Draft Policies

Draft policies

Fire Safety Act
(chapter s-3.4)

Notice is hereby given, pursuant to section 138 of the Fire Safety Act, that the "*Orientations du ministre de la Sécurité publique en matière de sécurité incendie*," the text of which appears below, may be established on the expiry of 45 days following publication of this notice.

These policies are a revision of the Orientations du ministre de la Sécurité publique en matière de sécurité incendie established on May 30, 2001.

The policies are based on three core principles: reinforce fire prevention activities, clarify various intervention procedures and their optimization, and reaffirm the role of regional authorities in fire safety coordination.

Additional information may be obtained by writing to the Direction du soutien aux régions of the Direction générale de la sécurité incendie et des télécommunications d'urgence, Ministère de la Sécurité publique, at soutien-incendie@msp.gouv.qc.ca.

Any interested person wishing to share comments on this matter is asked to send them by regular mail, before the expiry of the aforementioned 45-day period, to the attention of Eric Drouin, Secrétaire général du ministère de la Sécurité publique, 2525, boulevard Laurier, Tour des Laurentides, 5e étage, Québec (Québec) G1V 2L2, or by email to greffe-msp@msp.gouv.qc.ca.

FRANÇOIS BONNARDEL
Minister of Public Security

Fire Safety Policies of the Minister of Public Security

Message from the Minister

Fire safety has progressed tremendously over the past 20 years. Improvements in training, the refinement of intervention techniques or equipment design, and more effective tools mean that firefighters are better prepared than ever to fight fires and save people in distress.

The Fire Safety Policies of the Minister of Public Security (the Policies) have facilitated the structuring of collaboration by the municipal sector with respect to fire safety and thereby enhanced the scope of action on the ground. By way of an example, it is through the optimization principle that fire safety services are able to offer better protection.

The time has come to update these policies to face current and future challenges. The experience acquired in the implementation of risk coverage plans has revealed the need to bolster fire prevention, clarify certain procedures pertaining to the response to fires, and reassert the importance of working in collaboration.

Prevention must be a priority for everyone. For this reason, the current Policies are placing greater emphasis on effective fire prevention. An ounce of prevention is worth a pound of cure.

The protection of individuals and firefighters is of paramount concern. Consequently, attention has focused particularly on specifying ways to safely fight fires. In response to requests from the municipal and firefighting sectors, streamlining has been agreed concerning the resources to be deployed when alerts are received from fire alarm systems.

The principle of optimizing fire safety service interventions is reaffirmed and must continue to hinge on the collaboration of all the stakeholders concerned. The requirements stipulated in the Policies must not be perceived as an end in themselves but rather an invitation to do even more. I invite fire safety services, in collaboration with officials from the Ministère de la Sécurité publique, to capitalize on their expertise and on-the-ground knowledge to strive for excellence in fire safety.

To conclude, I would like to highlight the remarkable efforts of firefighters who, day in and day out, fight fires and carry out perilous mandates to ensure the well-being and safety of our communities. The challenges are, indeed, numerous, but I am convinced that together we will meet them with flying colours.

FRANÇOIS BONNARDEL
Minister of Public Security

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INTRODUCTION

As a result of the observations concerning challenges in the field of fire safety, in 2000, in the wake of consultations with municipal bodies, the government adopted a new legislative framework, the Fire Safety Act (c. S-3.4) (the Act). The Act establishes the key parameters of fire safety, i.e., prevention, organizing assistance, intervention, and training, especially through the establishment of the *École nationale des pompiers du Québec*, whose mission and role it stipulates, and the Regulation respecting the conditions governing the exercise of functions within a municipal fire safety service (c. S-3.4, r. 1). Moreover, the Act specifies the Minister of Public Security's responsibilities regarding fire safety, including the responsibility to establish policies in this respect.

It also establishes the respective roles of regional and local authorities, defines regional planning parameters by introducing fire safety cover plans and determines the powers and responsibilities of municipal fire safety services and their staff.

The planning process geared to the establishment of a fire safety cover plan falls within the scope of a risk management perspective represented by the model illustrated below. The model constitutes the theoretical foundation of the exercise stipulated in the Act that is required of each regional authority.

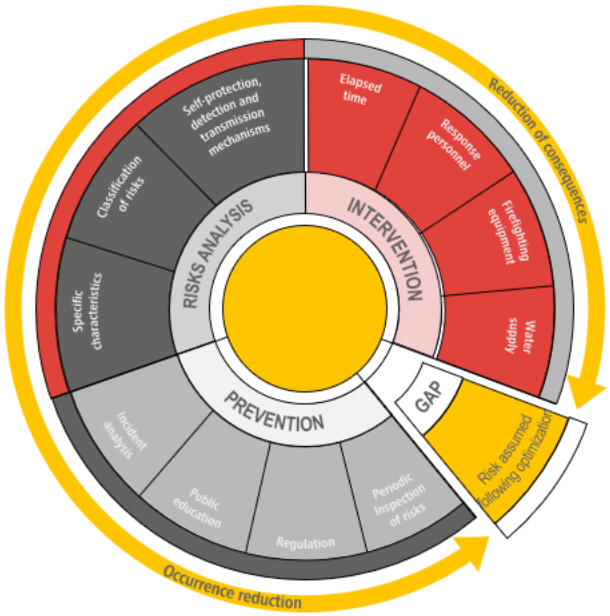

Figure 1: Fire risks management model

The exercise required of local authorities consists in an **analysis of the risks** found in their territory in order to make provision for **prevention** measures aimed at reducing the likelihood of a fire occurring (**reduction of the occurrence**) and to plan the mode of **intervention** to limit the consequences of fires (**reduction of consequences**). The three dimensions, i.e., risk analysis, prevention, and intervention, provide the framework that underpins the other elements of the model. They are complementary and interdependent insofar as the actions of any one of the three dimensions cannot control the phenomenon and the consequences of the fire under all circumstances. The establishment of a level of fire protection must, therefore, hinge on the combined effects of several actions. There is never zero risk, and such actions will reduce the occurrence and consequences of fires to an extent deemed acceptable.

The application of the model responds to the two key strategic thrusts stated by the Minister:

1. reduce, in all regions of Québec, the loss of life and property attributable to fires;
2. enhance the efficacy of organizations responsible for fire safety.

The Minister also describes the objectives of fire protection, and the minimal measures that regional or local authorities must consider in the establishment of their fire safety cover plan, including the implementation plan.

These key principles and the eight objectives stemming from them have, over the past 20 years, significantly improved loss prevention and the preparedness of fire safety services and the quality of their interventions. However, an update is necessary given the new challenges that fire safety services are facing and in light of changing fire safety standards. It should be noted that roughly 19 000 fires occur each year in Québec and that efforts must be maintained to prevent them. Moreover, the experience acquired in the application of the first generations of the fire safety cover plan warrants a review of the objectives that facilitate compliance with the Policies.

The Policies are decisive in the context of the planning process required of local and regional authorities since they refer to the most commonly recognized fire safety standards and the rules pertaining to occupational health and safety. They codify for the benefit of the authorities responsible accepted practices in the field.

The updated Policies are based on three key principles: (1) bolster fire prevention activities; (2) clarify procedures pertaining to interventions and their optimization; and (3) reaffirm the role of regional authorities from the standpoint of the coordination of fire safety.

They are divided into three sections, "Prevention," "Intervention," and "Coordination."

— Prevention encompasses Objective 1 – Ascertain fire hazards and Objective 2 – Prevent fires.

— Intervention encompasses Objective 3 – Intervene in low-risk building fires; 4 – Intervene in moderate-, high-, and extreme-risk building fires; and 5 – Intervene in other disasters and accidents.

— Coordination groups together Objective 6 – Optimize intervention by fire safety services; 7 – Coordinate fire safety at the regional level; and 8 – Link intervention resources.

The appendices include the fire risk classification, the strike force models stipulated in the Policies and the standards of the National Fire Protection Association (NFPA), a list of reference documents, and the requisite information for the attestation of the fire safety cover plan.

PREVENTION

Since the publication in 2001 of the Fire Safety Policies of the Minister of Public Security, the Ministère de la Sécurité publique (MSP) has always made prevention a priority. Against the background of the densification of urban areas, ageing of the population and infrastructure, and more widespread use of more readily combustible materials, fire prevention remains the cornerstone of the current Policies. Everyone will agree that an ounce of prevention is worth a pound of cure. Prevention entails, primarily, focusing on factors upstream from fires in order to reduce their occurrence and contribute to minimizing their repercussions. Prevention is also an indispensable component of the fire risk management model advocated in Québec.

In these Policies, prevention includes a new Objective 1 focusing on **risk awareness**. Enhanced risk awareness in a territory can bolster the effectiveness of prevention measures and better adapt interventions. **Prevention** programs and **self-protection measures** that the owners and users of buildings can adopt to protect themselves against fires are now grouped together under Objective 2 **pertaining to fire prevention.** In practical terms, the two objectives seek to satisfy the first key direction of the Minister, i.e., "Reduce, in all regions of Québec, the loss of life and property attributable to fires".

Objective 1 – Ascertain fire hazards

Ascertain the risks present in the territory by analyzing them. Risk analysis consists in inventorying, locating, evaluating, and classifying fire risks. Keep this classification up to date in light of changes in the territory. Adapt prevention and intervention measures planning bearing in mind risk analysis outcomes.

Risk awareness, through an analysis of such outcomes, constitutes the foundation of fire safety planning. An adequate knowledge of fire hazards in a territory facilitates the adoption of effective preventive measures and the adaptation of means of intervention when disasters occur.

To adequately analyze risks, the authorities responsible must first, in collaboration with the entire array of municipal services, agree on each one's roles and responsibilities in the performance of this indispensable exercise. It is necessary, subsequently, to determine an effective analysis procedure, which must draw inspiration from the process stipulated in this objective and consider the relevant characteristics of the buildings in the territory covered. The objective of the analysis process is to classify the entire array of buildings according to the classification stipulated in Appendix A (low, moderate, high, or extreme risks). This classification will subsequently help determine the preventive measures and intervention measures applicable to different buildings according to their class.

1.1 Characteristics and factors to be considered in risk analysis

To conduct a risk analysis, it is important to consider the location of buildings, their vulnerability characteristics, and factors that affect firefighters' travel time. The characteristics are grouped together in three categories.

1.1.1 Characteristics of the territory

The characteristics of the territory include two key elements, i.e., the urban perimeter, and the presence of a compliant water system. The two characteristics will help determine the requisite strike force and applicable response time, as explained in Objective 3 and Objective 4. Additionally, the territory's water points must be located, and it would also be desirable to pinpoint water supply points to better plan resupplying during an intervention.

1.1.2 Characteristics of the building

The characteristics of the building refer to everything that can affect its flammability performance, including the risk of spread to the surrounding environment. Characteristics that can increase the complexity of rescue and firefighting interventions must also be considered. The characteristics can also include the building's use, its importance to the community, the vulnerability of its occupants, and the history of incidents that have occurred there.

1.1.3 Factors that affect response time

Response time is affected by the characteristics of the road network. Pronounced curves, abrupt slopes, or inaccessible roads can reduce the speed of response vehicles. Furthermore, the state of the roadway and weight restrictions on certain structures could affect the route taken.

1.2 Risk analysis

Risk analysis includes the three phases indicated below.

1. **Make a list of and locate the risks in the territory**

   Based on the last assessment roll[1] or more up-to-date information such as the previous classification, permits issued for new buildings or changes of use, reports on fire prevention visits by firefighters or preventionists, identify all the buildings in the territory. Make sure of their exact location in order to proceed with the following steps in the analysis.

2. **Assess the risks**

   Based on the building inventory, evaluate the buildings to determine their risk class and the requisite strike force. To this end, consider the building's characteristics and the characteristics of the territory. The building's characteristics can affect the classification and planning of prevention and intervention strategies while the characteristics of the territory determine the requisite strike force.

   The characteristics that affect the response time must also be considered since they could have repercussions on the optimization approach.

3. **Classify the risks**

   Classify the buildings according to the risk classification (low, moderate, high, or extreme) described in Appendix A. All buildings in the territory, whether residential, commercial, industrial, agricultural, or institutional must be classified regardless of use.

1. In accordance with section 14 of the Act respecting municipal taxation (c. F-2.1).

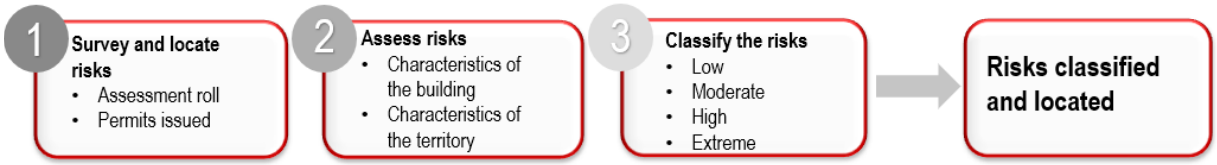

Figure 2: Risk analysis

To ensure that information on risk classification is always up to date, i.e., relevant to planning prevention and intervention activities, follow-up mechanisms must be established. Such mechanisms seek to ensure that effective links are maintained between municipal services and fire safety services. For example, the urban planning and property assessment service should promptly transmit information on new buildings or changes of use. Collaboration must also be contemplated at the municipality's planning development stage.

An adequate knowledge of risks through inventorying, locating, evaluating, and classifying, provides the necessary information for the following stages. At the conclusion of the process, the authorities responsible will be able to ascertain fire risks in their territory and have in hand the necessary foundation to initiate the planning of prevention and intervention activities.

Objective 2 – Prevent fires

Plan fire prevention activities, make provision for self-protection measures, and the attendant regulatory provisions. Consider changes in the territory and evaluate the implementation of prevention measures.

The size of Québec's territory, the level of risk, and the limited resources in the municipal sector engender fire safety challenges, especially from the standpoint of response time. Consequently, planning intervention to deal with fires alone is insufficient to ensure public safety. In this context, prevention is the indispensable cornerstone to protect life, property, and the environment against fire and thereby seek to reduce the loss of life and property. What is more, it has been shown that investments in fire prevention engender convincing social and economic benefits for society. Since the Policies were established, prevention has always been the priority. However, additional efforts are necessary to give concrete expression to it.

To do so, local and regional authorities must establish fire prevention programs, which must lead to concrete actions. Their implementation must be evaluated.

2.1 Prevention programs

Fire prevention encompasses at least the following programs:

1. the evaluation and analysis of incidents;
2. municipal fire safety bylaws;
3. the installation and verification of the operation of smoke detectors;
4. the periodic inspection of moderate, high, and extreme risks;
5. awareness-raising activities.

Each of these programs is defined in greater detail in the MSP's *Guide relatif à la planification des activités de prévention des incendies.* A prevention program that considers the outcomes of risk assessment must mention:

—the aims and objectives pursued;

—the risks or the groups targeted;

—a brief description of the key elements of its content;

—the frequency of the activities stipulated;

—the application methods and details used;

—the evaluation of the outcomes.

Provision must also be made for the human, physical, and financial resources allocated to the design and execution of the activities stipulated and the roles and responsibilities of each intervener must be defined. Resource allocation should be prioritized for the quickest response times.

To ensure the cohesion between the municipalities of the prevention programs, it is important for the municipalities to collaborate among themselves and with the regional authority during both the planning and implementation stages. To this end, the MSP's *Guide relatif à la planification des activités de prévention des incendies* provides numerous examples of collaboration and the sharing of responsibilities between local authorities and the regional authority.

Firefighters can carry out certain preventive measures while others are reserved for safety practitioners. Indeed, firefighters have the knowledge necessary to inform and heighten awareness and are well perceived by the public. It is also relevant to link prevention activities to unique events such as fire prevention week, festivals, or open houses. It is advisable to carry out an awareness-raising activity aimed at people in the vicinity following a fire. At-risk behaviour is the main cause of fires, and it is, therefore, important to heighten awareness concerning the adoption of safe practices.

