

Revised Nunavik Fire Safety Cover Plan

Effective from June 25, 2019 to December 31, 2023

Final Version

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SECTION 1 – INTRODUCTION

In 2000, the Québec government adopted the *Fire Safety Act*, thereby requiring regional authorities, namely the regional county municipalities and the Kativik Regional Government (KRG), in conjunction with local municipalities, to develop fire safety cover plans determining fire protection objectives for their entire territory and the actions required to achieve those objectives. The KRG therefore undertook a process in cooperation with the northern villages and the Ministère de la Sécurité publique (public security, MSP) to develop a fire safety cover plan for Nunavik in accordance with the provisions of sections 10 and 11 of the Act. The *Nunavik Fire Safety Cover Plan* (Nunavik FSCP) was determined to comply with the fire safety policies of the Minister of Public Security in 2011.

Further to section 29 of the Act, fire safety cover plans must be revised during the sixth year following the date of their coming into force or last certificate of compliance. This document, the *Revised Nunavik Fire Safety Cover Plan*, takes into account KRG decisions regarding the objectives set out in the *Orientations du ministre de la Sécurité publique en matière de sécurité incendie* (fire safety policies of the Minister of Public Security) to achieve a significant reduction in losses resulting from fires and to optimize related municipal services.

1.1 Context

During the implementation of the 2011 Nunavik FSCP, quite a number of accomplishments were realized and are documented in the annual reports submitted by the KRG to the MSP and the northern villages. Notwithstanding, due to various obstacles such as the limited availability of skilled human resources and the high cost of equipment and infrastructure development, not all municipal and regional objectives or legislative obligations were met. More specifically, it was very difficult for local fire departments in the remote communities to attract skilled labour. Financial constraints severely hampered efforts to upgrade many local fire halls to recognized standards. And finally, the extended time commitments and French-language prerequisites applicable to fire prevention training delivered in southern Québec were invariably too prohibitive for potential participants.

Under the *Revised Nunavik Fire Safety Cover Plan*, it will be important to set clear, specific and realizable objectives that take into account the distinct characteristics of the region, including Inuit culture and the Inuktitut language. For the purpose of fulfilling these objectives, innovative solutions will need to be pursued, including the creation of a region-wide database on average, high and extremely high risks, the promotion of fire prevention career opportunities among regional post-secondary students, and the implementation of other opportunities.

1.2 Purpose

Building on the experience gained through the implementation of fire safety initiatives in recent years, the main objectives of the *Revised Nunavik Fire Safety Cover Plan* are to:

- respond to legislative obligations regarding fire safety;
- pursue new actions to foster fire safety, in accordance with the financial and organizational capacities of each community.

SECTION 2 – REGIONAL PROFILE

The following section provides a description of Nunavik, specifically regarding its size, the distinct characteristics of its remote communities, and local fire safety preparedness and operations. The information is intended to help readers understand the scope of the actions proposed under the *Revised Nunavik Fire Safety Cover Plan*.

2.1 Nunavik, the KRG and the Northern Villages

Nunavik is the vast territory of Québec lying north of the 55th parallel. It is bordered by Hudson Bay to the west, Hudson Strait and Ungava Bay to the north, and Labrador to the east. The region covers 500 000 km² and its communities are located between 1 500 and 2 500 km north of Montreal. Unlike southern Québec, there are no road or rail links between communities. Air transportation plays an essential role in connecting the communities of the region, as well as connecting the region to the rest of Québec.

An arctic climate prevails north of the 55th parallel in Québec. Winters are extremely cold and long, lasting for up to eight months in some communities. During this part of the year, it is not unusual for temperatures to plunge to -40°C, and even lower.

The KRG plays a co-ordinating role among the northern villages. It created a civil security section in 1999. The section consists of five employees who strive to foster improved services, stable funding for local fire safety activities, training and operational support. The 14 northern villages are responsible for delivering essential public services, including the planning and management of local fire safety resources.



The population of Nunavik is young: 60% of residents are under the age of 25, i.e. double the proportion of the corresponding age group in southern Québec. This situation generates unique challenges in terms of the recruitment and retention of human resources for fire safety services. The following table shows the significant growth of the region's population in recent years.

Northern villages	Urban zone (no.)	Population 2006 (no.)	Population 2011 (no.)	Population 2016 (no.)	Variance 2006–2016 (%)	Variance 2011–2016 (%)
Akulivik	1	507	615	633	24.9	2.9
Aupaluk	1	174	195	209	20.1	7.2
Inukjuak	1	1 595	1 597	1 757	10.0	10.0
lvujivik	1	349	370	414	18.6	11.9
Kangiqsualujjuaq	1	735	874	942	28.2	7.8
Kangiqsujuaq	1	605	696	750	24.0	7.8

Table 1.1 Opulation variance in the northern vinages
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Kangirsuk	1	466	549	567	21.7	3.3
Kuujjuaq	1	2 132	2 375	2 754	29.2	16.0
Kuujjuaraapik	1	568	657	686	20.8	4.4
Puvirnituq	1	1 457	1 692	1 779	22.1	5.1
Quaqtaq	1	315	376	403	27.9	7.2
Salluit	1	1 241	1 347	1 483	19.5	10.1
Tasiujaq	1	248	303	369	48.8	21.8
Umiujaq	1	390	444	442	13.3	-0.5
Nunavik		10 784	12 090	13 188	22.3	9.1

Source: Statistics Canada

2.2 Statistics

Under the 2011 Nunavik FSCP, the KRG compiled data from local fire reports and generated some statistics. The results presented in the following tables show the consequences of incidents as well as allow planning for improved fire prevention and emergency response methods. This data was also included in annual reporting submitted by the KRG to the MSP and the northern villages.

Northern villages	2011	2012	2013	2014	2015	2016	Total 2011-	fires -2016
	(no.)	(%)						
Akulivik	4	0	1	4	2	7	18	4.4
Aupaluk	1	1	1	3	0	1	7	1.7
Inukjuak	3	11	4	16	12	14	60	14.8
lvujivik	2	4	8	0	1	1	16	3.9
Kangiqsualujjuaq	5	3	5	3	9	10	35	8.6
Kangiqsujuaq	1	1	5	6	3	3	19	4.7
Kangirsuk	3	1	5	2	3	2	16	3.9
Kuujjuaq	16	8	9	20	7	13	73	18
Kuujjuaraapik	11	2	3	1	7	5	29	7.1
Puvirnituq	8	6	3	4	23	32	76	18.7
Quaqtaq	2	0	4	3	2	2	13	3.2
Salluit	3	2	4	2	3	10	24	5.9
Tasiujaq	1	0	0	0	0	3	4	1
Umiujaq	3	2	2	2	6	1	16	3.9
Nunavik	63	41	54	66	78	104	406	

Table 2. Recorded fires in the northern villages

Source: KRG

The number of fires that occurred annually over the six-year period remained relatively level, except in 2012 when fewer fires were reported. The number of fires that occur in any given northern village seem to be proportional to the size of the local population. By tracking fire incidents, it was possible to identify some trends and anomalies, such as an increased awareness in cause of fires and jumps in the number of incidents in different communities.

This information permitted local and regional authorities to focus their fire prevention and planning efforts on these problems.

