, there has been an evolution in the industry as to how fire services deploy their assets. More specifically, a new best practice is for fire services to have deployment models that consider the specific risks of a community. Several industry leading organizations have endorsed this risk-based deployment model as the most effective way to protect lives and property. Such organizations include: the Ontario Fire Marshal (OFM), the Metro Fire Chiefs Association and the Commission on Fire Accreditation International (CFAI).

In 2014, Ottawa Fire Services (OFS) received Accredited Agency status with the CFAI. As part of the accreditation process OFS has developed comprehensive operational benchmarks and standards of performance that support a risk-based model.

The Service then applied the new benchmarks and standards of performance across the City of Ottawa as part of its new Station Location Study. The findings of the 2015 Station Location Study were as follows:

1. Re-confirmed the need for a fire station in Orleans South due to residential growth in the area. The Orleans South station was previously approved in the 2008 Station Location Study and is scheduled to be built in 2017.
2. The new study identified areas in Kanata North that will eventually not meet the new response standards as construction in the area continues to develop. OFS is recommending the relocation of Station 45 (1040 Riddell) to help offset the costs and staffing requirement for the new growth station. The proposed relocation would not adversely impact public safety or service.
3. OFS has identified an efficiency strategy to offset the staffing requirement for the Orleans South fire station planned for 2017. The Service determined that Fire Station 36 (900 Industrial Avenue) and Fire Station 55 (1700 Blair Road) could be consolidated into one station on Cyrville Road without adversely impacting public safety or the Service's ability to meet its response standards. Both Station 36 and 55 are staffed with 20 FTEs for a total of 40 FTEs. The proposed station to be built in the Cyrville/Innes Road corridor would require 20 FTEs and the other 20 FTEs would offset the staffing requirement for the Orleans South station.

The recommendations being brought forward will not adversely impact public safety or the Service's ability to meet its response standards and will create a sustainable deployment model that will meet the needs of all communities for the next 10 years provided that the urban boundary remains the same.

FINANCIAL IMPLICATIONS

The Orleans South station, capital project 903142, was approved in 2010 and has been accruing funds for the purchase of the land. To date, the station has accrued \$1,800,000, as such a capital budget request of \$5,200,000 for the design/construction of the facility and equipment will be included in the 2016 Draft Capital Budget. The project would be funded by development charges (90%) and property taxes (10%). The station would also require \$70,000 in operating for facility costs and this pressure will be identified in the 2017 Draft Operating Budget.

The relocation of Station 45 in Kanata North would require capital funding of \$5,500,000 (2015 dollars), which does not include a budget for land acquisition and is based on the most recently built stations: Station 46 (34 Iber Road) in 2011 and Station 47 (3559 Greenbank Road) in 2012. The City intends on recovering the eligible share of the growth-related capital project cost(s) through the imposition of development charges in the future. The next Development Charge Study is scheduled for 2019 for inclusion in the 2020 Draft Capital Budget. The station would be funded by development charges (90%) and property taxes (10%). The operating impact would be 10 FTEs and facility costs, represented by a total of \$1,600,000 (2015 dollars), which would be identified in the 2021 Draft Operating Budget.

The efficiency strategy would require capital funding of \$5,500,000 (2015 dollars) for the construction of the new station, which would be 100% property tax funded since the station would be inside the Greenbelt and therefore exempt from development charges. However, OFS has identified various funding strategies within its capital budget to ensure there is no additional funding required outside of its normal capital base requirement. Such strategies include deferring a portion of renewal items by enhancing preventative maintenance programs of certain equipment/assets. The operating impact for the new Cyrville/Innes station would be \$70,000 (2015 dollars) for facility costs and this pressure would be identified in the 2017 Draft Operating Budget. There would be no additional FTEs or vehicles required as staffing, vehicles and equipment would be transferred from Station 55 (Blair Road).

CONSULTATION

To inform the public of the implications associated with this report, Ottawa Fire Services conducted two public information sessions. The public information sessions were promoted through a variety of communication channels, including the City of Ottawa website, social media and local print media.