2.2 Self-protection measures

Self-protection measures are intended to alert and maintain the fire in favourable extinction conditions by limiting its spread until the firefighters arrive. Such measures are to be recommended when it is impossible to overcome certain intervention shortcomings such as a high response time, insufficient intervention resources, or accessibility questions. In such situations, the local authorities can encourage residents, businesses, and building operators to adopt self-protection measures such as fire extinguishers, fire alarm systems, additional smoke detectors, dry standpipes, and sprinklers. In the case of specific risks in businesses, it is important to ascertain whether the businesses have established a fire response team. A local authority could also make provision through regulations for mandatory self-protection measures for certain buildings. Such measures can enhance those already included in the National Building Code of Canada and the National Fire Code. Local and regional authorities are invited to consult the MSP's *Guide relatif à la planification des activités de prévention des incendies* for additional information on potential self-protection measures.

2.2.1 Fire prevention regulations

Local authorities can regulate the fire safety sector in accordance with current legislation and regulations. The Municipal Powers Act (c. C-47.1) empowers the municipalities to regulate in terms of the municipalities' varied and changing needs and in the interest of their residents, including security. The municipalities are thus empowered to regulate certain elements pertaining, in particular, to construction, prevention, building safety, and factors that can have consequences with respect to the triggering and spread of fire, the accessibility of fire services, and fire alarms. Moreover, it is important to emphasize that adequate fire prevention regulation also heightens awareness and informs the public about procedures to be followed to protect itself. Regulation must be perceived as a prevention tool that must be subject to planning and evaluation. In this respect, the MSP's *Guide relatif à la planification des activités de prévention des incendies* examines all of these elements.

2.3 Development of the territory

The development of the territory, e.g., the emergence of new neighbourhoods, the creation of water systems, and the opening of motorable roads can have repercussions on the response capability of fire safety services. For example, the development of mountainside residential neigh

hbourhoods that pose accessibility problems and the development of industrial districts that require higher water flow rates can affect interventions in the event of fire. Because of these questions, the fire safety service must be consulted when the municipality carries out urban development planning, in particular to adjust prevention programs and provide for adequate intervention in the new sectors.

2.4 Evaluation of preventive measures

Evaluation consists in measuring the discrepancies between the objectives defined in the programs and the outcomes achieved. In this case, it is reflected in the production of an activity report containing a review of the application of prevention programs. The review must include the attainment status of the results, the attendant observations, and the improvements to be made to the preventive measures. Furthermore, the measures determined when the fire safety cover plan is reviewed must be coherent with the review of the application of prevention programs.

It is important to evaluate the preventive measures, including regulations, and to combine this evaluation with the findings of the analysis of incidents. In this way, the requisite information can be obtained to target the protection objectives aimed at reducing the number of fires and the loss of life and property.

INTERVENTION

Despite the importance attached to prevention activities, intervention, when required, must be carried out **efficiently and safely**. The authorities responsible must carefully plan it in keeping with good practices to ensure that all Quebecers receive the **best protection possible**. It is important that interventions be carried out while ensuring the **health and safety of firefighters** in the performance of their duties.

Intervention now encompasses three objectives: Objective 3 concerns **low risks**; Objective 4, **moderate, high, and extreme risks**; and Objective 5 focuses on **other disasters and accidents.** The three objectives seek to establish the means of intervention that the authorities responsible must adopt in the elaboration of their fire safety cover plan. The risk classification table in Appendix A clarifies the notion of low, moderate, high, and extreme risks. The requirements specific to the interventions that these objectives encompass only concern the initial call and must be considered solely as **minimal thresholds**.

Objective 3 reaffirms the number of firefighters required to carry out a **safe rescue and attack operation inside a building**. The notion of a **strike team**, i.e., the number of firefighters, the volume of water, and the types of vehicles required depending on the circumstances, has been clarified. Additionally, the special provisions concerning the response to **fire alarm system** alerts have been added. In practical terms, these objectives also seek to satisfy the first key direction of the Minister, i.e., "Reduce, in all regions of Québec, the loss of life and property attributable to fires".

The next section on coordination explains in detail the rules governing the optimization of the intervention.

Objective 3 – Intervene in low-risk building fires

Intervene safely with the requisite strike team in low-risk building fires to save lives and reduce property losses. Plan and coordinate optimum interventions bearing in mind the resources available and leaving aside administrative boundaries. Promote collaboration between fire safety services in the vicinity.

Low risks include fires in detached residential buildings with a maximum of two storeys and comprising two or fewer dwelling units, rooming houses with a maximum of four rooms, and small, isolated buildings. In the case of such risks, the main objective is to avoid full fire development. To this end, a strike team must be deployed within a set response time. The strike team ensures the rescue of victims and the extinction of the fire in a manner that is safe for the firefighters.

Local authorities are, therefore, asked to plan fire safety leaving aside municipal boundaries to determine the means of intervention that consider the attendant risks. This demands that the quickest fire safety service intervenes first on the site of a low-risk building fire. This objective establishes the criteria in respect of which the optimization process must be applied and Objective 6 spells out its methodology. It also presents the criteria governing the adjustment of a strike team required to respond to alerts from fire alarm systems.

3.1 Response time

Response time corresponds to the period between reception by the fire safety service of the alert and the arrival of the requisite response team on the site of the fire and includes the time required to mobilize the firefighters, and travel time.

3.1.1 Inside the urban perimeter

According to current knowledge, intervention based on a response time under 10 minutes is optimal and usually avoids reaching the flashover point. For these reasons, **the objective is to attain a maximum response time of 10 minutes for all low-risk building fires in the urban perimeter.**

For municipalities with fewer than 10 000 inhabitants, the objective is to attain a maximum response time of 15 minutes for all low-risk building fires situated in the urban perimeter.

Accordingly, the fire safety service is asked to plan its means of intervention in order to meet this objective.[2] **The optimization process is essential beyond these response times.**

3.1.2 Outside the urban perimeter

For buildings situated outside the urban perimeters and, therefore, far from fire stations, longer response times are understandable. Given the considerable distances to be travelled, **the objective is to attain a maximum response time of 15 minutes for all low-risk fires outside the urban perimeter. The optimization process is essential beyond this response time.** However, local authorities must consider the potentially prejudicial nature of this longer time and adopt preventive and self-protection measures to compensate for it.

3.2 Strike team

The strike team required at the time of the initial call comprises three elements: the firefighters, water, and the requisite vehicles.

A full strike team must include a sufficient number of firefighters, the requisite volume of water, and the number of response vehicles requested. To satisfy the requirement, the entire array of the requisite strike team's resources must reach the boundary of the property where the scene of operations is located below these response times.

3.2.1 Number of firefighters

The full strike team comprises a minimum of 10 firefighters with their personal protective equipment. This number of firefighters ensures adequate, safe intervention both with respect to rescue operations and the extinction of low-risk building fires (see Appendix B). The number applies to an intervention carried out in the urban perimeter of the municipality. Nothing prevents a fire safety service from assigning additional firefighters to a fire if it deems it necessary. NFPA Standards 1710 and 1720 recommend a higher number of firefighters to maximize the efficacy of tasks related to firefighting and the safety of firefighters. Appendix C presents the strike team stipulated in NFPA Standard 1710.

In areas without a compliant water system, **recourse to a reduced strike team comprising eight firefighters can be considered for low-risk fires.** Accordingly, two firefighters can be reassigned from the strike team of 10 firefighters exclusively to water supplies. The regional authority must indicate in the fire safety cover plan details of the zone in which the reduced strike team applies. It would be desirable to consider this zone in reflection on preventive measures.

For municipalities with fewer than 10 000 inhabitants, **recourse to a reduced strike team comprising eight firefighters can be considered both for interventions inside and outside the urban perimeter.**

2. By way of indication, 73% of buildings with an address in Québec are located in the urban perimeter. Sources: Adresse Québec data and Ministère des Affaires municipales et de l'Habitation (MAMH).

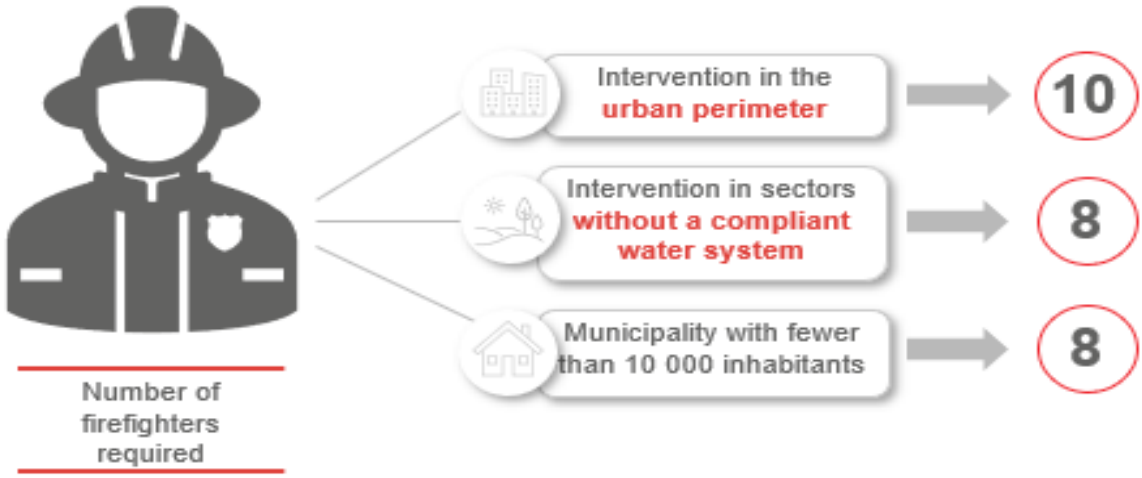

Figure 3: Number of firefighters required depending on the fire area

The strike team only concerns the deployment of resources at the time of the initial call. However, the strike team as defined cannot perform all the necessary tasks to extinguish the fire when it exceeds the flashover point. The same applies to a fire at risk of spreading to a neighbouring building or in the case of a lengthy intervention. **It is incumbent upon the authority responsible for the intervention to plan by means of deployment protocols the resources necessary for subsequent alerts.** Lastly, the possibility of a second fire in the territory should also be contemplated. Accordingly, resources intended to maintain coverage of the territory during an intervention should be planned.

Lastly, firefighters assigned to engage in rescue or firefighting interventions must possess the qualifications stipulated by the Regulation respecting the conditions governing the exercise of functions within a municipal fire safety service (c. S-3.4, r. 1).

3.2.2 Volume of water

Requirements pertaining to the volume of water to be carried at the time of the initial call for a low-risk building fire depend on the compliance of the water system located near the scene of operations.

3.2.2.1 Compliant water systems

To be deemed compliant, a water system must provide a continuous flow rate of 1 500 L/min. for 30 minutes. This flow rate seeks to ensure adequate, safe intervention when the risk is low. The authorities responsible must ensure their water systems' compliance by conducting the tests stipulated in the Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs (MELCCFP)'s *Guide de bonnes pratiques d'exploitation des installations de distribution d'eau potable*.

The authority responsible for the water system must implement a fire hydrant maintenance and flow rate and pressure verification program. The program must consider the guide mentioned earlier and can draw inspiration from the applicable NFPA standards. What is more, fire hydrants must be identified according to the water system's compliance and should be codified according to the flow rate provided.

3.2.2.2 The absence of compliant water systems

A water system that does not attain the flow rate indicated above or that has not been subject to the requisite verifications is non-compliant. **In the absence of a compliant water system, the authority responsible must transport at the time of the initial call a minimum of 1 000 L of water to the scene of operations involving a low-risk building.** This rule applies both inside and outside the urban perimeter. It is necessary to assign to the intervention the requisite number of vehicles to attain this volume of water. The initial volume of water facilitates rescue operations and fire suppression activities when the water supply is being established.

In the urban perimeter, in addition to the 15 000 L of water required at the time of the initial call water supply must be provided that maintains a continuous minimum throughput of 1 500 L/min. for 30 minutes. To this end, it is incumbent upon the authority responsible for the intervention to provide accordingly for the transportation of water. It should be remembered that the firefighters assigned to water supply are not part of the strike team.

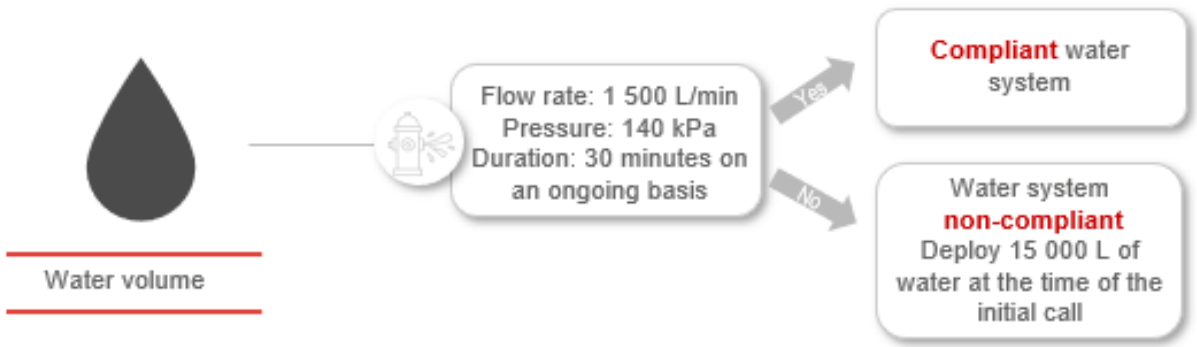

Figure 4: Volume of water deployed at the time of the initial call, according to the water system's compliance

3.2.3 Response vehicles

The authority responsible for the intervention must have available vehicles that enable it to intervene with respect to low-risk building fires. In particular, it must possess **a ULC-compliant pumper truck and a tanker truck that complies with the same standard.** The requirements pertaining to the vehicles mobilized for an intervention involving minimal risk also depend on the water system's compliance. Moreover, the vehicles must be maintained in the manner stipulated in the MSP's *Guide d'application relatif aux véhicules et accessoires d'intervention à l'intention des services de sécurité incendie*. The authority responsible for the intervention must ensure that it only purchases ULC-compliant vehicles when planning the purchase and replacement of response vehicles.

3.2.3.1 The presence of a compliant water system

When a compliant water system is available, it is necessary to mobilize at the time of the initial call **at least one ULC-compliant pumper vehicle** to the scene of operations involving a minimal risk.

3.2.3.2 The absence of a compliant water system

In areas not served by a compliant water system, it is necessary at the time of the initial call to mobilize **in addition to a ULC-compliant pumper truck at least one tanker truck that complies with the same standard**.

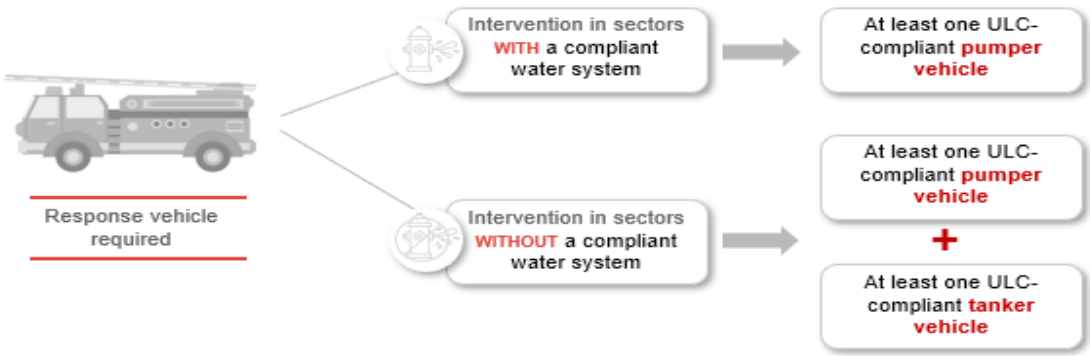

Figure 5: Response vehicle required depending on the water system's compliance

3.2.4 Application of the optimization process

The strike team must aim for optimal intervention, i.e., the intervention must be established in light of the entire array of resources available, leaving aside administrative boundaries. Furthermore, in sectors where no fire safety service is able to ensure a response time of less than 45 minutes, it is not also necessary to carry out optimization. However, it is necessary to mobilize the number of firefighters required to conduct safe rescues and inside fire attacks (see 3.3: Safe rescues and inside fire attacks). Given the importance of reducing the response time in the case of a low-risk building fire, it is desirable to optimize in all cases the deployment of resources. Objective 6 describes in detail the approach to optimize the strike team's intervention.