Northern villages	2011 (no.)	2012 (no.)	2013 (no.)	2014 (no.)	2015 (no.)	2016 (no.)
Akulivik	6.5	0.0	1.6	6.5	3.3	11.1
Aupaluk	5.1	5.1	5.1	15.4	0.0	4.8
Inukjuak	1.9	6.9	2.5	10.0	7.5	8.0
Ivujivik	5.4	10.8	21.6	0.0	2.7	2.4
Kangiqsualujjuaq	5.7	3.4	5.7	3.4	10.3	10.6
Kangiqsujuaq	1.4	1.4	7.2	8.6	4.3	4.0
Kangirsuk	5.5	1.8	9.1	3.6	5.5	3.5
Kuujjuaq	6.7	3.4	3.8	8.4	2.9	4.7
Kuujjuaraapik	16.7	3.0	4.6	1.5	10.7	7.3
Puvirnituq	4.7	3.5	1.8	2.4	13.6	18.0
Quaqtaq	5.3	0.0	10.6	8.0	5.3	5.0
Salluit	2.2	1.5	3.0	1.5	2.2	6.7
Tasiujaq	3.3	0.0	0.0	0.0	0.0	8.1
Umiujaq	6.8	4.5	4.5	4.5	13.5	2.3
Nunavik	5.2	3.4	4.5	5.5	6.5	7.9

Table 3. Fires per 1000 people

Source: KRG

Table 4. Estimated property loss in the northern villages due to fire

Northern villages	2011	2012	2013	2014	2015	2016	Total losse 2011–2010	is 6
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(%)
Akulivik	1 730 000	0	6 000	52 000	489 500	873 750	3 151 250	9.1
Aupaluk	9 200	6 390	10 000	16 000 501	0	0	16 026 091	46.2
Inukjuak	205 000	72 810	1 350	282 155	414 400	68 900	1 044 615	3.0
lvujivik	2 550	3 600	4 700	0	0	0	10 850	0.0
Kangiqsualujjuaq	90 305	325 000	118 000	102 800	27 500	433 250	1 096 855	3.2
Kangiqsujuaq	15 500	200 000	26 000	3 504	11 000	41 000	297 004	0.9
Kangirsuk	16 000	300	449 000	12 500	2 000	520 100	999 900	2.9
Kuujjuaq	523 850	11 400	29 450	233 300	6 250	104 125	908 375	2.6
Kuujjuaraapik	15 600	0	27 100	1 000	571 000	271 500	886 200	2.6
Puvirnituq	1 032 900	622 550	1 100 000	150 700	2 746 450	1 146 700	6 799 300	19.6
Quaqtaq	0	0	500	425 000	7 000	5 000	437 500	1.3
Salluit	132 500	1 401 500	62 800	315 000	1 000	553 850	2 466 650	7.1
Tasiujaq	0	0	0	0	0	422 000	422 000	1.2
Umiujaq	25 600	31 600	33 000	2 050	74 200	0	166 450	0.5
Nunavik	3 799 005	2 675 150	1 867 900	17 580 510	4 350 300	4 440 175	34 713 040	100

Source: KRG

Table 4 (above) shows estimated property losses or replacement costs per fires annually. The data vary according to the year from between zero to a few million dollars. In 2014, a fire occurred at the school in Aupaluk; the estimated replacement costs are \$16 million.

Property loss in 2014 therefore appears to be disproportionate to the other years. It is also important to note that, in 2015 and 2016, three northern villages recorded no property loss due to fire. This result should be the target adopted by all the northern villages under the *Revised Nunavik Fire Safety Cover Plan*.

	2015				2016				2015–2016			
Northern villages	Estimated building value (\$)	Estimated building losses (\$)	Losses	Estimated building value (\$)	Estimated building losses (\$)	Losses		Estimated building value (\$)	Estimated building losses (\$)	Losses		
Akulivik	465 000	459 000	98.71	6 631 000	803 000	12.11		7 096 000	1 262 000	17.78		
Aupaluk	0	0	-	0	0	-		0	0	-		
Inukjuak	14 115 000	200 000	1.42	23 900 000	32 150	0.13		38 015 000	232 150	0.61		
lvujivik	2 400 000	0	0.00	600 000	0	0.00		3 000 000	0	0.00		
Kangiqsualujjuaq	500 000	25 000	5.00	14 045 000	397 250	2.83		14 545 000	422 250	2.90		
Kangiqsujuaq	2 400 000	0	0.00	1 515 000	35 000	2.31		3 915 000	35 000	0.89		
Kangirsuk	1 015 000	1 500	0.15	1 100 000	500 000	45.45		2 115 000	501 500	23.71		
Kuujjuaq	8 600 000	200	0.00	19 021 000	83 400	0.44		27 621 000	83 600	0.30		
Kuujjuaraapik	10 515 000	515 000	4.90	2 415 000	260 500	10.79		12 930 000	775 500	6.00		
Puvirnituq	16 355 000	2 421 800	14.81	21 090 000	959 750	4.55		37 445 000	3 381 550	9.03		
Quaqtaq	6 100 000	5 000	0.08	0	0	-		6 100 000	5 000	0.08		
Salluit	1 800 000	500	0.03	7 515 000	526 000	7.00		9 315 000	526 500	5.65		
Tasiujaq	0	0	-	915 000	402 000	43.93		915 000	402 000	43.93		
Umiujaq	1 715 000	50 200	2.93	0	0	-		1 715 000	50 200	2.93		
Nunavik	65 980 000	3 678 200	5.57	98 747 000	3 999 050	4.05		164 727 000	7 677 250	4.66		

Table 5. Variance between estimated building value and estimated property losses

Source: KRG

Reliable statistical data for 2015 and 2016 made it possible to extrapolate additional information, specifically the estimated replacement cost of buildings affected by fire and the extent of damages caused by fire. It should be pointed out that response times and the effectiveness of the interventions of local fire departments are constantly evolving and producing lower levels of losses.

SECTION 3 – RISK ANALYSIS

Pursuant to section 10 of the *Fire Safety Act*, fire safety cover plans must include an inventory, evaluation and classification of the fire risks present in their territories and specify the locations of these risks. Inventory, evaluation and classification are the basic ingredients of a fire safety cover plan. More than any other consideration, risk analysis contributes to objective decision-making and measures to reduce the occurrence or impacts of certain types of fires.

3.1 Risk Classification

The risk classification contained in the fire safety policies of the Minister of Public Security is typically based on property assessments. However, such assessments are non-existent for Nunavik communities. In this context, provincial guidelines were applied along with detailed understanding of each community to identify and evaluate occupancy rates, the ability of occupants to self-evacuate (as opposed to requiring assistance), the intended usage of buildings, distances between buildings, zoning, water supply and the more-or-less flammable nature of building contents. All these factors contribute to risk levels.

Consideration was also given to the critical role of certain facilities and the potential impact of fire at such facilities on the functioning of the community. By way of three examples, special attention was paid to storage facilities for fuel used to generate electricity and heat homes and buildings, telecommunications facilities, and facilities for emergency shelters such as schools, and for which important regular follow-up actions include equipment inspections and preventive maintenance by the facility operators.

The classification proposed under the *Revised Nunavik Fire Safety Cover Plan* includes four categories, according to main use or building type.

3.2 Risk Classification Results for the Northern Villages

Risk classification permits analysis as well as improved planning of fire prevention and inspections in the northern villages. The following table shows the number of risks per category in each northern village.