BACKGROUND

In 2008, Council approved the Ottawa Fire Services (OFS) Station Location Study (ACS2008-CPS-OFS-0001). The study recommended that three (3) new fire stations be built in areas of growth to ensure that OFS would continue to meet its response time standards. To date, two of these stations have been built; one in Stittsville and the other in Barrhaven. The third station, Orleans South, has been accruing funds and is scheduled to be built in 2017.

Since the completion of the 2008 Station Location Study, there has been an evolution in the industry as to how fire services deploy their assets. More specifically, a new best

practice is for fire services to have deployment models that consider the specific risks of a community. Several industry leading organizations have endorsed the risk-based deployment model as the most effective way to protect lives and property. Such organizations include: the Ontario Fire Marshal (OFM), the Metro Fire Chiefs Association and the Commission on Fire Accreditation International (CFAI).

Under the previous standards, OFS response times were evaluated on how quickly the first four (4) firefighters arrived on scene. Whereas under the new standards, response times are based on the number of firefighters required based on the level of risk. This is commonly referred to as an Effective Response Force (ERF).

Table 1 below provides a snapshot of the previous standards:

Table 1 - Previous Standards

Population Density	Total Response Time	Firefighters on scene	OFM Guideline
Urban	5:00	4	10 Firefighters in 10 Minutes
Suburban	7:00		
Rural	14:00		

In November 2010, the OFM rescinded its '10 Firefighters in 10 Minutes' guideline and replaced them with a new guideline entitled *Operational Planning: An Official Guide to Matching Resource Deployment and Risk*. The new guideline was created to assist Ontario fire services in aligning with industry best practice by adopting a risk-based deployment model though does not specifically set out response times. Currently, OFS is able to meet the new guideline requirements based on its existing compliment of resources.

Table 2 below provides an overview of the new OFM Guidelines:

Table 2 - New OFM Guidelines

Risk Rating	OFM Guideline Resource Requirement
Low	4 - 13
Moderate 1	
Moderate 2	16 - 43
High	36 - 83
Special	49 - 108

In 2012, OFS began the process to become an accredited agency with the CFAI. The CFAI has developed comprehensive operational benchmarks and standards of performance that are internationally recognized in support of a risk-based model. The accreditation process required an assessment of all operations and performance measures, which if deemed adequate, would have to be reported annually to the CFAI and assessed every five years through the re-accreditation process.

Over a three-year span, OFS gathered materials from all facets of its operations to complete the many components of the CFAI accreditation process. This included a detailed review of all standard operating procedures, general orders, deployment models, service delivery standards, performance measures, risk assessments and training and development programs. Also, as part of the review, OFS was required to develop a Standards of Cover document established on the principles of a risk-based deployment model (attached as Document 1).

In August 2014, OFS became one of less than 200 agencies to receive Accredited Agency status with CFAI. Also, OFS is one of only six cities in Canada to achieve International Accredited Agency status with both the CFAI and the Centre for Public Safety of Excellence.

DISCUSSION

STANDARDS OF COVER

As part of the CFAI accreditation process, OFS was required to develop a Standards of Cover. These standards were then applied to the City of Ottawa forming the basis of the Station Location Study.

The Standards of Cover specifically required the establishment of the following:

1. A risk rating for all communities in the City of Ottawa (primarily based on a combination of building stock / age and population density)
2. An Effective Response Force (number of firefighters required based on the level of risk)
3. Response time benchmarks and baselines

1- Risk Ratings

The first step in creating the Standards of Cover was to determine the specific risks present in each community. The greater the risk the more resources are needed to suppress or contain the fire and prevent greater loss of life and property. The two

primary components of the Risk Identification Method in CFAI are: building type and population density.