3.3 Safe rescues and inside fire attacks

It should be noted that the Minister's key direction seeks to reduce human losses stemming from fires. The resources necessary to conduct the safe rescue of individuals inside a burning building must, therefore, be assembled as soon as possible. **Until the requisite strike team arrives, rescue and inside fire attack operations should only be attempted once a minimum of four firefighters, including an officer, and a ULC-compliant pumper truck that can provide a minimum flow rate of 1 150 L/min. are on site.** To maximize the chance of survival of a fire victim, **the rescue and inside fire attack team should be able to intervene within a maximum response time of five minutes.** Regional authorities, in collaboration with fire safety services, are encouraged to organize their fire safety service delivery accordingly.

Under the exceptional circumstances described in the MSP's *Guide relatif aux opérations des services de sécurité incendie* concerning the rescue of individuals at risk of imminent death or an inside fire attack in the case of an incipient fire, it is possible, under the conditions described in the guide, to conduct a rescue operation or an inside fire attack without having assembled four firefighters.

To ensure a safe intervention, **when the flashover point has been reached, while awaiting the requisite strike team, rescue and inside fire attack operations should only be attempted once a minimum of six firefighters, including an officer, and a ULC-compliant pumper truck that can provide a minimum flow rate of 1 150 L/min. are on site.** The two additional firefighters must be prepared to intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.

To obtain additional information on rescues and inside fire attacks, please consult the MSP's *Guide relatif aux opérations des services de sécurité incendie.*

3.4 Fire alarm system

When a monitoring station notifies a fire safety service of an alert from a fire alarm system, it can adjust the requisite strike team **in the absence of any other indication of a fire**.

Without being restricted to the following, the indication of the presence of a fire includes:

— the detection of a fire by more than one detector in the alarm system;

— a call from a witness to report a fire;

— the presence of smoke of unknown origin;

— the presence of abnormal heat of unknown origin.[3]

In all cases where one of the aforementioned indications is present, the strike team stipulated in this objective must be deployed.

The adjustment consists in the partial deployment of the requisite strike team in the case of a low-risk building fire. The adjustment of the strike team must at least include:

With internal or external on-duty firefighters and when the response time is a maximum of 10 minutes:

— four on-duty firefighters, including one officer;

— one ULC-compliant pumper truck.

Without internal or external on-duty firefighters or when the response time exceeds 10 minutes:

— six firefighters, including one officer;

— one ULC-compliant pumper truck;

— one ULC-compliant tanker truck (only when the area is not served by a compliant water system).

It should be recalled that the local authorities should adopt regulations designed to reduce false alarms.

Objective 4 – Intervene in moderate-risk, high-risk, and extreme-risk building fires

Intervene safely with respect in moderate-risk, high-risk, and extreme-risk building fires with an appropriate strike team that saves lives, reduces property losses, and minimizes impacts on the community. Plan and coordinate optimum interventions bearing in mind the resources available and leaving aside administrative boundaries. Prepare to intervene safely and effectively. Promote collaboration between fire safety services in the vicinity.

Despite their small number, moderate-risk, high-risk, and extreme-risk building fires cause more significant losses. Additionally, fires in these types of buildings, e.g., hospitals, seniors' homes, or essential businesses, can cause major disruptions in communities. This situation warrants fire safety services preparing to intervene safely and effectively in light of the specific characteristics of their territory.

As Objective 1 specifies, local authorities are responsible for inventorying, locating, evaluating, and classifying risks to identify moderate-, high-, and extreme-risk buildings in their territory in order to prepare adequately. Planning intervention pertaining to such risks hinges on the optimization approach described in detail in Objective 6, bearing in mind the distinctive characteristics of such risks, e.g., the presence of hazardous materials, the occupants' vulnerabilities, and the building's dimensions. The establishment of the strike team appropriate to such risks is the responsibility of the authority responsible for the intervention. **However, the strike team cannot be smaller than the one already stipulated for a low-risk building.**

3. Based on NFPA Standard 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments.

4.1 Strike team

To establish the appropriate strike team, the authorities responsible must draw inspiration from the most widely recognized standards to promote effective interventions without compromising the firefighters' safety. **It is understood that the appropriate strike team is proportional to the building's risk class.** Thus, the higher the risk, the more extensive the resources mobilized. In particular, the determination of the appropriate strike force must consider the following factors:

— the response time;

— the number of occupants (during the day and at night);

— the presence of vulnerable occupants such as young children, seniors, or individuals with reduced mobility;

— the presence of staff to take charge of vulnerable occupants;

— the dimensions and the characteristics of the building's construction;

— the activities carried out in the building;

— the presence of hazardous materials;

— the self-protection measures in place in the building;

— the analysis of incidents.

The appropriate strike team must be recorded in the deployment protocol submitted to the Centre secondaire d'appels d'urgence incendie (CSAU incendie). The resources required to intervene in moderate-, high-, and extreme-risk buildings usually necessitate the deployment of several fire safety services and should be an additional incentive for them to collaborate to better prepare to intervene.

4.1.1 Fire alarm system

When a monitoring station notifies a fire safety service of an alert from a fire alarm system, it can adjust the requisite strike team for moderate-, high-, or extreme-risk buildings **in the absence of any other indication of a fire**. The indications of a fire are the same as those listed in Point 3.4 for low-risk buildings.

The adjustment of the strike team for moderate, high, or extreme risk must be made following a rigorous analysis based on the vulnerability criteria mentioned earlier. It is incumbent upon the authority responsible for the intervention to resort to the adjustment of the strike team and to determine the parameters pertaining to the adjustment of the strike team.

The adjustment consists in the partial deployment of the strike team normally stipulated for moderate-, high-, or extreme-risk buildings. The adjustment of the strike team must at least include:

With internal or external on-duty firefighters and when the response time is a maximum of 10 minutes:

— four on-duty firefighters, including one officer;

— one ULC-compliant pumper truck;

— any other resource required according to the vulnerability criteria of the building concerned.

Without internal or external on-duty firefighters or when the response time exceeds 10 minutes:

— six firefighters, including one officer;

— one ULC-compliant pumper truck;

— one ULC-compliant tanker truck (only when the area is not served by a compliant water system);

— any other resource required according to the vulnerability criteria of the building concerned.

It should be recalled that the local authorities should adopt regulations designed to reduce false alarms.

4.2 Response plans

The purpose of producing response plans for moderate, high, and extreme risks is to enhance the effectiveness of the firefighters' intervention and reduce the consequences of a fire. In the case of buildings, specific measures must be adopted to prepare for safe, effective intervention. The authority responsible for the intervention, in collaboration with the building's owner, should elaborate and keep up to date an intervention plan for each extreme risk in its territory. When there are numerous extreme risks in the territory, the authority responsible must specify the priority nature of certain buildings.

Bearing in mind the resources assigned to the elaboration of the response plans, it would also be desirable to produce plans for moderate- or extreme-risk buildings in which intervention is difficult. The authority responsible must produce a program that specifies the number of response plans that it plans to produce, the collaborative relationships pertaining to the production of the plans, and a review of the production of response plans under the previous program.

The plan must focus on safe rescues, effective fire extinction, the occupational health and safety of firefighters, and environmental protection. It must include the information indicated in the MSP's *Guide relatif aux opérations des services de sécurité incendie* and should be elaborated jointly by the prevention and intervention sectors.

Objective 5 – Intervene when other disaster risks or accidents occur

Intervene safely with the appropriate resources when other disaster risks or accidents occur to reduce to the utmost the response time, save lives, and limit injuries and disabilities. Plan and coordinate optimum interventions bearing in mind the resources available and leaving aside administrative boundaries. Prepare to intervene safely and effectively in a spirit of respect for the standards and frames of reference in force. Promote collaboration between fire safety services in the vicinity.

Firefighters are the community-based interveners in the municipalities that offer a rapid response in several spheres of public security. In many places, fire safety services encompass the initial resources offering a rapid response in the event a disaster. Paragraph 2 of section 36 of the Fire Safety Act stipulates that firefighters "may also be in charge, together with the other services concerned, of emergency response in the case of other emergencies, assistance to accident victims, disaster assistance and emergency evacuation." The firefighters can acquire the requisite skills and equipment to act in emergencies.

The main objective of a rescue operation is to save the victims' lives or mitigate their injuries by reducing to the utmost the response time. To do so, the authorities responsible must plan the interventions in such a way that they proceed effectively and safely. They must ensure that they adequately train their staff through the implementation of a training and skill maintenance program. Furthermore, they must purchase and maintain the requisite equipment. They must also liaise with each other and with the other emergency services. To ensure the safety of their staff, the authorities responsible must also establish the framework of their interventions. What is more, it is desirable to limit the events covered to those for which the fire safety services are usually responsible.

Moreover, section 47 of the Act stipulates that the exemption from liability applies to the intervention set out in a fire safety cover plan. The regional authorities that opt to include them in their fire safety cover plan must show that the resources allocated to interventions with respect to other disaster risks or accidents have been planned in the best possible manner bearing in mind all the municipal resources available.

The authority responsible must specify the elements indicated below with respect to the interventions included in the fire safety cover plan.

5.1 Extrication

Extrication encompasses the techniques designed to release and save accident victims trapped in their vehicles. The role of the firefighters is to carry out the entire array of extrication activities, establish the necessary operating perimeter to do so, and ensure fire protection. **A minimum of four firefighters qualified to engage in extrication and the necessary equipment must be deployed during this type of intervention. A minimum of two extra firefighters must be assigned to firefighting operations in addition to the firefighters assigned to the extrication. A response vehicle equipped with an integrated pump with a fire hose loaded with water ready for use is also required.** By way of

derogation to the foregoing, a response vehicle equipped with an integrated pump is not required in the case of interventions beyond roads accessible to fire safety service vehicles. The authority responsible for the intervention must determine the procedures to ensure firefighting operations in the event that damaged vehicles catch fire.

The fire safety services must refer to the *Guide d'accompagnement 10-04: 3 métiers, 1 seul but* to organize their extrication service. What is more, the elements in the following table must be determined to include extrication in the fire safety cover plan.

Table 1: Extrication-related elements in the fire safety cover plan

Perimeter of the intervention	Number of firefighters trained	Equipment available and location	Applicable frames of reference
— Define the travel lanes accessible to response vehicles from the FSS and where the service is offered.	— The number of firefighters who possess the extrication certificate. — The number of firefighters who possess the extrication certificate who are available during the day, at night, and on weekends.	— A list of the vehicles outfitted with extrication equipment and their location.	— *Guide d'accompagnement 10-04: 3 métiers, 1 seul but.* Other references — *Guide relatif aux opérations des services de sécurité incendie du MSP;* — NFPA 1006: Standard for Technical Rescue Personnel Professional Qualification.

5.2 Emergency services in isolated areas (ESIA)

The ESIA concern emergency responses in isolated environments for land-based rescue operations focusing more specifically on medical evacuations. The role of the firefighters usually consists in coordinating the ESIA's interventions and assisting the other interveners through their expertise and equipment. It is important to distinguish between rescue operations and the search for missing persons, for which police services are responsible. The firefighters can facilitate access by paramedic emergency medical technicians to the victims, participate in the evacuation, and supply equipment to carry out these activities. The fire safety services must refer to the *Cadre de référence – L'intervention d'urgence hors du réseau routier* ascertain their roles and responsibilities. **In keeping with the framework established, the members of the fire safety service qualified to provide this service and the adapted equipment must be deployed during this type of intervention.** What is more, the elements in the following table must be determined to include the ESIA in the fire safety cover plan.

Table 2: ESIA-related elements in the fire safety cover plan

Perimeter of the intervention	Number of firefighters trained	Equipment available and location	Applicable reference frameworks
— List and location of the main activities carried out in isolated environments, e.g., off-road vehicles or hiking.	— The number of firefighters trained for ESIA interventions. — The number of firefighters trained who are available during the day, at night, and on weekends.	— A list of the rescue vehicles and their location. — A list of specialized rescue equipment and its location.	— *Cadre de référence – L'intervention d'urgence hors du réseau routier* (MSP)

5.3 First responders

The fire safety cover plan can also indicate that the fire safety service offers a first responder service, which is governed by the Act respecting pre-hospital emergency services and is thus included in the fire safety cover plan for information purposes.

5.4 Other types of intervention

The fire safety services can intervene in types of disasters or accidents other than those mentioned earlier. It should be noted that the interventions must be confined to those for which the fire safety services are usually responsible.

Provision must also be made for collaboration procedures between the interveners, who must act according to the standards and frames of reference in force.

COORDINATION

Coordination is the cornerstone of the establishment and implementation of a fire safety cover plan. The optimization of intervention, close collaboration between interveners in the fire-fighting community and the linkage of the resources available are the best way to protect individuals faced with fire hazards.

Objective 6 describes the intervention optimization approach, i.e., the best conceivable way to deploy the resources available to comply with the requirements of the **strike team** stipulated in Objective 3 and Objective 4. Optimized deployment seeks to ensure the **best response time** of the resources at the time of intervention. Objective 7 specifies the application details concerning the powers related to fire safety that the Act grants the **regional authority**. It also seeks to foster collaboration and **consensus building** among local authorities, defines the **verification mechanisms**, and proposes that certain fire safety-related duties be pooled. Lastly, Objective 8 focuses on the coordination of the participants in the intervention.

Objective 6 – Optimize intervention by fire safety services

Deploy as soon as possible on the site of the fire the requisite strike team at the time of the initial call. Use the resources available leaving aside administrative boundaries. Ensure for all Quebecers that response times satisfy the protection requirements established in Objective 3 and Objective 4. Plan and coordinate such interventions and include them in a deployment protocol. Establish intermunicipal collaboration that makes possible these optimized interventions.

Once a fire breaks out, the challenge consists in promptly deploying to the site of the event the resources required to save lives and reduce property loss. To satisfy the requirement, the entire array of the requisite strike team's resources must reach within these response times the boundary of the property where the scene of operations is located. The deployment of the requisite strike team must be planned in such a way that it complies with the best response times. **Beyond these response times, the optimization approach described in this objective must be implemented to pinpoint the resources that will make up the requisite strike team and ensure prompt intervention.**

The optimization approach is founded on the provisions stipulated to establish the fire safety cover plan, in particular sections 9, 10, and 15 of the Act. The approach consists in **planning intervention on the site of the fire, with the requisite strike team using without delay the resources available in the territory leaving aside the administrative boundaries.** For each building in the territory, the authorities must identify the response resources such as firefighters, vehicles, and water that must be mobilized to form a strike team that can intervene. They must then determine the fire stations from which the resources will be deployed to be the first to arrive on site. Lastly, they must include the resources identified in a deployment protocol submitted to the CSAU incendie that will engage in dispatch at the time of the initial call.

The optimization approach comprises four key stages. The first stage consists in assembling information on the characteristics of the territory, i.e., the urban perimeter, the compliance of the water system, and risk classification, and the resources available, such as firefighters, vehicles, and water. The second stage seeks to pinpoint the resources that can most quickly reach the sites to intervene in each sector of the territory. In the third stage, if the resources are insufficient to assemble the strike team or intervene within the expected response time, additional resources must be identified that can intervene without delay on site. Lastly, the purpose of the fourth stage is to establish the deployment protocols that the CSAU incendie use to dispatch resources at the time of the initial call. The first stage focuses on the information to be assembled while stages 2 and 3 illustrate the application of the optimization approach.