Northern villages	Low	Average	High	Extremely high	То	tal
, and the second s	(no.)	(no.)	(no.)	(no.)	(no.)	%
Akulivik	180	10	17	15	222	5.2
Aupaluk	73	2	27	10	112	2.6
Inukjuak	461	12	29	20	522	12.1
lvujivik	107	2	25	14	148	3.4
Kangiqsualujjuaq	198	1	27	15	241	5.6
Kangiqsujuaq	171	6	20	16	213	5.0
Kangirsuk	180	3	29	20	232	5.4
Kuujjuaq	567	110	91	20	788	18.3
Kuujjuaraapik	225	8	21	16	270	6.3
Puvirnituq	553	16	34	27	630	14.6
Quaqtaq	98	13	20	9	140	3.3
Salluit	381	7	38	45	471	10.9
Tasiujaq	101	1	25	11	138	3.2
Umiujaq	138	6	18	13	175	4.1

Table 6. Risk classification results

Nunavik	3433	197	421	251	4302	100.0
%	79.8	4.6	9.8	5.8	100.0	

Source: KRG

The maps appended to this document show the actual locations of the different risks identified in each northern village.

SECTION 4 – OBJECTIVES

Pursuant to sections 10 and 11 of the *Fire Safety Act*, fire safety cover plans must:

- include an inventory and evaluation of existing or planned fire protection measures, the human, physical and financial resources allocated to fire safety by the local or regional authorities [...] and the infrastructure and water sources available for fire safety purposes;
- include an analysis of the functional relations between those resources and an evaluation of the operational procedures in force;
- determine, for each class of risk listed or each part of the territory defined, optimum fire protection objectives that can be achieved taking into account the measures and resources available in the concerned region;
- specify the actions to be taken by local and, where applicable, regional authorities to achieve the determined objectives on incorporating their implementation plans;
- contain a procedure for the periodic assessment of the effectiveness of the actions taken and the degree to which the determined objectives have been attained;

The fire protection objectives set out in the *Revised Nunavik Fire Safety Cover Plan* follow up on those implemented under the 2011 Nunavik FSCP and take into account the fire safety policies of the Minister of Public Security. Under the 2011 Nunavik FSCP, several objectives were not achieved for a variety of reasons. Program preparations, management tools, computer support, the preparation of forms and so on required inordinate effort. Lowrisk residential inspections and fire fighter training progressed only slowly. The difficulty in attracting a skilled regional fire prevention technician also contributed to delays. Further factors that influence the implementation of projects in the north are the distances between the northern villages and dependency on air transportation for all inter-community travel. These factors complicate the management of various activities and increase operating costs. In addition, strike force objectives in most communities under the 2011 Nunavik FSCP proved to be too optimistic, mainly due to fire fighter shortages or fire fighter unavailability.

The fire safety policies of the Minister of Public Security state that intervention weaknesses that cannot be rectified in a given geographic sector or in the territory of a municipality must translate into increased prevention efforts. Therefore, although efforts will be made to recruit and retain more fire fighters, the five prevention programs listed under Objective 1 (below)

have been reinforced to compensate for intervention weaknesses and maintain the level of assumed risk deemed acceptable by each community.

The following sections list the fire protection objectives under the *Revised Nunavik Fire Safety Cover Plan*, briefly describe related past actions and identify new actions to be taken by the KRG, the northern villages and local fire departments.

4.1 Objective 1 – Fire Prevention

Considering the tested effectiveness of preventive measures in the fight against fires, municipalities must, based on methods and approaches that are preventive, give priority to protecting both citizens and man-made heritage against fire (objective 1, fire safety policies of the Minister of Public Security).

4.1.1 Incident evaluation and analysis

** Portrait of the Situation **

In cooperation with local fire departments, the KRG introduced an incident evaluation and analysis program under the 2011 Nunavik FSCP that included the following elements:

- criteria for determining when incidents should be evaluated;
- incident evaluation procedures;
- standardized evaluation forms;
- incident analysis and an annual regional summary;
- recommendations based on the annual regional summary to improve fire prevention activities, including public awareness.

The information collected on fires that occurred in Nunavik between 2011 and 2016 made it possible to produce annual regional summaries for the KRG and the northern villages. To ensure the development of some evaluation and analysis know-how in all the northern villages, the KRG prioritized the delivery of the Fire Fighter 1 training program with the École nationale des pompiers du Québec (fire fighters training, ENPQ). Under the *Revised Nunavik Fire Safety Cover Plan*, the next step in developing local expertise will involve the delivery of the Non-Urban Officer training program with the ENPQ to fire department officers. Non-Urban Officer training specifically covers fire cause and circumstance investigation. This new knowledge will enhance incident evaluation in each northern village, as well as ensure that information collected at the scenes of fires complies with set standards. Refer to the related action under subsection 4.2.3.2, Training, drills, and occupational health and safety, action no. 24.

Under the *Revised Nunavik Fire Safety Cover Plan*, KRG resources will continue to be assigned, on request by local fire departments and according to the seriousness of each incident, to travel to communities to conduct fire cause and circumstance investigations and

to support local fire departments with evaluation and analysis. The incident evaluation and analysis program will focus on the following critical elements: criteria for determining when incidents should be evaluated; incident analysis and reporting; recommendations to improve fire prevention activities; and the identification of an appropriate level of resources (financial and human) for this purpose. The results of the program in the coming years will demonstrate that the main causes of fires across the region can be identified and that concrete actions can be implemented to prevent different types of fires.

** Protection Objectives **

- Maintain and, as necessary, enhance the incident evaluation and analysis program with focus on identified critical elements (action no. 1).
- > Transmit reporting to the KRG for compilation and analysis purposes (action no. 2).

4.1.2 Municipal bylaws

** Portrait of the Situation **

Under the 2011 Nunavik FSCP, all the northern villages adopted or harmonized local bylaws with a model prepared by the KRG. Municipal fire prevention bylaws take into account the provisions of the *National Building Code* and the *National Fire Code*. Whenever it is observed that fires are attributable to a similar cause, the northern villages have the power to amend their fire prevention bylaws to counteract the cause and reduce property loss and adverse effects on local populations.

** Protection Objectives **

- > Maintain and, as necessary, enhance municipal fire prevention bylaws (action no. 3).
- Obtain information from the government authority responsible for the building or safety code or standard in question, before any new construction with a deviation or derogation from that code is approved (action no. 4).
- 4.1.3 Smoke detector installation and low-risk inspections

** Portrait of the Situation **

In accordance with the 2011 Nunavik FSCP, local fire departments implemented local smoke detector installation and low-risk inspection programs. However, some local fire departments did not achieve their inspection objectives.

For its part, the Kativik Municipal Housing Bureau (KMHB) conducts annual inspections in the dwellings it operates. These inspections are part of the organization's regular activities

to track dwelling conditions and maintain the region's social housing stock. According to the KMHB, 85% of dwellings in the communities are social housing units operated by the KMHB. The remaining 15% of dwellings are owned privately by individuals or by organizations or businesses for staff. During its annual inspections, the KMHB replaces defective smoke detectors. Currently, data on these inspections are not transmitted to local fire departments or to the KRG. Therefore, although low-risk inspection objectives were not achieved by some local fire departments, KMHB inspections are enhancing the safety of many community residents.