Table 3 below provides a description and examples of each risk rating:

Table 3 - Risk Ratings

Risk Rating	Description	Examples
Low	Not significant in their impact to life or property. These are managed by a minimal resource response and require minimum monitoring and control unless subsequent risk assessments show a substantial change, prompting a move to another risk category.	<ul style="list-style-type: none"> • Grass/brush fire with no exposure • Vehicle fire with no exposure • Commercial structures remote from other buildings (i.e. dumpster or shed)
Moderate (1 and 2)	This risk range includes built up areas of average size where the risk of life loss or property damage due to fire in a single occupancy is usually limited to the occupants or small commercial or mercantile property. Concentrations of property may vary, but will generally be of limited extent.	<p><i>Moderate 1</i> is a detached single family residence</p> <p><i>Moderate 2</i> includes: semi-detached multiple occupancy homes, smaller multi-story dwellings, offices, mercantile and industrial occupancies</p>
High	These risks include built up areas of substantial size with a high concentration of property presenting a substantial risk of life loss, severe financial impact or unusual potential for damage in event of fire. This may mean that strategies should be developed to reduce or eliminate the risks and that mitigation in the form of multi-agency planning, exercising and training for these hazards should be put in place.	<ul style="list-style-type: none"> • High-rise buildings • Schools • Entertainment venues • Long-term Care Facilities
Special	Risks within this category are low probability with high consequences. This could include manmade or natural events. There is a potential for a significant number of people to be affected,	<ul style="list-style-type: none"> • Aircraft accident • Major hazmat incident • Hospitals

	severe financial impact, displacement of residents or workers, and/or a serious effect on community and environment.	<ul style="list-style-type: none"> • Prisons
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Table 4 provides a description of each population density category based on the CFAI standards:

Table 4 - Population Densities

Area Type	Population Density
Metropolitan	Population of over 200,000 and/or density of over 3000 people per square mile.
Urban	Population of over 30,000 and/or density of over 2000 people per square mile.
Suburban	Population of 10,000 to 29,000 and/or a density of 1000 to 2000 people per square mile.
Rural	Population of less than 10,000 and/or a density of less than 1000 people per square mile.

2- Effective Response Force

Ottawa Fire Services selected its Effective Response Force (number of resources required for response) based on a review of critical tasks expected to be performed by firefighters responding to the scene. A detailed description of operational 'critical tasks' are found in the Standards of Cover (Document 1).

3- Response Time Benchmarks and Baselines

The Total Response Time for an incident is measured on a combination of three time intervals: Alarm Processing Time, Turnout Time and Travel Time.

Alarm Processing Time – The time interval between the moment Ottawa Fire Services dispatch center receives the call to the time the computer-aided dispatch operator activates the station.

Turnout Time – The time interval between the moment the responding station is notified and the moment responding fire vehicles are en-route to an incident. Turnout time varies from station to station due to layout, location of stations (urban/rural) and the staffing model of the station (career/volunteer).

Travel Time – The time interval between the moment the responding fire vehicles are en-route and the moment when the responding fire vehicles arrive on scene.

The Total Response Time is a combination of all three time intervals noted above and begins the moment an OFS dispatcher receives the call of a reported incident and ends the moment the appropriate resources arrive on-scene.

In order to determine the response time standards, OFS first had to identify its benchmark. These 'benchmarks' are also commonly referred to as targets or goals that the organization strives to obtain in an effort to achieve excellence in service delivery. In developing appropriate response benchmarks, municipal fire services are mandated by the Fire Protection and Prevention Act to provide fire protection services in accordance with its local needs and circumstances. As such, through the CFAI accreditation process, OFS adopted the National Fire Protection Association (NFPA) standards of performance benchmarks, which are in compliance with the Provincial legislation.

Baselines are typically considered as the minimum standard for measuring performance. OFS adopted the CFAI baseline standard, which allows for a 30% increase from the established benchmark. The Service must meet or exceed the established baseline 90% of the time in order to retain accreditation status.

To further validate its new performance standards, OFS carried out a review of historical fire response data over a three year span (2011, 2012 and 2013).