6.1 Information on the characteristics of the territory and the resources available at the time of the initial call

The optimization approach hinges on gathering information already obtained when Objective 1 and Objective 2 were carried out, in particular the characteristics of the territory and the building and those that affect the response. This information must be linked to the requirements of Objective 3 and Objective 4 to identify the strike team applicable and carry out the optimization approach. To apply the optimization approach, it is important to specify the notions pertaining to the availability of resources and response time.

The fire safety service must know the number of firefighters and vehicles and the volume of water available at the time of the initial call in each of its fire stations. This number determines whether it is able to respond alone or whether it will need additional resources to attain the time limits set in Objective 3 and Objective 4.

As for the firefighters, it is important to consider specific factors that affect their availability, e.g., firefighters working for more than one fire safety service and those who are unavailable at certain times of the year because of hunting, harvesting, or seasonal work.

6.2 Response time

It is incumbent upon each fire safety service to determine in its fire safety cover plan the time required to mobilize the firefighters in each of its fire stations, if necessary. The mobilization time added to the travel time between the fire station and the site of the fire determines the response time. The following figures illustrates the components of response time. Account must be taken of the characteristics of the territory mentioned in Objective 1 that can affect the firefighters' travel time.

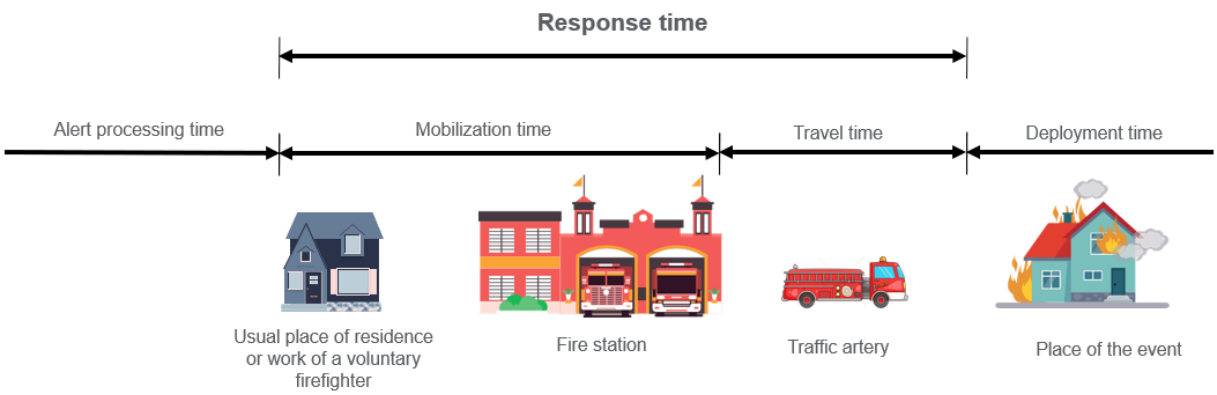

Figure 6: Response time and its components

6.2.1 Mobilization time

Mobilization time commences when the firefighters receive the alert transmitted by the CSAU incendie. The firefighters' mobilization time indicated in the fire safety cover plan must be realistic. The authorities must know the firefighters' mobilization time for each of the determined periods, e.g., during the day, at night, and on weekends. Mobilization time considers:

— the firefighters' employment status (volunteer, part-time, full-time);

— their operational status (internal or external on-duty firefighter or volunteer);

— the method of deployment at the time of an alert (assembly at the fire station or directly at the scene of operations);

— their usual places of residence and work (volunteer firefighters and external on-duty firefighters only);

— the separation distance from the fire station assigned (external on-duty firefighters only).

Mobilization time includes preparation time, i.e., the time necessary to put on personal protective equipment (PPE) and to start the vehicles. When planning mobilization time, two minutes of preparation time will be deemed adequate. For internal on-duty firefighters, mobilization time is confined to preparation time. Mobilization time, including preparation time, ends when the vehicles leave the fire station, i.e., when the firefighters state that they are under way to the scene of operations.

To conclude, the firefighters' mobilization time should be validated by means of statistical analyses drawn from factual, reliable data such as those compiled by the CSAU incendie and the history of the interventions.

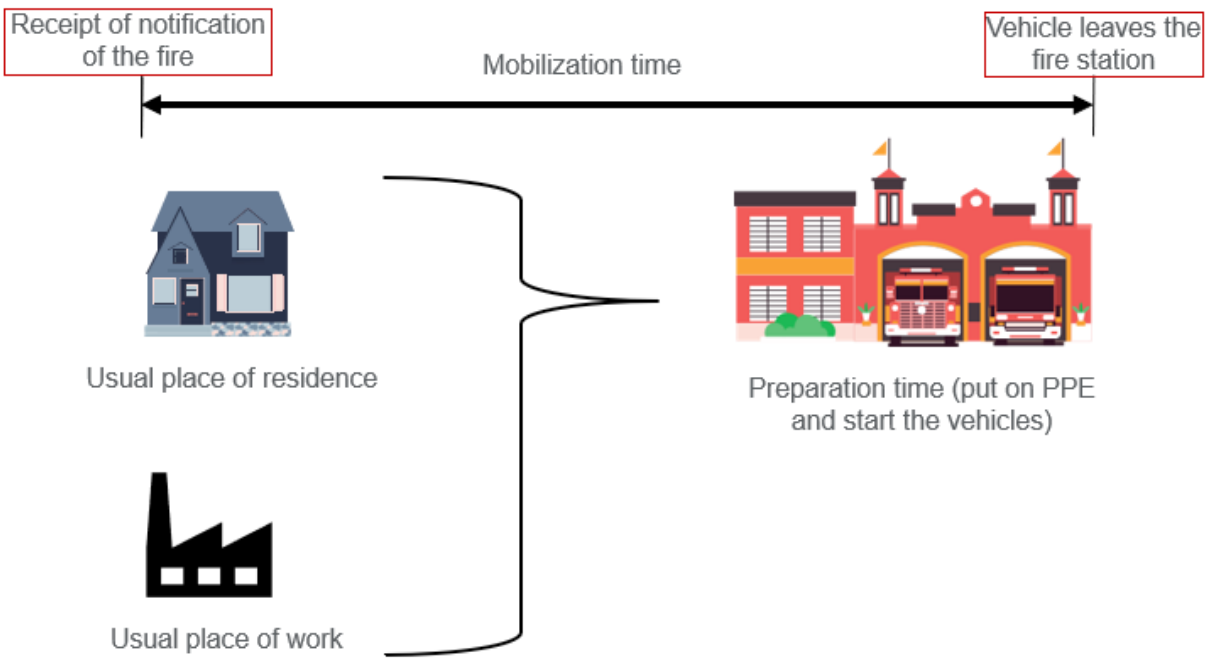

Figure 7: Mobilization time

6.2.2 Travel time

Travel time is the time required to travel from a fire station to the scene of operations. It commences when the vehicles leave the fire station. The method used to calculate the travel time must be based on the maximum allowable speed for each road section. Generally speaking, the geomatics tools that the fire safety services use rely on this speed. The objective of this calculation is to determine the maximum distance that a vehicle can travel in a given time. This time, combined with the mobilization time, makes it possible to calculate the response time and identify which resources can reach the scene of operations the quickest.

In situations where it is impossible to use geomatics software, the calculation of the travel time can be based on an average speed of 60 km/h (1 km per minute).[4] The real travel time should be validated from time to time using the event cards generated during the interventions. The real travel times can be used to adjust the optimization approach. The travel time should also consider the specific characteristics of the territory such as abrupt slopes, vehicle roads, or winding roads in the public domain identified in Objective 1 that can affect the speed of response vehicles.

4. Speed based on Appendix C of NFPA Standard 1142: Water Supplies for Suburban and Rural Fire Fighting.

Travel time ends when the response vehicles arrive at the boundary of the property where the building is located, i.e., where the traffic artery ends, and the private property commences. It is understood that the time required to travel between the boundary of the property and the scene of operations is included in the deployment time, which is examined in the *Guide relatif aux opérations des services de sécurité incendie* du MSP.

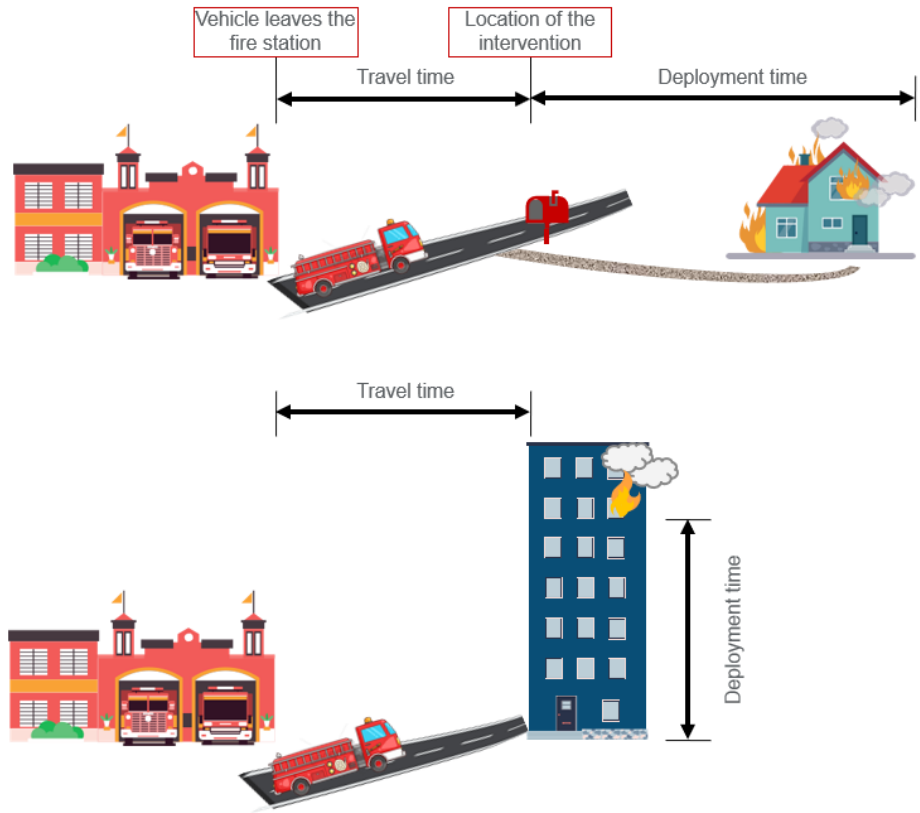

Figure 8: Travel time

6.3 Completion of the optimization approach

The regional authority, in collaboration with local authorities, is responsible for the optimization approach. The following points explain the optimization approach (see Figure 9).

6.3.1 First step: Assemble the data

Assemble the data necessary for the optimization approach, which include:

—the risk classification, including the location of the risks;

—an overview of response resources such as firefighters, vehicles, and water available at each fire station;

—the sectors served by a compliant water system;

—the boundaries of the urban perimeters in force on the land use planning and development plan;

—the factors that affect response time.

6.3.2 Second step: Identify the resources that can reach the scene of operations the quickest

Determine around each fire station with the resources available the 10 minute response time radius for an urban perimeter and the 15 minute response time radius outside the urban perimeter. If the requirement of the strike team (firefighters, vehicles, and water) is met in these response times, the approach must be carried out in the fourth step by including the resources in a deployment protocol.

If the strike team has not been attained at this step, the resources must be identified to complete it according to the method described in the third step.

6.3.3 Third step: Identify the additional resources that can reach the scene of operations the quickest

The third step applies when the strike team or the response time is not attained. It consists in identifying the additional response resources that can reach the scene of operations the quickest, especially by relying on neighbouring fire safety services.

To do so, the response time equivalence point must be used. This concept represents the place where the response time will be the same between the resources from two fire stations. A response time equivalence point is located on the vehicle road that allows access to a risk. Accordingly, all the risks situated between a fire station and the equivalence point must be served by the response resources from this fire station since they can intervene the quickest. Mobilization time and travel time are the factors that affect the distance between a fire station and the equivalence point. The shorter the mobilization time, the farther the equivalence point will be from the fire station. Indeed, a short mobilization time makes it possible to cover a greater distance for a given response time. In the following examples, it is noteworthy that for a given distance, the equivalence points will differ depending on the firefighters' mobilization time.

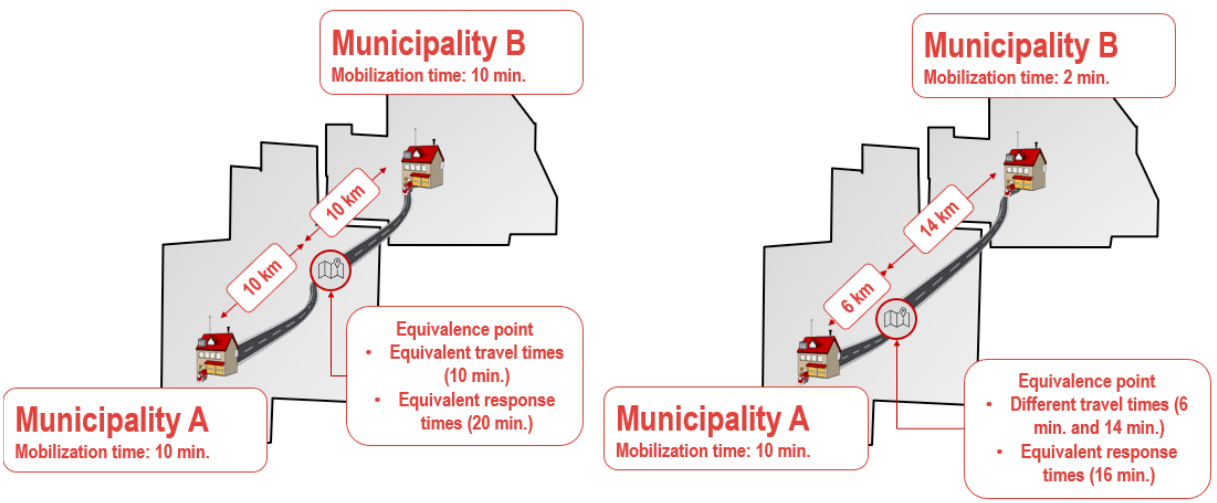

Figure 9: Response time equivalence point

The regional authority determines the response resources of the fire station whose staff can reach a given fire area the quickest based on the equivalence points identified on all the roads in the territory. A fire area includes the entire array of risks situated between the fire station whose staff can reach the fire area the quickest and an equivalence point.

The use of geomatics tools is recommended to divide the territory. The authorities can use the Outil d'optimisation du déploiement des ressources en sécurité incendie (ODRSI) developed by the MSP or the tool that their geomatics service proposes as a decision-support tool.

If the response resources of the fire station that is the quickest to respond comply with the strike team required with regard to the risk that it covers, the optimization approach has been completed. The fire area that possesses the requisite strike team is deemed to be optimized.

If the response resources of the fire station that is the quickest to respond do not comply with the strike team required with regard to the risk that it covers, the response resources must be identified that make it possible to round out the strike team based on resources in the territory. This implies adding response resources from the second quickest fire station to those from the first station. If the strike team is still not complete, the process must be repeated until the requisite strike team is assembled.

When the requisite strike team (firefighters, vehicles, and water) has been attained, it is possible to proceed to the fourth step.

6.3.4 Fourth step: Establish the deployment protocols

For each building, the quickest resources previously identified, e.g., resources from the first and second fire stations, must be indicated in the deployment protocol. The protocol must be submitted to the CSAU incendie to enable it to assign the resources necessary at the site of the fire.