The KMHB has also produced a document in Inuktitut, English and French for new tenants to explain minimum standards both inside and outside of dwellings. Relevant information on the use and maintenance of smoke detectors is included in the document as well as indoor fire prevention tips.

Under the *Revised Nunavik Fire Safety Cover Plan* and with the assistance of the KRG, local fire departments will enhance their smoke detector installation and low-risk inspection programs. These programs will focus on regularly scheduled inspections taking into account the following critical elements: fire fighter availability; procedures for selecting inspection sites; the sharing of the results of KMHB annual inspections; as well as inspection methods and objectives. Priority will be given to completing inspections of buildings not covered by the KMHB so as to ensure that all residential buildings are inspected annually.

** Protection Objectives **

- Maintain and, as necessary, enhance regular smoke detector installation and low-risk inspection programs (action no. 5).
- On receipt of fire prevention inspection data from the KMHB, transmit it to local fire departments for low-risk inspection compilation and analysis purposes (action no. 6).
- 4.1.4 Average, high and extremely high-risk inspections

** Portrait of the Situation **

All the northern villages have agreed with the KRG on the need to conduct average, high and extremely high-risk inspections. These inspections must be completed by a qualified fire prevention technician. The priorities of the KRG fire technician under the 2011 Nunavik FSCP included the preparation of an inspection form and the promotion of public awareness regarding fire prevention.

Under the *Revised Nunavik Fire Safety Cover Plan* and with the assistance of the KRG, local fire departments will develop average, high and extremely high-risk inspection programs. These programs will focus on regularly scheduled inspections taking into account the following critical elements: qualified fire prevention technician availability; procedures for

selecting inspection sites; as well as inspection methods and objectives. A three-year schedule will be established to cover all buildings in these three risk categories. The estimated costing for action no. 8 appears in appendix.

** Protection Objectives **

- Develop and, as necessary, enhance average, high and extremely high-risk inspection programs (action no. 7).
- Identify average high and extremely high-risk inspection needs and hire one or more qualified fire prevention technicians to carry out inspections in parallel with action no. 27, and identify funding for this purpose (action no. 8).
- 4.1.5 Public awareness

** Portrait of the Situation **

All the northern villages implemented the regional fire prevention public awareness program under the 2011 Nunavik FSCP in cooperation with local organizations and schools. Activities included hand-held fire extinguisher demonstrations, information-sharing visits to schools, childcare centres and elders' residences, and fire evacuation drills. Public awareness tools were developed by the KRG in Inuktitut, English and French, including newspaper articles, documentation distributed by mail, and messages broadcast on community and regional FM radio stations.

Under the *Revised Nunavik Fire Safety Cover Plan*, the program will be continued. Special focus will be placed on the following critical elements: purpose and objectives of the program; identifying target groups; content of the program; securing an appropriate level of resources (financial and human) for this purpose; parameters for delivering the program; and evaluation tools.

** Protection Objective **

Maintain and, as necessary, enhance the regional fire prevention public awareness program (action no. 9).

4.2 Objectives 2 and 3 – Response Resources

Taking into account existing resources on a regional scale, design fire safety services, plan the organization and the provision of rescue services and anticipate intervention procedures so as to target, in the face of low-risk situations located inside urban zones defined on the development plan, the deployment of a strike force that makes an effective intervention possible (objective 2, fire safety policies of the Minister of Public Security). Taking into account existing resources, design fire safety services, plan the organization and the provision of rescue services and anticipate intervention procedures so as to target, in the case of other risk categories, the deployment of an optimal strike force (objective 3, fire safety policies of the Minister of Public Security).

4.2.1 Water supply

4.2.1.1 Municipal waterworks

** Portrait of the Situation **

Unlike other municipalities in Québec, most northern villages are established in permafrost or discontinuous permafrost zones. This reality impacts on building design and construction, as well as water distribution systems including for fire fighting purposes.

Only the Northern Village of Kuujjuaraapik possesses aqueduct and fire hydrant infrastructure. This infrastructure provides a minimum water supply of 1500 L/min with a pressure of 140 kPa via 40 fire hydrants around the community. Records are kept of maintenance and flow evaluation performed annually on this infrastructure in accordance with National Fire Protection Association (NFPA) standard 291.

In the remaining 13 northern villages, drinking water reservoirs of varying capacities exist. Refer to Table 7. At least two water distribution trucks are potentially available in each community. These vehicles are used daily to deliver drinking water to dwellings and buildings. When fires occur, these same vehicles, although not compliant with the Underwriters' Laboratories of Canada (ULC) standard S515, are used to supply water to fire trucks (pumpers). Drinking water trucks have a minimum capacity of 13 600 L. This capacity plus the reservoir capacity of the smallest fire truck operated in the communities (1 350 L) totals 14 950 L.

Winters in Nunavik are extremely cold and long, lasting up to eight months in some communities. During this part of the year, it is not unusual for temperatures to plunge to -40°C, or even lower. To ensure reliable water supply, procedures are in place to ensure that water distribution systems, including for fire fighting purposes, remain free of freezing and available at all times. These systems include heated pumping stations and water supply lines, as well as heated parking garages for water distribution trucks where they are parked full. In this context, it is important to ensure interoperability between fire departments and water distribution systems.

** Protection Objectives **

Maintain and, as necessary, enhance water reservoir capacity and water flow in every community in the region (action no. 10).

- Implement and, as required, modify the maintenance and flow evaluation program for fire hydrants (action no. 11).
- Mobilize a minimum of one water distribution truck for emergency responses in every community that does not possess aqueduct and fire hydrant infrastructure (action no. 12).

Table 7. Municipal waterworks

		Fire I	nydrants			
Northern villages	Aqueduct	Total	Compliant	NFPA standard 291	Regular maintenance	Water reservoir capacity (L)
Akulivik	No					80 000
Aupaluk	No					4 413 700
Inukjuak	No					240 000
lvujivik	No					210 000
Kangiqsujuaq	No					336 500
Kangiqsualujjuaq	No					100 000
Kangirsuk	No					336 500
Kuujjuaq	No					*14 000
Kuujjuaraapik	Yes	40	40	No	Yes	36 000
Puvirnituq	No					210 000
Quaqtaq	No					210 000
Salluit	No					5 611 000
Tasiujaq	No					150 000
Umiujaq	No					30 000

Source: KRG

* Water reservoir capacity (14 000 L) plus direct supply from a natural water point with four pumps each having a capacity of 1200 L/min and a fleet of nine water trucks with a combined capacity exceeding 100 000 L.

4.2.1.2 Water points

** Portrait of the Situation **

As explained in the preceding subsection, in most northern villages the water for water distribution trucks is drawn from each community's drinking water supply system. Depending on the time of year, local fire departments may be able to draw water directly from nearby creeks, rivers or lakes.