Table 5 below provides a snapshot of the new travel time standards:

Table 5 - New Travel Time Standards

Population Density	Risk Rating	Firefighters on scene	Maintain CFAI = 90% of Time Travel Times Must Be Between Range	
			Benchmark	Baseline
Metropolitan / Urban	Low	4	4:00	5:12
	Moderate 1	14	8:00	10:24
	Moderate 2	17		
	High/Special	25		
Suburban	Low	4	5:00	6:30
	Moderate 1	14	10:00	13:00
	Moderate 2	17		

	High/Special	25		
Rural	Low	4	10:00	13:00
	Moderate 1	14	14:00	18:12
	Moderate 2	17		
	High/Special	25		

STATION LOCATION STUDY

Methodology

The Station Location Study was conducted by developing response measurements in Geographic Information System (GIS) software and applying these measures across the City of Ottawa. The response measurements were developed in accordance with the three (3) primary considerations of the Standards of Cover:

1. Risk Ratings (based on building type and population density)
2. Effective Response Force (number of firefighters required based on level of risk rating)
3. Response Time Benchmarks and Baselines

A road network of the entire city was built into the GIS software and each building was assigned a risk rating. Then all possible scenarios of an Effective Response Force for low, moderate 1, moderate 2 and high risk were applied across Metropolitan, Urban, Suburban and Rural zones.

Also, the following other considerations were taken into account for the purpose of this study:

- Current response capabilities (i.e. existing stations and assets)
- Development data (Community Design Plans, schedules and zoning data)
- Implementation of new technology (Traffic Pre-emption, Mobile Data Terminals/Automatic Vehicle Locators)

In order to validate the results, each scenario was compared to actual response times from the Record Management System database. The outcome of the study resulted in two recommendations; one based on growth and the other as a potential efficiency opportunity.

Growth

The Station Location Study re-confirmed Orleans South and identified Kanata North as growth areas. The proposed station in Orleans South was previously approved as part of the 2008 Station Location Study and has been accruing funding towards its planned construction in 2017.

The Kanata North station was not identified in the 2008 station location study because the urban boundary was different at the time. However, since its expansion, the new study has identified areas in the south March corridor of the city that will eventually not meet the new Standards of Cover as new developments are built.

As a result, OFS is recommending the relocation of Station 45 (1040 Riddell Drive) within the Kanata North Community Design Plan. Currently, Station 45 (Riddell) is a composite station containing career firefighters (10 FTEs) and volunteer firefighters. However, in order to meet the new standards based on projected growth, OFS would require additional career firefighters (10 FTEs) at a better situated location; though the station will remain a composite station and include volunteer firefighters.

The Station Location Study confirmed that there would be no operational impacts or adverse impacts to public safety in relocating Station 45 (Riddell). The maps attached in Document 2 identify the areas projecting growth, anticipated risks and benefits of the new station being recommended.

The current staffing of Station 45 (Riddell), as well as the equipment and apparatus, will relocate to the station's new location. The projected timeline for construction of the Kanata North station is 2020 and OFS will identify funding as part of the next Development Charge Study scheduled in 2019 and included in the 2020 Draft Capital Budget. The estimated capital cost for construction is \$5.5 million, which does not include land acquisition, and is based on the most recently built stations: Station 46 (34 Iber Road) in 2011 and Station 47 (3559 Greenbank Road) in 2012.

Efficiency Strategy

Through the application of the Standards of Cover in the Station Location Study, OFS was able to identify an opportunity to combine two existing stations into one station at a new location. This strategy would have no adverse effects to public safety, as shown in the maps attached in Document 2. Also, this strategy would result in 20 FTES in efficiencies, which would be used to offset the operating requirement for the Orleans South station in 2017.

The recommendation is to combine Station 36 (900 Industrial) and Station 55 (1700 Blair Road) and relocate to the Public Works yard located in the Cyrville/Innes Road

corridor. Upon relocation to the new site, any remaining uses within Station 55 (portions of the existing station building are utilized for city storage) would be reviewed as part of the City's corporate rationalization process whereby the best utilization of the space and the facility in general will be determined. Station 36 (Industrial) will continue to operate as a Training Centre, while OFS evaluates the requirements of a new training facility.

Both Station 36 (Industrial) and Station 55 (Blair) are staffed with 20 FTEs for a total of 40 FTEs. The proposed station to be built in the Cyrville/Innes Road corridor would require 20 FTEs and the other 20 FTEs would offset the staffing requirement of the planned Council approved Orleans South station. The equipment at both Station 36 (Industrial) and Station 55 (Blair) will be repurposed to the two new stations to offset any additional fire response vehicles expenses.