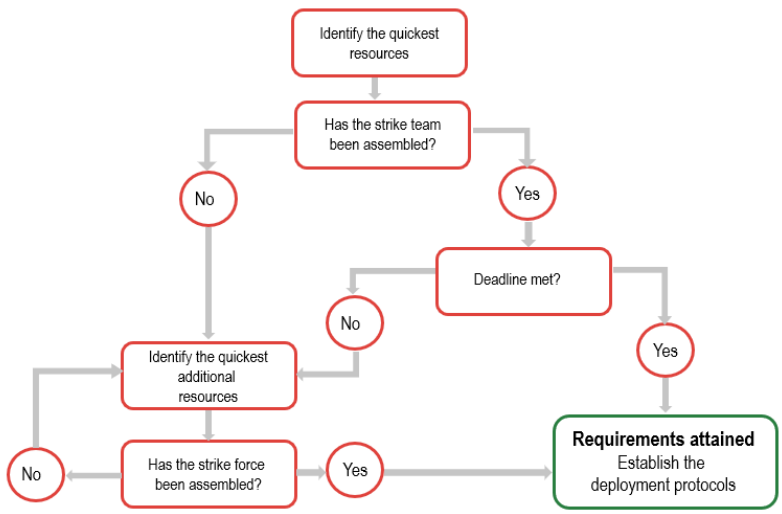

Figure 10: Summary of the optimization approach

6.4 Application of the optimization approach by means of an example

The following section illustrates the application of the optimization approach by means of an example that applies the different optimization principles to a concrete situation. The regional authority could have to consider in its optimization approach parameters other than those used in the example.

6.4.1 Intervention that complies with strike team and response time requirements

According to the requirement defined in Objective 3, a municipality that can deploy the strike team within the requisite response time does not have to mobilize resources from neighbouring municipalities at the time of the initial call.

A municipality that can deploy the strike team within the response time defined in Objective 3 does not have to carry out the optimization approach.

In this example, the fire in a low-risk building is situated in an urban perimeter with a compliant water system. Municipality A has at its disposal 10 firefighters and a ULC-compliant pumper truck with a response time of 10 minutes. While Municipality B has a lower response time, Municipality A is not obliged to resort to Municipality B's resources at the time of the initial call.

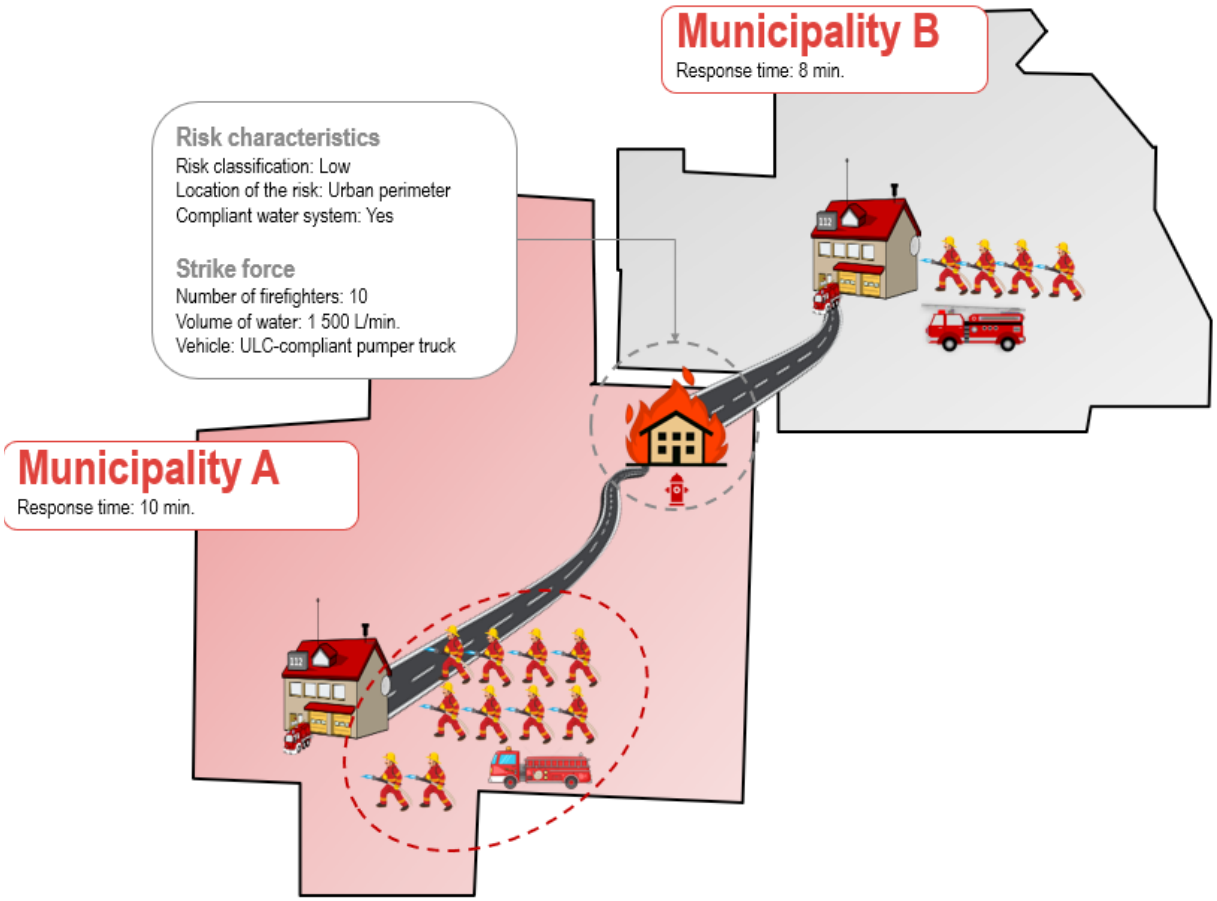

Figure 11: Intervention that complies with strike team and response time requirements

6.4.2 Planning the intervention leaving aside administrative boundaries

It should be recalled that the optimization approach must leave aside the administrative boundaries of the municipalities, regional county municipalities, and administrative regions. Indeed, such administrative boundaries are not necessarily situated at the equivalence point of the two fire stations' response times. Considering the administrative boundaries could result in the deployment of resources with a longer response time to intervene than those available in the neighbouring municipality.

The following figure illustrates a building fire in Municipality A but situated near Municipality B. In this instance, Municipality B's fire safety service has a shorter response time to intervene at the site of this fire. The logic of optimization would have it that Municipality B's fire safety service be mobilized and deployed to intervene in the territory of Municipality A.

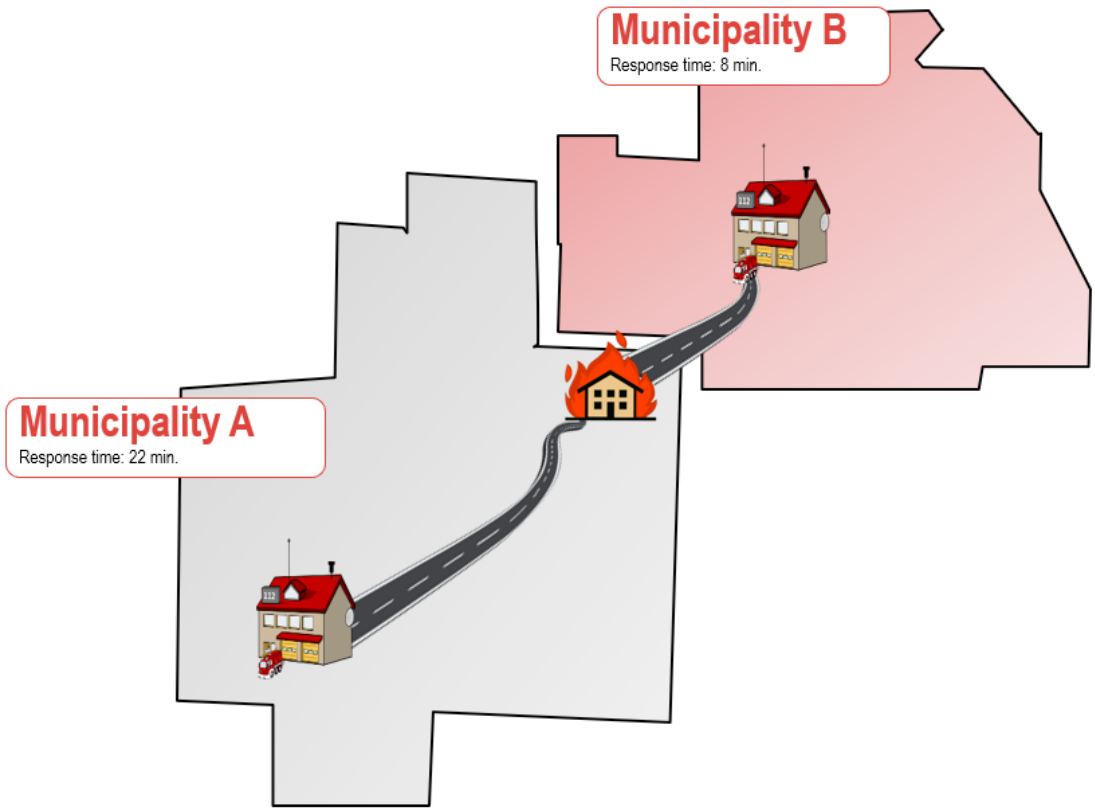

Figure 12: Planning the intervention leaving aside administrative boundaries

In other words, while the fire is in Municipality A, it is Municipality B's fire safety service that must be mobilized and deployed first because of its quicker response time.

6.4.3 Intervention by resources from two fire stations to assemble the strike team

Using the example of a fire in a low-risk building situated in the urban perimeter of a municipality of 10 000 inhabitants or more served by a compliant water system, the strike team to be deployed on the scene of operations comprises 10 firefighters and a ULC-compliant pumper truck.

In this example, the fire station in Municipality B has four firefighters and a ULC-compliant pumper truck. It does not, therefore, possess the resources necessary to establish the requisite strike team. However, this fire station's resources must be deployed at the scene of operations at the time of the initial call since they can intervene the quickest. Municipality B's resources are rounded out by those of Municipality A. In this example, combining the resources of Municipality A and Municipality B makes it possible to assemble the requisite strike team at the time of the initial call.

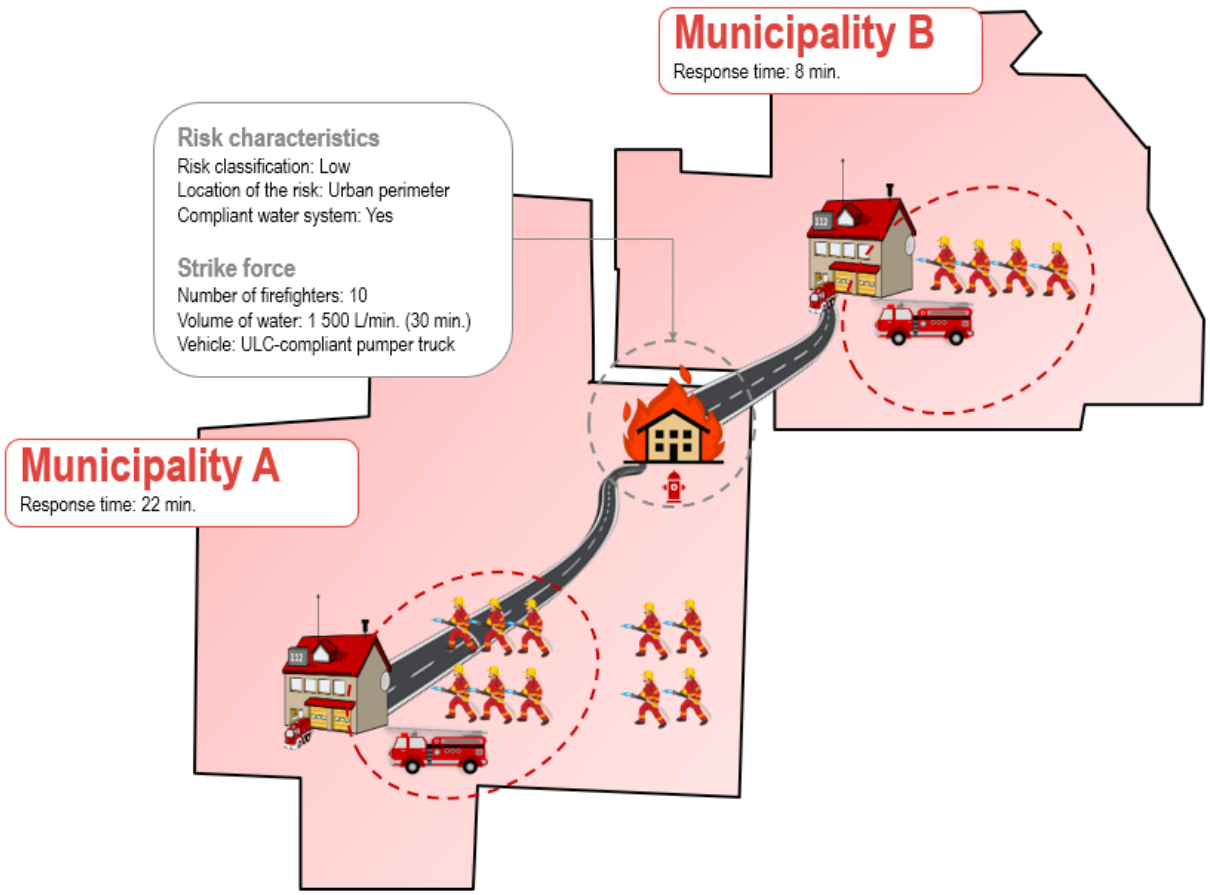

Figure 13: Intervention by resources from two fire stations to assemble the requisite strike team

6.4.4 Intervention by resources from several fire stations to assemble the strike team

It will be necessary in several situations to mobilize and deploy at the fire scene resources from several fire stations to assemble the strike team. Such resources, located at different sites, must be mobilized and deployed in a way that reduces to a maximum the response time. The following example illustrates a low-risk building fire in the presence of a compliant water system inside the urban perimeter of a city of 10 000 inhabitants or more. Ten firefighters and at least one ULC-compliant pumper vehicle must be deployed. It is, therefore, necessary to identify the resources, which, based on those available in the territory and leaving aside the municipal boundaries, will make it possible to promptly assemble the requisite strike team.

It is possible to observe that Municipality A's fire safety service comprises three firefighters and Municipality B's fire safety service, four. Accordingly, the mobilization alone of the resources from the municipality whose resources can intervene the most rapidly and the municipality where the fire scene is located does not make it possible to assemble the strike team comprising 10 firefighters. It is, therefore, necessary to mobilize and deploy resources from the third municipality whose resources can intervene the quickest. The three firefighters from Municipality C must also be mobilized to assemble the requisite strike team.

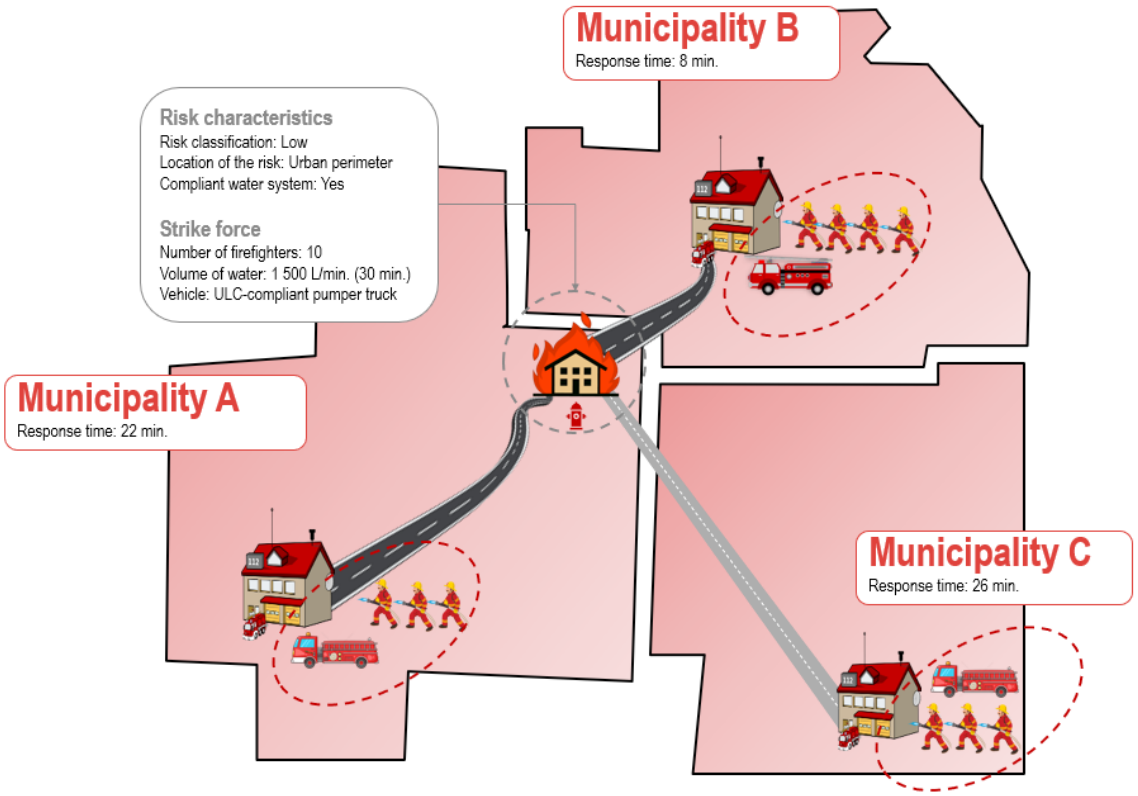

Figure 14: Intervention by resources from several fire stations to assemble the requisite strike team

In this example, the response time of the response resources from Municipality A's fire station is 22 minutes, that of Municipality B's fire station, eight minutes, and that of Municipality C's fire station, 26 minutes. The four firefighters from Municipality B are the first to arrive at the fire scene. They will be followed by three firefighters from Municipality A, then three firefighters from Municipality C. Response time is calculated when the entire array of response resources from the fire safety services arrive, i.e., 26 minutes. In this example, to obtain an optimized intervention, the response time is 26 minutes and becomes the protection objective to be attained.