4.2.2 Fire fighting infrastructure, vehicles and equipment

4.2.2.1 Fire halls

** Portrait of the Situation **

Each of the 14 northern villages possesses a structure (that serves as a fire hall) situated in its local urban zone. Pursuant to an agreement with the MSP, fire halls were constructed in Puvirnituq, Inukjuak, Kangiqsujuaq and renovated in Quaqtaq in 2011 and 2012. In subsequent years, some minor renovation work was also carried out at the fire halls in the remaining 10 communities, although the level of available funding has never been sufficient to respond to all the identified needs. For example, in 2016 urgent renovation work was carried out to install new more dependable and efficient heating systems in the fire halls in Aupaluk, Tasiujaq, Ivujivik, Akulivik and Umiujaq. However, many fire halls still lack adequate parking and storage space for vehicles and equipment, hot and cold running water and washroom facilities, washing machines, as well as office and meeting space. Refer to Table 8.

In addition, since local fire departments are responsible for responding to several different types of emergencies, it is not unusual to find specialized emergency response vehicles and equipment stored at or next to fire halls. In most cases, however, the fire halls are not designed for these additional purposes. For example, due to a shortage of indoor parking space, first responder vehicles in all the communities are parked outside of fire halls, where they are subject to harsh weather conditions and extreme cold in winter. During first responses, it is not certain that, even when cleared of snow and ice, first responder vehicles will be able to start. First aid equipment is stored in the same cold conditions.

The need for proper infrastructure to park and store fire and emergency vehicles is obvious. A complete inventory of fire hall needs in every community was detailed in November 2017 in an engineer's report (in Appendix B). The estimated costing for action no. 13 appears in appendix.

** Protection Objective **

Carry out renovation work on fire halls in cooperation with the concerned northern villages and fire departments, and identify funding for this purpose (action no. 13).

Northern villages	Doors (no.)	Bays (no.)	Improvements required						
Akulivik	1	1	Yes						
Aupaluk	1	1	Yes						
Inukjuak	2	2	Yes						
lvujivik	1	1	Yes						
Kangiqsujuaq	2	2	Yes						

Table 8. Fire halls

Kangiqsualujjuaq	2	2	Yes
Kangirsuk	3	3	Yes
Kuujjuaq	3	3	Yes
Kuujjuaraapik	2	2	Yes
Puvirnituq	2	2	Yes
Quaqtaq	2	2	Yes
Salluit	5	5	Yes
Tasiujaq	1	1	Yes
Umiujaq	1	1	Yes

Source: KRG

4.2.2.2 Fire trucks

** Portrait of the Situation **

Modifications to fire trucks in the northern villages permit the use of compressed air extinguishing foam systems (CAFS) (two 38 mm $(1\frac{1}{2} \text{ in.})$ lines). Moreover, all water pumps installed on fire trucks in the northern villages are certified compliant with the ULC standard S515 (capacity of at least 1 000 L/min). Notwithstanding, in order to meet the minimum water flow of 1 150 L/min required to support a team of four firefighters attempting for the rescue of persons inside a burning building and in order to eventually attain the 1 500 L/min water flow which is considered the minimum water flow to support a complete strike force, the replacement of eight fire trucks should be contemplated under the *Revised Nunavik Fire Safety Cover Plan*. Refer to Table 9.

Safety checks must be completed within 24 hours prior to use of a fire truck or on its return to its fire hall. When fire trucks remain at a fire hall, safety checks must be completed at least once every seven days. As well, monthly verifications should be completed to ensure the compliance of fire trucks and pumps with standards and the *Guide d'application des exigences relatives aux véhicules et accessoires d'intervention* (guidelines concerning emergency response vehicle and equipment requirements, GAERVAI). Finally, mechanical maintenance and inspections prescribed under the *Regulation respecting Safety Standards for Road Vehicles* must be completed every year. The KRG assists the northern villages with this requirement by coordinating the travel of a qualified inspector to the communities twice annually. The estimated costing for action no. 14 appears in appendix.

Whenever it is impossible for a local fire department to deploy its own emergency response vehicles for whatever reason (mechanical breakdowns, scheduled maintenance or any other cause), no alternatives are available to replace fire trucks and equipment in any of the communities.

** Protection Objectives **

Maintain and, as necessary, enhance the fire truck and pump verification, inspection, maintenance and renewal program in accordance with applicable standards, the GAERVAI and the *Regulation respecting Safety Standards for Road Vehicles*, and identify funding for this purpose (action no. 14).

Ensure fire trucks are inspected and maintained in accordance with Société de l'assurance automobile du Québec regulations (action no. 15).

Northern villages	Vehicle type	Year of manufacture	ULC	Pump capacity (L/min)	Reservoir capacity (L)	Annual testing	Water trucks (no.)
Akulivik	CAFS	2000	Yes	1 000	*1 350	Yes	2
Aupaluk	CAFS	2000	Yes	1 000	*1 350	Yes	2
Inukjuak	Pumper-CAFS	2012	Yes	3 000	3 139	Yes	3
Ivujivik	CAFS	2000	Yes	1 000	*1 350	Yes	2
Kangiqsujuaq	CAFS	2000	Yes	1 000	*1 350	Yes	2
Kangiqsualujjuaq	Pumper-CAFS	2012	Yes	3 000	3 139	Yes	2
Kangirsuk	Pumper-CAFS	1996	Yes	2 843	4 500	Yes	2
Kuuijuog	Pumper-snuffer	2000	No	472	*1 134	Yes	0
Ruujjuaq	Pumper- CAFS	1981	Yes	2 843	2 268	Yes	9
Kuujjuaraapik	Pumper-CAFS	2012	Yes	3 000	3 139	Yes	1
Puvirnituq	Pumper-CAFS	2012	Yes	3 000	3 139	Yes	3
Quaqtaq	CAFS	2000	Yes	1 000	*1 350	Yes	2
Salluit	Pumper-CAFS	2012	Yes	3 000	3 139	Yes	3
Tasiujaq	CAFS	2000	Yes	1 000	*1 350	Yes	2
Umiujaq	CAFS	2000	Yes	1 000	*1 350	Yes	2

Table 9. Fire trucks

Source: KRG

* Fire trucks contemplated for replacement.

4.2.2.3 Fire fighter equipment

** Portrait of the Situation **

A good deal of effort was applied under the 2011 Nunavik FSCP to ensure the health and safety of fire fighters. Each fire fighter is equipped with a properly fitting two-piece bunker suit that is compliant with applicable standards. As well, to carry out indoor responses local fire departments possess at least four self-contained breathing apparatuses equipped with man-down alarms and a spare air tank for each unit.

Self-contained breathing apparatuses and air tanks are inspected and refilled pursuant to regulations of the Commission des normes, de l'équité, de la santé et de la sécurité du travail (occupational standards, equity, health and safety, CNESST) regarding respiratory protection, but cannot be properly maintained due to the absence of hot and cold running water in most fire halls. The absence of hot and cold running water as well as washing machines in most fire halls also makes it impossible to wash and decontaminate bunker suits. The estimated costing for action nos. 16 and 17 appears in appendix.