The capital required to build a station in the Cyrville/Innes Road corridor is estimated to be \$5,500,000. The estimated funding is based on the most recent construction costs of Station 46 (34 Iber Road) in 2011 and Station 47 (3559 Greenbank Road) in 2012. However, the projected costs are lower than previous builds as there would be no requirement for land acquisition or vehicles (both have been identified as part of the efficiency strategy). Further, OFS has identified various funding strategies within its capital budget to ensure there is no additional funding required outside of its normal capital base requirement. Such strategies include deferring a portion of renewal items by enhancing preventative maintenance programs of certain equipment/assets.

RURAL IMPLICATIONS

The relocation of Station 45 (1040 Riddell Drive) will continue to serve the rural communities surrounding Kanata North and in fact result in a more efficient assembly time of an effective response force. This recommendation has no adverse impacts to public safety.

CONSULTATION

Throughout the completion of the station location study, OFS consulted with several city partners.

Planning and Growth Management Department (PGMD): OFS has been consulting with the PGMD on Community Design Plans to establish its station requirements within each community. The PGMD provided OFS with projected growth for the City of Ottawa and zoning data.

Real Estate Partnership and Development Office (REPDO): OFS has consulted with REPDO on the recommendations of the Station Location Study and are aware of the

areas in the city where a station would be required should the recommendations be approved. With respect to the efficiency opportunity and the building of a Station in the Cyrville/Innes corridor, once Ottawa Fire Services disengages from the space at Blair Road (Station 55), REPDO will review the entire space distribution for potential change of use opportunities. City of Ottawa operational requirements will be factored into the analysis to determine the best property solution for the overall property.

Public Works Department: In order to achieve the efficiency opportunity of consolidating Station 36 (Industrial) and Station 55 (Blair), by building a new station in the Cyrville/Innes corridor by the year 2017, OFS has consulted with the Public Works Department to identify City-owned land at the Cyrville Yard. Public Works is amenable to the proposed solution and OFS will continue to work with all stakeholders to ensure the needs of all parties are addressed. The operational needs on site must be considered and planned for as part of any potential site development.

Ottawa Fire Services met with the affected ward councillors and all members of the Community and Protective Services Committee.

To inform the public of the implications associated with this report, Ottawa Fire Services conducted two public information sessions. The public information sessions were promoted through a variety of communication channels, including the City of Ottawa website, social media and local print media.

LEGAL IMPLICATIONS

As long as each station is built in accordance with all applicable legislation, by-laws and policies, there are no legal impediments to the implementation of the report recommendations.

RISK MANAGEMENT IMPLICATIONS

There are risk implications. These risks have been identified and explained in the report.

ASSET MANAGEMENT IMPLICATIONS

Comprehensive Asset Management (CAM) is an integrated business approach involving planning, finance, engineering, maintenance and operations geared towards effectively managing existing and new infrastructure to maximize benefits, reduce risk and provide safe and reliable levels of service to community users. This is accomplished in a socially, culturally, environmentally and economically conscious manner.

The recommendations documented in this report are consistent with the City's Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) objectives. The implementation of the CAM program results in timely decisions that minimize lifecycle costs and ensure the long-term affordability of assets. To fulfill its obligation to deliver quality services to the community, the City must ensure that assets supporting City services are managed in a way that balances service levels, risk and affordability.

FINANCIAL IMPLICATIONS

As outlined in this report.

ACCESSIBILITY IMPACTS

The new facilities will meet all necessary requirements within the standards of the Accessibility for Ontarians with Disabilities Act.

ENVIRONMENTAL IMPLICATIONS

There are no environmental implications associated with this report.

TECHNOLOGY IMPLICATIONS

There are no technology implications associated with this report.

TERM OF COUNCIL PRIORITIES

There are no direct impacts on the 2010-2014 Term of Council Priorities.

SUPPORTING DOCUMENTATION

Document 1 – Standards of Cover

Document 2 - Maps

DISPOSITION

Staff will implement the recommendations as outlined in this report, as directed by Committee and Council.