6.4.5 Intervention in the absence of a compliant water system

In the absence of a compliant water system, at least one ULC-compliant tanker truck must be deployed at the time of the initial call. Furthermore, the entire array of vehicles deployed must contain a minimum of 15 000 L. To intervene in the case of a low-risk building in an urban perimeter in the absence of a compliant water system, the fire safety service must have at its disposal at least one ULC-compliant pumper truck and at least one ULC-compliant tanker truck. The authority responsible for the intervention must mobilize and deploy the entire array of vehicles required to provide the requisite volume of water.

In this example, Municipality A's quintuple combination pumper has a 3 500 L reservoir. Municipality B's pumper truck has a 3 500-L reservoir, and the tanker truck has a 10 000-L reservoir. The mobilization and deployment at the time of the initial call of these vehicles provides the requisite volume of water. However, the strike team comprising eight firefighters in the absence of a compliant water system will not be attained before the arrival of at least one firefighter from Municipality C. In this example, to achieve an optimized intervention, the response time objective is still 26 minutes for this sector and becomes the protection objective to be achieved.

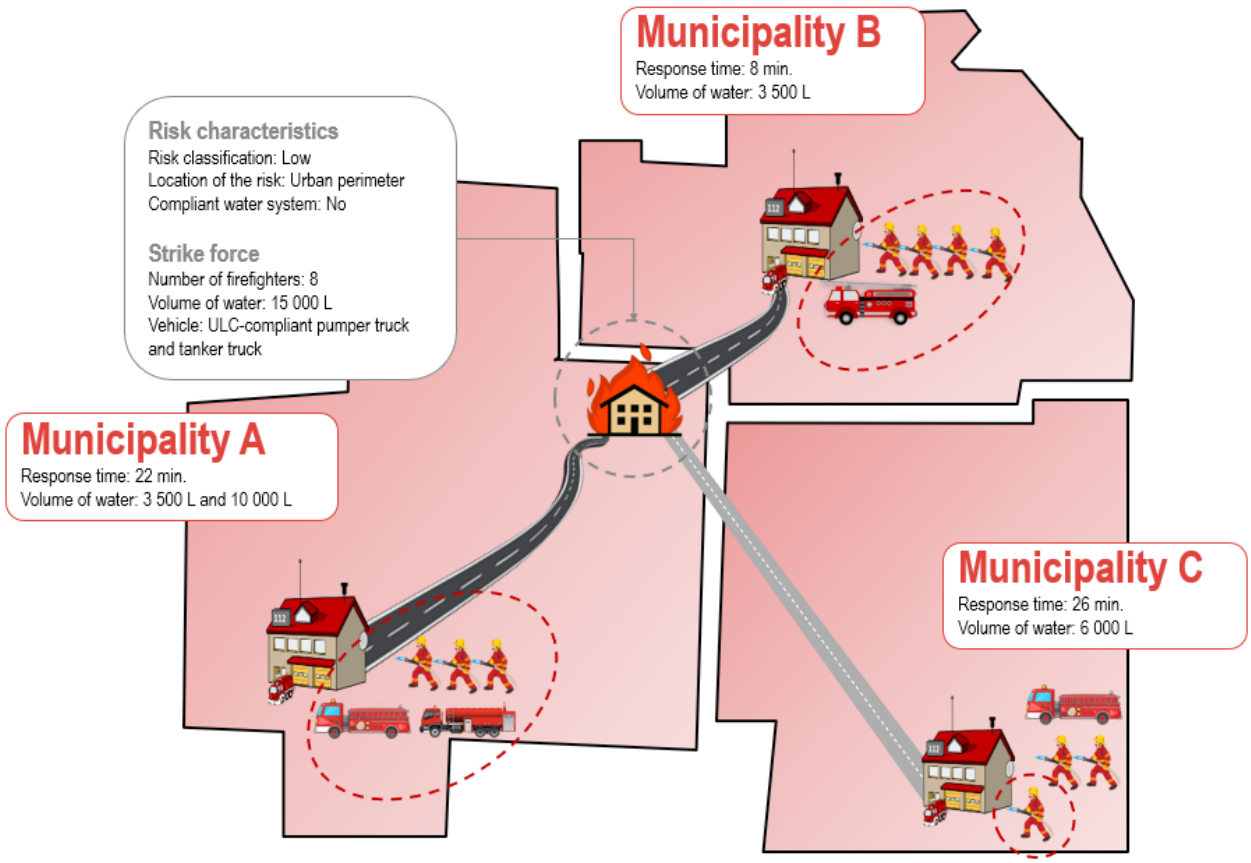

Figure 15: Intervention in the absence of a compliant water system

6.4.6 Intervention with a non-compliant tanker truck

In the absence of a compliant water system, at least one ULC-compliant tanker truck must be deployed at the time of the initial call. Furthermore, the entire array of vehicles deployed must contain a minimum of 15 000 L. In this same example, to intervene in the case of a low-risk building in an urban perimeter in the absence of a compliant water system, the fire safety service must have at its disposal at least one ULC-compliant pumper truck and at least one ULC-compliant tanker truck. The authority responsible for the intervention must mobilize and deploy the entire array of vehicles required to provide the requisite volume of water.

In this example, Municipality A's ULC-compliant pumper truck has a 3 500 L reservoir. Municipality B's ULC-compliant pumper truck has a 3 500-L reservoir, and the **non-compliant** tanker truck has a 10 000 L reservoir. The mobilization at the time of the initial call of these resources attains the requisite number of firefighters and volume of water to assemble the strike team but does not meet the requirement concerning the ULC-compliant tanker truck. It is necessary to deploy Municipality C's tanker truck to meet this requirement. In this example, to achieve an optimized intervention, the response time objective is still 26 minutes for this sector and becomes the protection objective to be attained.

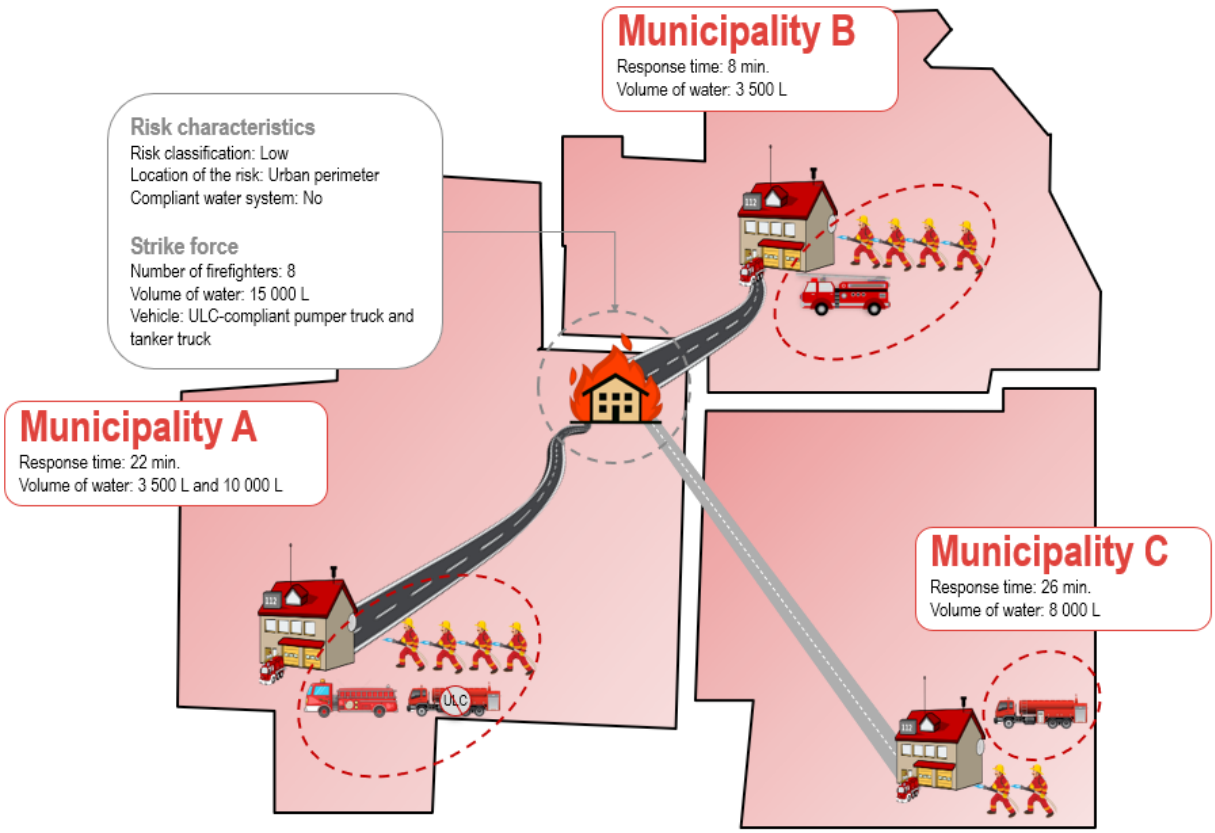

Figure 16: Intervention with a non-compliant tanker truck

Objective 7 – Coordinate fire safety at the regional level

Define the roles and responsibilities of local and regional authorities regarding fire safety. Foster collaboration between local stakeholders to better prevent fires and better intervene when they occur. Implement consensus-building and support structures aimed at enhancing the optimization and effectiveness of interventions. Coordinate the elaboration and implementation of the fire safety cover plan following the example of fire safety strategic planning. Determine a verification and evaluation procedure concerning the degree of attainment of the measures stipulated in the plan.

The Act attributes to regional authorities responsibility for fire safety planning and coordination. The regional authority ensures pooling, support, and consensus building in fields such as land-use planning, economic development, and residual materials management. It must also play a role with regard to fire safety. **In short, the regional authority must be a mainstay of the coordination of the activities carried out by the local authorities regarding risk management, prevention, and intervention pertaining to fire safety.** It must display leadership in the municipalities, especially by establishing and creating and overseeing consensus-building committees, fostering the grouping of resources, and offering its support to fire safety services. The regional authority provides a link between the municipalities and between the municipalities and the MSP.

This planning takes the form, pursuant to section 8 of the Act, of a fire safety cover plan that conforms to these Policies. The following table indicates the key steps in the elaboration of the plan.

Table 3: Steps, coordinators, and relevant sections of the FSA pertaining to the elaboration of the fire safety cover plan

	Step	Coordinators	Sections of the FSA
1	Provide to the regional authority the data necessary to elaborate the plan.	Local authorities	Section 13
2	Propose optimal protection objectives and strategies following the analysis of the data.	Regional authority	Section 14
3	Give an opinion on the proposals.	Local authorities	Section 15
4	Determine the optimal protection objectives for each risk category or each portion of the territory defined in the wake of the discussions. Determine the anticipated measures to attain the objectives.	Regional authority	
5	Determine the specific measures and conditions governing implementation and include them in the plan adopted by the authority responsible.	The authority responsible for the measure	Section 16
6	Ensure that the implementation plans comply with the objectives adopted and the anticipated measures. Incorporate the implementation plans into the draft plan. Establish a procedure to periodically verify the efficacy of the measures implemented and the attainment status of the objectives adopted.	Regional authority	Section 17
7	Submit the proposed plan for public consultation and, if necessary, make the necessary adjustments.	Regional authority	Sections 18 and 19
8	Submit the proposed plan accompanied by the requisite documents for attestation to the Minister and modify it, if the need arises.	Local authorities and the regional authority	Sections 20 to 22
9	Adopt the plan once the certificate of conformity has been issued and disseminate a notification indicating the date of coming into force. Submit a copy and a summary of the plan to the bodies concerned. Preserve in its office the documents submitted for consultation and reproduction.	Regional authority	Sections 23 to 27

Once the fire safety cover plan is in force, the regional authority must ensure follow-up to the measures to attain the objectives as defined in the fire safety cover plan implementation plan.

It should be remembered that collaboration between the local and regional authorities is necessary at all stages of the elaboration of the fire safety cover plan and its implementation. The Act obliges the municipalities to provide the requisite information to elaborate the fire safety cover plan and activity report.

Considering the importance of this aspect from the standpoint of the effectiveness of fire safety interventions and to ensure the health and safety of firefighters, the organizations concerned must ensure that communications systems are interoperable throughout the territory of their RCM. The regional authority must play a role to attain this objective. What is more, it is desirable for the authorities responsible for the interventions to harmonize their communications between them by drawing inspiration from the principles mentioned in the MSP's *Guide relatif aux opérations des services de sécurité incendie*, e.g., radio codes.

7.1 Collaboration expected between local stakeholders

The elaboration of the fire safety cover plan is a process that requires the participation of numerous stakeholders to ensure its success. This includes the active participation of elected representatives, senior managers in the municipalities, fire safety services branches, the board and management of the RCM, and the latter's fire safety coordinator. Several municipal services and several RCM services such as the urban planning and land-use planning service, the property assessment service, or the geomatics service, could be asked to provide complementary expertise.

The contribution of these stakeholders reveals the challenges and issues that the territory is facing and clarifies opportunities to enhance the effectiveness of fire safety, thus promoting the introduction of common solutions that benefit all residents. Collaboration between the urban planning services and land-use planning services and with the fire safety services supports the attainment of Objective 1 and Objective 2.

The collaboration and consultation expected among the stakeholders should be maintained throughout the implementation of the fire safety cover plan. Each authority responsible for a measure included in the implementation plan must carry out the measure in collaboration and consultation with the other authorities concerned.

7.2 Implement consultation and support structures

To facilitate consultation among the stakeholders, the regional authority must ensure ongoing follow-up to the fire safety mandates. To do so, it is desirable to appoint a coordinator and to establish bodies reserved for consultation regarding fire safety. It has been observed that the regional authorities with such a resource and such bodies can more readily elaborate and implement their plan.

The role of the coordinator is to oversee the fire safety cover plan elaboration process and support its implementation in all the municipalities. The coordinator is the key resource person in the regional authority with respect to all fire safety-related planning, organization, verification, and evaluation activities.

The establishment of a fire safety committee under the auspices of the regional authority is an option that most RCMs advocate. The establishment of such a committee maintains the consultation mechanisms necessary to elaborate the fire safety cover plan and follow-up to its implementation. The presence is desirable on this committee of local elected officials, the directors of fire safety services, the directors general of the municipalities, and the coordinator. To ensure the permanent nature of the committee, it should meet at least once a year.