** Protection Objective **

- Maintain and, as necessary, enhance the fire fighter equipment verification, inspection, maintenance and renewal program in accordance with manufacturer recommendations, the GAERVAI and applicable standards and regulations, and identify funding for this purpose (action no. 16).
- Develop and implement an inspection, decontamination and replacement program for fire fighter protection clothing (bunker suits, helmets, hoods, boots and gloves) in accordance with manufacturer recommendations, the *Guide des bonnes pratiques* – *L'entretien des vêtements de protection pour la lutte contre les incendies* (good practices guide – fire safety clothing maintenance, GBP–EVPLCI) produced by the CNESST and NFPA 1851, and identify funding for this purpose (action no. 17).
- 4.2.2.4 Communication systems

** Portrait of the Situation **

Section 52.1 of the *Civil Protection Act* stipulates that every local municipality, unless it is a northern village, must ensure the provision of services by a 911 emergency centre that has obtained a certificate of compliance. Following up on a feasibility study conducted by the KRG in 2013 that determined the installation and operation of a 911 emergency centre in Nunavik would be expensive, renewed discussions were held in 2016 between the KRG and the Sûreté du Québec (provincial police) concerning alternative avenues. A new approach based on a regional call centre using Internet Protocol technology is under consideration by all emergency response stakeholders, including local fire departments and regional police.

Currently in the northern villages, residents dial a local number to report fires (ex.: in Kuujjuaq, 819-964-9000; in Salluit, 819-255-9000). Calls are received via communication radios carried by one or more members of the local fire department. Important information is transmitted to other available responders by pager or portable radio. Each northern village possesses communication radios and all emergency response vehicles are equipped with portable radios. Local fire departments carry out regular testing of local communication systems.

The communication equipment currently used in the communities was installed in the 1990s. This equipment is suffering from more and more malfunctions and some replacement parts are no longer available. The need to replace communication equipment and improve communication systems including the incorporation of new technologies and interoperability with regional police is a priority. The estimated costing for action no. 18 appears in appendix.

** Protection Objective **

Maintain and, as necessary, enhance the verification, inspection, maintenance and renewal of communication systems, and identify funding for this purpose (action no. 18).

4.2.3 Fire fighters

4.2.3.1 Initial deployment and availability

** Portrait of the Situation **

In accordance with the fire safety policies of the Minister of Public Security, municipalities with populations exceeding 50 000 must possess structured fire departments, plan the organization and delivery of services, and implement procedures to ensure the initial deployment of 10 fire fighters for all emergency responses in their urban zones. Smaller municipalities are expected to strive towards the same targets. However, because municipalities that rely on volunteer fire fighters may experience difficulty deploying strike forces of this size, the fire safety policies of the Minister of Public Security consider an initial deployment of eight to be a minimum for emergency responses.

As well, initial deployments for average, high and extremely high risks are identified in emergency response planning. Refer to subsection 4.2.4, Emergency response planning.

In the 14 northern villages, there are a total of 205 active fire fighters. Refer to Table 10. Not one local fire department in the region is staffed around the clock and, except for the fire chiefs in most communities, fire fighters perform their duties on a volunteer basis.

The number of available volunteer fire fighters in each community varies according to the time of day, the day of the week and the season. In fact, the higher number of fire fighters available on weekdays compared with weeknights and weekends is characteristic of Nunavik. Several possible explanations for this situation are provided below.

- As each of the region's 14 communities is remote, most volunteer fire fighters are at work nearby in their communities on weekdays and available to respond to incidents.
- The region's population is young and most adults have children. Volunteer fire fighters therefore have increased family responsibilities on weeknights and weekends and may be less available to respond to incidents.
- Many Inuit volunteer fire fighters with regular employment take advantage of weeknights and weekends to practise subsistence hunting and fishing. While out on the land, away from their communities, they are unavailable to respond to incidents.

The availability of volunteer fire fighters can also fluctuate according to the season due to subsistence hunting and fishing activities. Finally, because each community is remote, it is impossible to mobilize resources from neighbouring communities to assist with responses to

incidents. For these reasons, some local fire departments were not able to meet initial deployment objectives under the 2011 Nunavik FSCP.

In order to be reasonably assured of fire fighter availability under the *Revised Nunavik Fire Safety Cover Plan*, local fire departments will need to regularly validate fire fighter deployment information. The recruitment of new resources represents a major challenge for all local fire departments. Finding the right recruitment method and retaining fire fighter resources will require some reflective thinking on the part of all local fire departments as well as KRG and MSP support.

Refer to Table 11. Kuujjuaq has available for deployment at least eight fire fighters at all times, Salluit at least four fire fighters on weekdays and at least eight fire fighters on weekends, and all the other communities at least four fire fighters at all times, except for Ivujivik and Umiujaq which have three fire fighters available for deployment at all times.

Because fire fighter availability in Nunavik makes it impossible to assure the deployment of a specific number of firefighters, the numbers indicated in Table 11 must not be interpreted as an undertaking by municipal authorities but, rather, as a guideline for responses.

** Protection Objectives **

- For low risks, the response time for the available strike force of all local fire departments will be within 15 minutes in their urban zone (action no. 19).
- ➢ For average, high and extremely high risks, the response time for the available strike force of all local fire departments will be within 15 minutes in their urban zone and preincident planning guidelines will be applied, in parallel with action no. 27 (action no. 20).
- Regularly validate fire fighter availability and implement fire fighting strategies that follow pre-incident planning (action no. 21).
- Conduct a review of recruiting methods in order to encourage more volunteer fire fighters, and enhance methods for retaining members (action no. 22).

	Offi	cers	Offic	ers and fire f	ighters com	bined	Total
Northern villages	FF1 but not NUO	Neither FF1 nor NUO	FF1 and NUO	FF1 and Instructor	FF1	Not FF1	TOLAI
	(no.)	(no.)	(no.)	(no.)	(no.)	(no.)	(no.)
Akulivik		1	0	0	0	6	6
Aupaluk		1	0	0	1	12	13
Inukjuak		1	0	1	5	10	16

Table 10. Officers and fire fighters

lvujivik	1		0	0	4	2	6
Kangiqsualujjuaq	1		0	0	2	14	16
Kangiqsujuaq	1		0	2	3	6	11
Kangirsuk	1		0	0	5	13	18
Kuujjuaq	1		0	2	15	3	20
Kuujjuaraapik	1		0	2	5	15	22
Puvirnituq	1		0	0	5	19	24
Quaqtaq	1*		0	1	2	16	19
Salluit	1*		0	1	6	5	12
Tasiujaq		1	0	0	2	8	10
Umiujaq		1	0	1	3	8	12
Nunavik	9	5	0	10	58	137	205

Source: KRG

* Officer is also an instructor.

FF1 Fire Fighter 1 certification (ENPQ).

NUO Non-Urban Officer certification (ENPQ).

Table 11. Fire fighter respo	nse times*					
			Initial d	eployment		
		Weel	kdays		We	ekends
Northern villages		Day	N	light	Eiro	Posponso
	Fire	Response	Fire	Response	fighters	time
	fighters	time	fighters	time	ingriters	ume
	(no.)	(min.)	(no.)	(min.)	(no.)	(min.)
Akulivik	4	15	4	15	4	15
Aupaluk	4	15	4	15	4	15
Inukjuak	4	15	4	15	4	15
lvujivik	3	15	3	15	3	15
Kangiqsujuaq	4	15	4	15	4	15
Kangiqsualujjuaq	4	15	4	15	4	15
Kangirsuk	4	15	4	15	4	15
Kuujjuaq	8	15	8	15	8	15
Kuujjuaraapik	4	15	4	15	4	15
Puvirnituq	4	15	4	15	4	15
Quaqtaq	4	15	4	15	4	15
Salluit	4	15	4	15	8	15
Tasiujaq	4	15	4	15	4	15
Umiujaq	3	15	3	15	4	15

Source: KRG

* The results in this table are based on some collected data and knowledge of the local fire departments.

4.2.3.2 Training, drills, and occupational health and safety

** Portrait of the Situation **

All fire fighters in Québec must comply with the *Regulation respecting the Conditions Governing the Exercise of Functions within a Municipal Fire Safety Service*. The minimum qualifications for fire fighters in the northern villages are Fire Fighter 1 certification. For officers including chiefs, the minimum qualifications are Fire Fighter 1 certification plus Non-Urban Officer certification.

A good deal of effort, both in terms of financial and human resources, was deployed under the 2011 Nunavik FSCP to develop and deliver the Fire Fighter 1 training program with the ENPQ for fire fighters in the northern villages. It is nonetheless clear that certain actions did not generate the expected results, and there has been a significant turnover of fire fighters who completed Fire Fighter 1 certification. Sixty-eight fire fighters who obtained Fire Fighter 1 certification under the 2011 Nunavik FSCP remain active members of their local fire departments. Refer to Table 10 for the complete number of active officers and fire fighters in the northern villages and their related training.

Under the *Revised Nunavik Fire Safety Cover Plan*, continued investments will be needed to deliver the Fire Fighter 1 and Non-Urban Officer training programs. The estimated costing for action no. 24 appears in appendix. The objective must be to have all fire fighters obtain Fire Fighter 1 certification and all officers Non-Urban Officer certification.

To keep training-related travel costs to a minimum and ensure that training is delivered locally under the *Revised Nunavik Fire Safety Cover Plan*, the KRG has undertaken construction of a facility (metal shell) in Kuujjuaq. The facility will be used to conduct fire fighting examinations administered by the ENPQ, as well as for ongoing training purposes.

Also under the *Revised Nunavik Fire Safety Cover Plan*, local fire departments will need to set up refresher training for their members who possess or are in the process of acquiring Fire Fighter 1 and Non-Urban Officer certification. Finally, occupational health and safety awareness fosters the effective and safe use of equipment and proper emergency response methods in dangerous situations. The northern villages will therefore have to develop and implement occupational injury prevention programming pursuant to the *Regulation respecting Prevention Programs* under the *Act respecting Occupational Health and Safety*.

** Protection Objectives **

Comply with the Regulation respecting the Conditions Governing the Exercise of Functions within a Municipal Fire Safety Service (action no. 23).

- Maintain the agreement with the ENPQ recognizing the KRG as responsible for the management of all fire fighter and officer training in Nunavik, and identify funding to coordinate and deliver this training (action no. 24).
- Develop and implement refresher training and a training program for fire fighters and officers in accordance with ENPQ guidelines and modelled on NFPA standard 1500 (action no. 25).
- > Develop and implement occupational health and safety programming (action no. 26).
- 4.2.4 Emergency response planning

** Portrait of the Situation **

In the northern villages, all residential, commercial and public facilities are located within the local urban zone. These zones vary in size between 4 and 8 km². Almost all incidents requiring responses by local fire departments occur within these urban zones.

Climate is another important factor that must be taken into account in emergency response planning. In winter, temperatures can drop below -40°C. This and snow storms may sometimes affect fire fighter mobilization, water supply capacity, and emergency response methods.

Table 12. Emergency response planning										
Northern villages	Local fire department	Reciprocal agreements								
Akulivik	Yes	No								
Aupaluk	Yes	No								
Inukjuak	Yes	No								
lvujivik	Yes	No								
Kangiqsujuaq	Yes	No								
Kangiqsualujjuaq	Yes	No								
Kangirsuk	Yes	No								
Kuujjuaq	Yes	No								
Kuujjuaraapik	Yes	No								
Puvirnituq	Yes	No								
Quaqtaq	Yes	No								
Salluit	Yes	No								
Tasiujaq	Yes	No								
Umiujaq	Yes	No								

The 2011 Nunavik FSCP identified the preparation of emergency response planning as an objective. Notwithstanding, no emergency response planning was performed by any local fire department. Under the *Revised Nunavik Fire Safety Cover Plan*, steps will be taken by local fire departments and the KRG to strive towards this objective concurrently with the

implementation of action nos. 7 and 8. This emergency response planning should moreover strive to comply with NFPA standard 1620 regarding pre-incident planning.

** Protection Objectives **

- Develop a pre-incident planning program for average, high and extremely high risks taking into account available resources and NFPA standard 1620 and including annual objectives and priority based on category of risk (action no. 27).
- Continue to build awareness in the northern villages about the locations of risk categories in their territories and impacts on deployment objectives, and to encourage the incorporation of this knowledge into urban planning (action no. 28).
- 4.2.5 Strike force deployment and mobilization times

** Portrait of the Situation **

Municipalities must specify optimal strike force deployment and mobilization times in their urban zones as well as in every other sector of their territories. Strike force deployment maximizes the chances of confining fires as quickly as possible with the most appropriate resources. Resource deployment strategies take into account the distinct characteristics of the territories they cover and the category of risk.

Each northern village possesses a local fire department responsible for mobilizing volunteer fire fighters, equipment and vehicles at fire scenes in accordance with prescribed timeframes. Local fire departments were tasked under the 2011 Nunavik FSCP with recording data on strike force deployment and mobilization times. This responsibility was not, however, performed consistently.

Although the limited sizes of the urban zones in the northern villages lend themselves well to rapid strike force deployment, adverse factors can arise. Refer to subsection 4.2.3.1 Initial deployment and availability. Local fire departments therefore may not always be able to comply with the prescribed strike force deployment numbers.

As prescribed in the fire safety policies of the Minister of Public Security, mobilization times under the 2011 Nunavik FSCP were 10 minutes plus travel with emergency response vehicles and equipment. Refer to Table 11 for specific response times.

Finally, given the limited resources in each northern village, emergency responses made up of less than four fire fighters and officers must be considered defensive responses in order to not put at risk or endanger the health and safety of the responders. Refer to NFPA standard 1500.

** Protection Objectives **

- Strive to ensure an optimal strike force by taking into consideration all available resources and adapt deployment protocols in accordance with these availabilities (action no. 29).
- Strike force deployment and mobilization times must be recorded by the northern villages and transmitted to the KRG for follow-up under action no. 36 (action no. 30).
- Develop and implement a procedure concerning defensive fire fighting strategies for all categories of risk, in parallel with action no. 27 (action no. 31).

4.3 Objective 4 – Self-Protection Measures

Fill any eventual shortfall in terms of fire fighting capacity with adapted self-protection measures (objective 4, fire safety policies of the Minister of Public Security).

** Portrait of the Situation **

The self-protection measures implemented under the 2011 Nunavik FSCP permitted the installation of hand-held fire extinguishers in every dwelling located in sectors that cannot be reached within a response time necessary for an effective intervention (15 minutes), as well as the delivery of training on the handling of hand-held fire extinguishers.

** Protection Objective **

Continue to promote whenever possible the implementation of self-protection measures, such as the installation of hand-held fire extinguishers, fire extinguishing systems, early detection devices, etc. (action no. 32).

4.4 Objective 5 – Other Risks

In the case of other risks of disaster that can require the use of fire safety resources, plan emergency response procedures and provide for intervention procedures allowing the deployment of an optimum strike force taking into account the resources available within the region (objective 5, fire safety policies of the Minister of Public Security).