7.3 The fire safety cover plan is a planning tool

The fire safety cover plan is an integrating document that contains information on the risks present in the territory and the resources and infrastructure allocated to fire safety. It is a multi-year planning tool that facilitates the adaptation of fire safety resources to changes in the territory. It also constitutes a decision-support tool for elected municipal officers and enables them to determine the human, physical, and financial resources required to attain the objectives set. Each authority concerned, i.e., municipalities, intermunicipal management boards, and RCMs, must ratify the parts of the plan for which it is responsible.

The public nature of the fire safety cover plan and the consultation process required when it is elaborated make the document a commitment by the authorities to residents. It sets the level of protection that they can expect regarding fire safety. The fire safety cover plan is a continuous improvement tool. The periodic evaluation of the outcomes of its implementation implies the plan's constant updating and modification, if necessary.

7.4 Evaluation and verification mechanisms

It is important to ensure that the protection objectives determined in the fire safety cover plan are evaluated and verified in order to measure their efficacy. The activity report and the verification procedure stipulated in the plan serve this purpose.

In accordance with section 35, all the authorities responsible for applying the measures stipulated in the fire safety cover plan implementation plan must produce an activity report. The activity report must be subject to a resolution of the municipal council and be submitted subsequently to the regional authority. The report specifies the status of the measures and indicates the fire safety projects planned for the coming year.

Additionally, every two years, the regional authority must produce a consolidated activity report including a status report on the attainment of the optimal protection objectives adopted and the measures expected in the fire safety cover plan. The activity report must be subject to a resolution of the RCM council. The MSP makes available tools to support the production of such reports. For the application of section 35, the regional authority can request from the local authority or the intermunicipal management board concerned any information that it deems necessary within the time limits that it determines.

The regional authorities have a role to play in the verification of the efficacy of the measures implemented and the attainment status of the objectives adopted. When an objective is not attained or a shortcoming is noted in the implementation of a measure, the RCM should ascertain the reasons for the discrepancy in order to propose solutions.

The responsibilities regarding accountability and verification of local and regional authorities requires them to maintain constant communications links between them.

7.5 Emphasize the pooling of certain fire safety-related functions

In addition to the support that the regional authority must offer local authorities, the regional authority should emphasize the pooling of fire safety-related functions. Doing so seeks to promote enhanced collaboration and coordination of the measures in the territory. Several pooling models can be contemplated. For example, it is possible to ask the RCM to assume certain administrative functions pertaining to fire safety or to ask a central city to become a hub of expertise for the benefit of neighbouring cities. It is possible to consult several examples of the pooling of certain functions related to fire safety in point 7.5.1.

The regional authority could also act as a facilitator in the implementation of collaboration or the harmonization of practices. This could be achieved by means of joint training sessions between the fire safety services or concerted procurement planning to enhance the interoperability of response and communications equipment.

Such pooling affords numerous benefits, in particular sharing capital investments, apportioning equipment and vehicle costs, enhancing service quality, achieving economies of scale, avoiding equipment duplications, and providing enhanced public services.

7.5.1 Examples of functions that can be pooled

— Administration:

- a common headquarters (unified management);
- the management of firefighter recruitment and training;
- the purchase, maintenance, and inspection of vehicles, equipment, and response accessories of the fire safety services in the territory;
- the purchase of equipment to ensure occupational health and safety;
- the establishment of a regional training centre;
- the establishment of an integrated emergency communications and resource dispatching system;
- the purchase of equipment and software to optimize the planning of prevention activities and resource deployment.

— Prevention:

- the establishment of a regional prevention service, including the hiring of shared safety practitioners for the benefit of all the municipalities;
- the evaluation program and the analysis of incidents to create a regional knowledge base aimed at better pinpointing risks and better defining fire prevention measures;
- smoke detector verification programs and the inspection of moderate, high, and extreme risks;
- public awareness-raising activities, especially promotional campaigns and fire prevention informative capsules.

— Intervention and operational support:

- the establishment and management of specialized response units such as nautical rescue units, technical rescue units, and extrication units;
- the management of response equipment such as the ladder truck;
- the management of a unified emergency communications system;

– a team to research the causes and circumstances of fires;

– the production and updating of response plans;

– the development and maintenance of water points;

– the maintenance of fire hydrants and the evaluation of their flow rate;

– the harmonization and coordination of training.

Objective 8 – Coordinate response resources

Coordinate fire safety resources with those of other stakeholders that intervene when disasters occur. Collaborate with the partners, including rescue organizations, pre-hospital emergency services, and police services. Establish partnerships aimed at specifying each partner's fields of action.

Fire safety services must frequently intervene when disasters occur, which requires coordination with the other partners. Some examples are police services when it is necessary to establish a security perimeter; the Ministère des Transports et de la Mobilité durable when a road must be closed, or Hydro-Québec during an intervention that concerns its facilities. In some cases, collaboration with a business such as a rail company or major industry is necessary.

Such coordination with the other functions devoted to public safety must be harmonious and obstacle-free. The regional authority can establish the roles and responsibilities of the stakeholders, establish response protocols, and foster collaboration between the stakeholders. In other words, the factors that affect fire safety must be planned in partnership with the other stakeholders.

Indeed, fire safety planning should serve to establish partnerships between the stakeholders in a given community. This exercise can focus on topics such as research on the causes and circumstances of fires, investigations of suspicious fires, the organization of rescue services, and planning of certain emergency measures. Certain fire safety functions closely affect the jurisdiction of other emergency interveners, in particular when victims are rescued. It is important to establish procedures that specify each one's respective duties. The authorities responsible must implement coordination mechanisms to ensure quality service delivery at all times and avoid conflicts of jurisdiction.

To this end, the regional authority must implement and oversee a regional consensus-building and coordination committee that assembles the stakeholders concerned, which must meet at least once a year. It has a mandate to clearly define each one's roles and responsibilities in the context of emergency responses and establish intervention protocols to avoid improvisation at the time of intervention. The committee should keep up to date the contact information of the representatives of response resources. From an administrative standpoint, it is in the interests of the municipalities and the partners to clearly determine the limits of their respective operational frameworks. The RCMs should rigorously plan this regional coordination committee. More broadly, the committee could have a mandate to engage in feedback following a joint intervention with the stakeholders concerned. Such feedback would enable the interveners to assess the efficacy of their joint operations in order to enhance future collaboration. Moreover, the committee could, if necessary, appoint partners with expertise in specific fields.

It will be in the interveners' interest, additionally, to coordinate their work methods and equipment to facilitate collaboration. It is also possible to engage in joint simulations and training. What is more, given that communications play a vital role in joint operations, the interveners should ensure the interoperability of communications systems with the other organizations concerned.

CONCLUSION

The Policies reaffirm the importance of prevention as an essential component of the risk management model. They specify the minimum parameters of the strike team required for the intervention and the conditions for its optimization. They reiterate the role of the regional authority in the establishment and coordination of the implementation of the fire safety cover plan. All participants in fire safety in Québec will find there the confirmation of the role that they must play and the responsibilities that they must assume to protect the public.

These key directions are established even though the Act now stipulates that fire safety cover plans are valid for 10 years. The period of validity imposes sustained, thoughtful planning by decision-makers to consider changing communities, the densification of cities, and the emergence of innovative technologies, to name but a few of the significant factors. It will be to the authorities' advantage to adopt a shared perspective that fosters collaboration and consultation and to develop a management framework centred on continuous improvement. For this reason, these Policies must not be perceived as an arbitrary limit but instead as a starting point for innovation and the quest for excellence.

The fire safety services whose service offerings exceed what is prescribed in the Policies must not see this as an invitation to reduce the quality of services offered to the public. Instead, they must continue to play a leadership role in the development of fire safety in Québec. Such a role will benefit the entire array of fire safety services and Quebecers.

The MSP intends to continue to collaborate with the fire safety sector by drawing inspiration from the best practices and recognized standards so that the Policies satisfy current and future challenges.

Glossary

Term	Definition
Adjusted strike team	See adjustment of the strike team.
Adjustment of the strike team	The partial deployment of the strike team required to respond to an alert from a fire alarm system transmitted by a monitoring station in the absence of any other indication of the presence of a fire.
Authority responsible	Refers to the authority responsible for the application of the measures stemming from the planning of prevention and intervention activities. This includes the local authority or, depending on the terms of the agreement, a neighbouring local authority, a regional authority, an intermunicipal fire management board, or the RCM.
Collaboration	A process that consists for the stakeholders in working in partnership at all stages in the elaboration and implementation of the fire safety cover plan in order to make it a common project.
Conflagration	A vigorous, extensive fire that can cause the total loss of the building or spread to other buildings.
Consultation	The process of ongoing discussions that consists for a responsible authority in making decisions that fall under its field of responsibility bearing in mind the decisions' repercussions on the other authorities with which it must collaborate.
Coordination	The process, usually assigned to a person or a body, aimed at structuring collaboration, consensus building, and liaison between the stakeholders in order to more effectively carry out a common project.
CSAU incendie	A secondary emergency call centre is the dispatch centre for a fire safety service.
Deployment	The movement of firefighters and their equipment to the scene of operations.
Deployment protocol	The entire array of strategies established, including the requisite strike team at the time of the initial call for a building fire, to dispatch the human and physical resources of a fire safety service at the time of an intervention and transmitted to the CSAU incendie. The entire territory that the fire safety service covers must be subject to the appropriate deployment protocols.
Dispatching	The application by the CSAU incendie of the stipulated deployment protocol at the time of an emergency call.
External on-duty firefighter	For the purposes of these Policies, an external on-duty firefighter is a firefighter who is available to respond to an emergency call during a defined period. During this period of availability, the external on-duty firefighter must remain inside a defined distance from the fire station in order to guarantee the mobilization time stipulated. The fire safety service must define such conditions.
Fire	A fire that threatens a low-risk, moderate-risk, high-risk, or extreme-risk building and in respect of which the deployment of the strike team stipulated in these Policies is required. Smoke or the release of abnormal heat of unknown origin that raise the fear of ignition or that a fire is under way or could occur in a building are put in the same category as a fire. This excludes a fire that does not threaten a low-risk, moderate-risk, high-risk, or extreme-risk building, e.g., a vegetation fire, vehicle fire, or garbage can fire.

Term	Definition
Fire hydrant	A discharge pipe with a valve and spout at which water may be drawn from a water main, to which are connected fire hoses.
Fire response team	The team established by a private company to combat fires inside its facilities.
Full strike team	The full strike team comprises the firefighters assigned to rescue and firefighting operations, the requisite volumes of water, and the response equipment used to pump and transport the water required at the time of the initial call. This strike team is applicable in all cases, except those that allow for the use of a reduced or adjusted strike team. See the composition of the full strike team in Table 4 in Appendix B.
Initial call	The initial dispatching by the CSAU incendie of fire safety services resources to the scene of operations according to the deployment protocol established.
Internal on-duty firefighter	For the purposes of these Policies, internal on-duty firefighters must be present in the fire station during their period of availability to respond to an emergency call. They must remain in the immediate vicinity of the fire station during the entire duty period. Internal on-duty firefighter can also include firefighters who, using a pumper response vehicle, engage in the prevention activities stipulated in the fire safety cover plan outside the fire station, provided that they are able to respond to an emergency call within the prescribed response time.
Interoperability	The capacity of equipment, in particular communications systems, to operate jointly.
Intervention	The deployment of the requisite strike team on the site of an emergency situation in compliance with the protocols stemming from the fire safety planning process. For the purposes of these Policies, the intervention must be subject to an optimization approach to obtain the best possible response time.
Mobilization	A call made by the CSAU incendie to the firefighters according to the deployment protocol established to notify them of an emergency.
Optimization	The outcome of the approach that consists in planning the requisite strike team's intervention at the fire scene using the most readily available resources in the territory, leaving aside the administrative boundaries.
Other disasters and accidents	Any emergency situation other than a building fire that requires the deployment of resources from the fire safety services.
Property line	The property line corresponds to the junction between the public domain, especially a vehicle traffic artery, and the edge of a private property, i.e., the entrance to the property. For the purposes of these Policies, travel time ends and deployment time begins when the private property line is crossed.
Reduced strike team	An exception to the full strike team that can apply to an intervention in the absence of a compliant water system to allow for the assignment of resources to water servicing. It can also apply to municipalities with fewer than 10 000 inhabitants. See the composition of the reduced strike team in Table 5 in Appendix B.
Requisite strike team	The complete, reduced, or adjusted strike team according to the requirements stipulated in these Policies.
Resources	For the purposes of these Policies, resources refer to staff such as firefighters, officers, and safety practitioners, the volumes of water, the response vehicles and other equipment, in particular communications equipment, and the infrastructure necessary to intervene at a fire or other disaster or accident.
Response time equivalence point	Represents the place where, on a vehicle traffic artery, the response time of the resources from two fire stations will be the same.
Risk	For the purposes of these Policies, risk has two meanings, depending on the circumstances. It includes any element that can impede the attainment of the protection objectives indicated in the fire safety cover plan, especially the factors that affect response time. Moreover, a building classified according to the risk classification stipulated in Appendix A is comparable to a "risk".

Term	Definition
Safe	For the purposes of these Policies, a safe rescue and firefighting intervention is one that is planned and carried out in accordance with good practices in order to reduce as much as possible risks for the firefighters.
Scene of operations	For the purposes of these Policies, the scene of operations corresponds to the precise location of a property, i.e., a portion of a lot or a building, where the fire service must intervene to engage in firefighting and rescue operations. It also corresponds to the site where the firefighters must intervene in another type of disaster or accident such as a road accident or the site where a victim must be rescued.
Strike team	The strike team comprises the firefighters and officers assigned to rescue and firefighting operations, the requisite volumes of water, and the response vehicles used to pump and transport the water required at the time of the initial call. It does not include the firefighters and vehicles assigned to water servicing.
Subsequent alerts	Dispatching by the CSAU incendie of additional fire safety services resources at the request of the response official at the scene of operations according to the deployment protocol established.
Urban perimeter	Corresponds to the urbanization perimeter stipulated in the Act respecting land use planning and development (c. A-19.1).
Usual place of residence	For the purposes of the mobilization time planning process, it corresponds to the main address where a volunteer or external on-duty firefighter lives.
Usual place of work	For the purposes of the mobilization time planning process, it corresponds to the address where a volunteer or external on-duty firefighter works.
Vehicle traffic artery	A public or private road that enables response vehicles to access the property on which the scene of operations is located.
Water point	This infrastructure includes a connection to a non-pressurized water supply point that allows fire response equipment to connect directly and draw water by suction. Water points are accessible year-round.
Water supply	Transportation to the scene of operations by means of tanker vehicles of water drawn from the water supply point, water point, or fire hydrant.
Water supply point	An undeveloped site where it is possible to access a water body such as a lake or river. The use of the site requires specific equipment and additional preparation time prior to pumping the water. Factors such as winter conditions can hamper access to water supply points.

Abbreviations and acronyms and initialisms

CSAU incendie	Secondary emergency call centre for a fire safety service
DGSITU	Direction générale de la sécurité incendie et des télécommunications d'urgence
ENPQ	École nationale des pompiers du Québec
ESIA	Emergency services in isolated areas
FSA	Fire Safety Act
FSCP	Fire safety cover plan
FSS	Fire safety service
MAMH	Ministère des Affaires municipales et de l'Habitation
MELCCFP	Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs
MSP	Ministère de la Sécurité publique
MT	Mobilization time

NFPA	National Fire Protection Association
PPE	Personal protective equipment
RCM	Regional county municipality
RT	Response time
ST	Strike team
TT	Travel time

Appendix A – Risk classification

The classification presentation is intended to group together diverse types of buildings according to (1) the inherent fire risk that their use poses; (2) the number and vulnerability of their occupants; (3) the complexity of intervention and the risk for firefighters; and (4) the consequences that the loss of the building can engender for the community. It is incumbent upon the authority responsible to classify the buildings in its territory bearing in mind the following criteria.

Class	Classification criteria	Examples (not exhaustive)
Low risks	— A detached residential building of not more than two storeys and including two or fewer dwelling units — A rooming house with a maximum of four rooms — A small, isolated building	— A detached, semi-detached or duplex single-family home — A bi-generational dwelling or a house with a secondary suite — A cottage — A mobile home — A shed or a detached residential garage — An abandoned barn
Moderate risks	— A residential building of at least three storeys and comprising three to nine dwelling units — A rooming house with five to nine rooms — A commercial building of not more than three storeys — An industrial establishment in Group F, Division 3 — Another building with a floor space of not more than 600 m^2	— A triplex or row house single-family residence — A multi-unit building — A professionals' office — A commercial establishment (a detached boutique, a convenience store without a service station, a grocery store) — A warehouse
Extreme risks	— A residential building of four to six storeys — A residential building comprising more than nine dwelling units — A rooming house with more than nine rooms — A commercial building of four to six storeys — A hotel in which each unit has access to the exterior — A hotel of three or fewer storeys — A site without significant amounts of hazardous materials that pose a fire risk — An industrial establishment in Group F, Division 2 — An agricultural building — Another building with floor space of more than 600 m^2	— A building comprising nine or more dwellings — A motel — A business establishment — A commercial establishment such as a grocery store or a big boutique — A welding workshop, a garage, a printing house, a service station — A pigsty or a stable

Class	Classification criteria	Examples (not exhaustive)
Extreme risks	— A residential or commercial building of more than six storeys — A building whose main use is in Group A — A building whose main use is in Group B — A building whose occupants cannot evacuate on their own — A building involving a difficult evacuation because of the high number of occupants — A building where the consequences of a fire are likely to affect the functioning of the community — An industrial establishment in Group F, Division 1 — A building that displays an elevated risk of fire, i.e., where significant quantities of combustible, flammable, or explosive materials are found	— A high-rise building — A theatre, arena, cinema, church, school, day care centre, or university — A hospital, seniors' home, or intermediate resource — A detention facility — A shopping centre — A hazardous materials warehouse, paint factory, chemical products plant, or flour mill — A water treatment plant, port facility, city hall, disaster shelter, police station, or fire station — An adjoining building in heritage districts

According to the classification of main uses in the National Building Code of Canada – Canada 2015

Appendix B – Full and reduced strike team – Rescue team inside fire attack

Table 4 and Table 5 describe the requisite strike teams comprising 10 and eight firefighters necessary to conduct rescue and firefighting operations in a low-risk building.

Table 4: A full strike team comprising 10 firefighters at the time of the initial call assigned to rescue and firefighting operations in a low-risk building

A full strike team comprising 10 firefighters at the time of the initial call assigned to rescue and firefighting operations in a low-risk building				
Activity	**Number of the firefighter (F)**	**Number of firefighters**	**Total number of firefighters**	**Objectives and clarifications**
Direct the operations while ensuring the interveners' occupational health and safety	F1	1	1	Direct the operations to maximize the effectiveness of fire suppression activities and ensure the firefighters' safety. This intervener must be an officer who possesses the required training.
Establish the water supply	F2	1	2	Ensure fire suppression activities and rescue operations by means of the water supply. This intervener must possess the pumper truck operators' certificate.
Rescue a victim and engage in the inside fire attack	F3 and F4	2	4	Assist a victim as soon as possible and confine the fire to its point of origin.
Save a firefighter	F5 and F6	2	6	Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.
Participate in the inside fire attack and support the inside fire attack team	F7 and F8	2	8	Provide additional resources for the rescue operation and improve fire suppression activities.
Use equipment and accessories to support firefighting operations	F9 and F10	2	**10**	Provide additional resources to maximize the efficacy of fire suppression activities.

The tasks mentioned in this table are provided for information purposes and can vary according to the nature of the fire and the priorities at the time. **The strike team comprising 10 firefighters allows firefighters F7, F8, F9 and F10 to be assigned to specific tasks according to needs, which maximizes rescue and firefighting activities.** If necessary, a fire safety service can resort to subsequent alarms to obtain additional resources.

Table 5: A reduced strike team comprising eight firefighters at the time of the initial call assigned to rescue and firefighting operations in a low-risk building

A reduced strike team comprising eight firefighters at the time of the initial call assigned to rescue and firefighting operations in a low-risk building				
Activity	**Number of the firefighter (F)**	**Number of firefighters**	**Total number of firefighters**	**Objectives and clarifications**
Direct the operations while ensuring the interveners' occupational health and safety	F1	1	1	Direct the operations to maximize the effectiveness of fire suppression activities and ensure the firefighters' safety. This intervener must be an officer who possesses the required training.
Establish the water supply	F2	1	2	Ensure fire suppression activities and rescue operations by means of the water supply. This intervener must possess the pumper truck operators' certificate.
Rescue a victim and engage in the inside fire attack.	F3 and F4	2	4	Assist a victim as soon as possible and confine the fire to its point of origin.
Save a firefighter	F5 and F6	2	6	Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.
Participate in the inside fire attack and support the inside fire attack team ***or*** Use equipment and accessories to support firefighting operations	F7 and F8	2	**8**	Provide additional resources for the rescue operation and improve fire suppression activities. ***or*** Provide additional resources to maximize the efficacy of fire suppression activities.
The tasks mentioned in this table are provided for information purposes and can vary according to the nature of the fire and the priorities at the time. **When the reduced strike team is deployed, firefighters F7 and F8 must prioritize certain activities**. Doing so could reduce the efficacy of the intervention because of the smaller number of resources assigned to the inside fire attack. If necessary, a fire safety service can resort to subsequent alarms to obtain additional resources.				

Table 6 and Table 7 present the rescue and inside fire attack operations for the teams of four and six firefighters stipulated in point 3.3.

Table 6: A team of four firefighters to engage in rescue and inside fire attack operations before the flashover

A team of four firefighters to engage in rescue and inside fire attack operations before the flashover				
Activity	**Number of the firefighter (F)**	**Number of firefighters**	**Total number of firefighters**	**Objectives and clarifications**
Direct the operations while ensuring the interveners' occupational health and safety ***or*** Rescue a victim and engage in the inside fire attack ***or*** Save a firefighter	F1	1	1	Direct the operations to maximize the effectiveness of fire suppression activities and ensure the firefighters' safety. This intervener must be an officer who possesses the required training. ***or*** Assist a victim as soon as possible and confine the fire to its point of origin. ***or*** Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.
Establish the water supply ***or*** Save a firefighter	F2	1	2	Ensure fire suppression activities and rescue operations by means of the water supply. This intervener must possess the pumper truck operators' certificate. ***or*** Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.
Rescue a victim and engage in the inside fire attack ***or*** Save a firefighter	F3 and F4	2	**4**	Assist a victim as soon as possible and confine the fire to its point of origin. ***or*** Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.

The team of four firefighters does not represent a strike team but is the minimum number of firefighters, including one officer, that can conduct rescue operations and engage in the inside fire attack when the fire has not yet reached the flashover point. **When two firefighters conduct a rescue operation or engage in the inside fire attack, the other two, despite their duties at the time, must be prepared to intervene immediately in the event of a distress call.** When the other resources that round out the requisite strike team arrive, refer to the attribution of activities for full and reduced strike teams in Table 4 and Table 5.

Table 7: A team of six firefighters to engage in rescue and inside fire attack operations after the flashover point

A team of six firefighters to engage in rescue and inside fire attack operations after the flashover point				
Activity	**Number of the firefighter (F)**	**Number of firefighters**	**Total number of firefighters**	**Objectives and clarifications**
Direct the operations while ensuring the interveners' occupational health and safety ***or*** Rescue a victim and engage in the inside fire attack	F1	1	1	Direct the operations to maximize the effectiveness of fire suppression activities and ensure the firefighters' safety. This intervener must be an officer who possesses the required training. ***or*** Assist a victim as soon as possible and confine the fire to its point of origin.
Establish the water supply	F2	1	2	Ensure fire suppression activities and rescue operations by means of the water supply. This intervener must possess the pumper truck operators' certificate.
Rescue a victim and engage in the inside fire attack	F3 and F4	2	4	Assist a victim as soon as possible and confine the fire to its point of origin.
Save a firefighter	F5 and F6	2	**6**	Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.

The team of six firefighters does not represent a strike team but is the minimum number of firefighters, including one officer, that can conduct rescue operations and engage in the inside fire attack when the fire has reached the flashover point. **Firefighters F5 and F6 must be prepared to intervene immediately in the event of a distress call. The other firefighters can pursue their activities.** When the other resources that round out the requisite strike team arrive, refer to the attribution of activities for full and reduced strike teams in Table 4 and Table 5.

Appendix C – Strike team stipulated in NFPA Standard 1710

Table 8: A strike team at the time of the initial call advocated by NFPA Standard 1710 for rescue and firefighting operations in a low-risk building

A strike team at the time of the initial call advocated by NFPA Standard 1710 for rescue and firefighting operations in a low-risk building

Presented for information purposes only

Activity	Number of the firefighter (F)	Number of firefighters	Total number of firefighters	Objectives
Direct the operations while ensuring the interveners' occupational health and safety	F1	1	1	Direct the operations to maximize the effectiveness of fire suppression activities and ensure the firefighters' safety. This intervener must be an officer who possesses the required training.
Establish the water supply	F2	1	2	Ensure fire suppression activities and rescue operations by means of the water supply.
Rescue a victim and engage in the inside fire attack (two strike teams)	F3 and F4 F5 and F6	4	6	Assist a victim as soon as possible and confine the fire to its point of origin.
Use equipment and accessories to support firefighting operations	F7 and F8	2	8	Provide additional resources to maximize the efficacy of fire suppression activities.
Save a firefighter[1]	F9 and F10	2	10	Intervene immediately in the event of a distress call from a firefighter conducting a rescue or an inside fire attack.
Provide ventilation[2]	F11 and F12	2	12	Provide additional resources to apply tactical ventilation to maximize the efficacy of fire suppression activities.
Save a firefighter	F13, F14, F15, and F16	5	16, including four officers	Intervene immediately in the event of a distress call from a firefighter. Establish an initial rapid rescue team comprising two firefighters as soon as the first responders arrive and establish a rapid rescue team comprising four firefighters when the strike team is complete.

The full strike team advocated by the standard comprises 16 firefighters, including four officers.

Note 1: The initial rapid rescue team comprises a minimum of two firefighters (F9 and F10). When the full strike team comprising 16 firefighters arrives, the initial rapid rescue team is replaced by a full rapid rescue team comprising a minimum of four firefighters (F13, F14, F15, and F16). The firefighters from the initial rapid rescue team are then reassigned to other support tasks pertaining to rescue and firefighting operations.

Note 2: When an aerial ladder truck is used during the intervention, a firefighter must be assigned permanently to its operation, which increases to 17 the number of firefighters required for the strike team.

Moreover, the standard advocates a travel time of 4 minutes for the first team of four firefighters(response time of roughly 5 minutes and 20 seconds); a travel time of 5 minutes for the second team of four firefighters (response time of 6 minutes and 20 seconds); and a travel time of 8 minutes for the full strike team comprising 16 firefighters (response time of 9 minutes and 20 seconds).

Appendix D – Key fire safety reference documents

— Cadre de coordination du site de sinistre au Québec, Ministère de la Sécurité publique.

— CAN/ULC S515-13 – *Norme sur les engins automobiles de lutte contre l'incendie*.

— Code national de prévention des incendies – Canada 2010, Conseil national de recherches du Canada (CNRC).

— Code national du bâtiment – Canada 2015, Conseil national de recherches du Canada;

— *Guide d'accompagnement 10-04: 3 métiers, 1 seul but*, Québec, 2009;

— *Guide d'aide à la décision pour la mise en commun d'équipements, d'infrastructures, de services ou d'activités en matière de sécurité incendie*, Ministère de la Sécurité publique.

— *Guide d'application relatif aux véhicules et aux accessoires d'intervention* à *l'intention des services de sécurité incendie*, Ministère de la Sécurité publique.

— *Guide des bonnes pratiques d'exploitation des installations de distribution d'eau potable*, Ministère de l'Environnement, de la Lutte contre les changements climatiques, de la Faune et des Parcs.

— *Guide relatif* à *la planification des activités de prévention des incendies*, Ministère de la Sécurité publique.

— *Guide relatif aux opérations des services de sécurité incendie*, Ministère de la Sécurité publique.

— *Guide sur la sécurité incendie des résidences accueillant des personnes présentant des limitations à l'évacuation*, Ministère de la Sécurité publique.

— *Loi sur les compétences municipales, Chapitre C-47.1.*

— *L'intervention d'urgence hors du réseau routier – Cadre de référence*, Ministère de la Sécurité publique.

— NFPA 25: *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*.

— NFPA 291: *Recommended Practice for Fire Flow Testing and Marking Hydrant*s.

— NFPA 1006: *Standard for Technical Rescue Personnel Professional Qualification*.

— NFPA 1142: *Standard Water Supplies for Suburban and Rural Fire Fighting.*

— NFPA 1500: *Norme relative* à *un programme de santé et de sécurité du travail dans les services d'incendie*.

— NFPA 1620: *Pre-Incident Planning.*

— NFPA 1710: *Standard for the Organization and Deployment of Fire Suppression, Emergency Medical Operations and Special Operations to the Public by Career Fire Departments*.

— NFPA 1720: *Standard on Volunteer Fire Service Deployment*.

Appendix E – Content required to ensure compliance by a fire safety cover plan with the Policies

The Minister of Public Security will judge compliance by the results of the planning of regional and local authorities in light of the contents of these Policies. The documents stipulated by the Act must accompany the proposed fire safety cover plan. Below is a non-exhaustive list to guide the preparation such a plan. Other information might be required for the administration of the Act or the Fire Safety Policies of the Minister of Public Security.

Prevention:

— the stages in the risk analysis process and the stakeholders involved;

— the collaborative relationships between the stakeholders who participate in updating the risk classification;

— the risk classification of all the buildings inventoried and their location;

— explanations of the differences between the risk classification indicated in the plan submitted for attestation and the risk classification in the previous version of the plan;

— the authority responsible for prevention programs in each municipality in the territory and the roles and responsibilities of the stakeholders involved in their implementation;

— the goals and objectives of the prevention programs;

— a review of the application of the prevention programs indicated in the previous version of the plan.

Intervention in a building fire and optimization of resources:

— the authority responsible for firefighting interventions for each municipality in the territory;

— the entire array of resources from the fire safety services that intervene in the territory necessary to carry out the optimization approach;

— the zone in the territory served by a compliant water system;

— the characteristics of the territory and the factors that affect response time;

— the identification of the response time to assemble the strike team for low-risk buildings in the territory overall;

— the coverage zone in which the adjustment of the strike team can apply to respond to an alert from a fire alarm system;

— the coverage zone in which applies intervention by the rescue and inside fire attack team within a response time of less than 5 minutes;

— the deployment protocols established, in force, and submitted to the CSAU incendie specifying the authorities intervening in the territory when fires occur;

— the method used to calculate the strike team’s response time;

— the authority responsible for the elaboration of response plans for moderate-, high-, and extreme-risk buildings in the territory and the collaborative relationships between the interveners involved in producing and updating them; the completion objectives of the response plans stipulated in their program and a review of previous programming.

Intervention pertaining to other disaster and accident risks and optimization of resources (optional):

— the authority responsible for intervention pertaining to other disaster and fire risks for each municipality in the territory;

— the entire array of resources from the fire safety services that intervene in the territory necessary to carry out the optimization approach;

— the characteristics of the territory and the factors that affect response time;

— the interventions for other disasters and accidents included in the fire safety cover plan and the authorities responsible for them;

— the resources of the fire safety services that intervene in the territory with respect to other disaster and accident risks;

— the optimum coverage zone for each disaster and accident risk included in the fire safety cover plan.

Coordination:

— duties related to fire safety that are pooled and assigned to the regional authority or to a local authority;

— the mandate, composition, and operation of the regional fire consultation body;

— the mandate, composition, and operation of the regional public safety consultation body.

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