** Portrait of the Situation **

Although the northern villages may face other risks specific to their location (such as forest fires) or may identify certain other risks to be of particular importance (such as airport emergencies and serious road accidents), they are under no legal obligation to plan for emergency responses to these other risks. Notwithstanding, due to the risk of forest fires, some communities have taken the initiative to put in place some equipment and deliver

some training to local fire fighters. As well, some communities have acquired specialized vehicle extraction equipment and organized some training regarding the proper operation of this equipment. Finally, while airport emergency risks are present in all communities, no local fire department maintains on staff professionally trained airport fire fighters or appropriate equipment. The KRG strived under the 2011 Nunavik FSCP to accommodate identified needs, source appropriate specialized equipment, and coordinate related recognized training.

Pursuant to section 11 of the *Fire Safety Act*, fire safety cover plans may include elements with regard to disaster or accident risks likely to require the use of local fire safety resources. None of these services are covered under the *Revised Nunavik Fire Safety Cover Plan*. They are listed in Table 13 for information purposes only.

Northorn villagoe		Service	
Northern villages	Airport emergency	Forest fire	Vehicle extraction
Akulivik	Yes	-	-
Aupaluk	Yes	-	-
Inukjuak	Yes	-	-
lvujivik	Yes	-	-
Kangiqsujuaq	Yes	-	-
Kangiqsualujjuaq	Yes	Yes	
Kangirsuk	Yes	-	-
Kuujjuaq	Yes	Yes	Yes
Kuujjuaraapik	Yes	Yes	-
Puvirnituq	Yes	-	-
Quaqtaq	Yes	-	-
Salluit	Yes	-	Yes
Tasiujaq	Yes	-	-
Umiujaq	Yes	Yes	-

Table 1	3. Serv	vices for	other	risks
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Source: KRG

4.5 Objective 6 – Optimal Use of Fire Safety Resources

Maximize the use of resources assigned to fire safety (objective 6, fire safety policies of the Minister of Public Security).

** Portrait of the Situation **

According to the fire safety policies of the Minister of Public Security, the resources contemplated under subsection 4.2, Objectives 2 and 3 – Response Resources are not intended to be used only within a municipality's boundaries. In southern Québec, the fire safety resources of one municipality may be called on to respond to an incident in another municipality taking into account the risk category and proximity of the fire department to an incident. This sharing of resources is coordinated through reciprocal fire safety assistance

agreements. In Nunavik, however the fire safety resources of any one remote northern village are simply not available for emergency responses in any neighbouring municipality. The only exception is in Kuujjuaraapik.

Under an informal mutual aid agreement, the local fire departments of Whapmagoostui and Kuujjuaraapik may be called on to lend assistance to one another. The Cree and Inuit communities stand side by side at the mouth of the Great Whale River where it empties into Hudson Bay. The populations of the two communities are roughly 900 and 650, respectively.

** Protection Objective **

Conduct special fire prevention planning for certain risks (ex. certain sectors, properties or activities) to take into account response deficiencies (ex. sectors that cannot be reached by a strike force in less than 15 minutes), including adjustment deployment and defense response procedures, self-protection measures, specific regulatory provisions, etc. (action no. 33).

4.6 Objective 7 – Supramunicipal Support

At the supramunicipal level, give priority to the use of regional county municipalities to organize or manage some functions in the field of fire safety (objective 7, fire safety policies of the Minister of Public Security).

** Portrait of the Situation **

The KRG played a major role coordinating the development and implementation of the 2011 Nunavik FSCP. Under the *Revised Nunavik Fire Safety Cover Plan*, the KRG intends to continue this role. It will specifically be involved in low-risk inspections and average, high and extremely high-risk inspections, public awareness activities, inspections and maintenance of water supply as well as fire fighting infrastructure, vehicles and equipment, the delivery of fire fighter and non-urban officer training, as well as emergency response and strike force deployment planning. Refer to Section 4, Objectives (above) in its entirety. To this end, the KRG employs a public safety and fire prevention technician and a full-time coordinator.

** Protection Objectives **

- Coordinate the implementation of the *Revised Nunavik Fire Safety Cover Plan* (action no. 34).
- Organize the activities of the Fire Safety Committee and ensure follow-up, in parallel with action no. 38 (action no. 35).

- Continue to compile data collected by the northern villages for annual reporting purposes (section 35 of the *Fire Safety Act*) and transmit the reporting to the MSP pursuant to the *Fire Safety Act* (action no. 36).
- Maintain a public safety and fire prevention technician and two civil security technician positions, and make these resources available to local fire departments (action no. 37).

4.7 Objective 8 – Coordination of Public Safety

Plan fire safety with the intention of adapting resources and organizations to other structures dedicated to public safety, whether in the field of emergency preparedness, rescue organization, emergency pre-hospital services or police services (objective 8, fire safety policies of the Minister of Public Security).

** Portrait of the Situation **

The KRG and local fire departments (concurrently with the implementation of action no. 35) will create a regional emergency advisory committee for public safety stakeholders. The committee may comprise the Kativik Regional Police Force, the Nunavik Regional Board of Health and Social Services, Hydro-Québec, etc.). It will meet at least once annually. The mandate of the committee will be to clearly define the roles and responsibilities of each stakeholder for emergency responses.

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** Protection Objective **
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Set up a regional emergency advisory committee, organize at least one meeting every year and ensure follow-up, in parallel with action no. 35 (action no. 38).

SECTION 5 – CONSULTATIONS

5.1 Consultations with the Northern Villages

Pursuant to section 15 of the *Fire Safety Act*, in May, June and August 2018, the northern villages in Nunavik were consulted on the objectives and actions contained in the *Revised Nunavik Fire Safety Cover Plan*. These same objectives and actions were adopted by the KRG Executive Committee.

5.2 Public Consultations

Pursuant to section 18 of the *Fire Safety Act*, the draft version of the *Revised Nunavik Fire Safety Cover Plan* was submitted for public consultation. Consultations took place on the dates and in the places listed below:

- on May 22, 2018 in Tasiujaq;
- on May 23, 2018 in Kangiqsualujjuaq;
- on May 25, 2018 in Aupaluk;
- on June 18, 2018 in Kangiqsujuaq;
- on June 19, 2018 in Quaqtaq;
- on June 21, 2018 in Kangirsuk;
- on June 26, 2018 in Kuujjuaraapik;
- on June 26, 2018 in Umiujaq;
- on June 27, 2018 in Inukjuak;
- on June 27, 2018 in Puvirnituq;
- on June 28, 2018 in Akulivik;
- on June 28, 2018 in Ivujivik;
- on June 28, 2018 in Salluit;
- on August 22, 2018 in Kuujjuaq.

Finally, a letter was transmitted by the KRG to each northern village with a copy of the draft version of the *Revised Nunavik Fire Safety Cover Plan*. The letter invited the residents of each northern village to return their feedback to the KRG.

Participation in the consultations mainly involved fire fighters and municipal elected officials. Notwithstanding, all those who attended consultations received the information requested and appeared satisfied with the presentations.

5.3 Summary of Feedback

The minutes of the public consultations appear in appendix.

SECTION 6 – IMPLEMENTATION PLAN

The following implementation plan proposes actions for the KRG and the northern villages under the *Revised Nunavik Fire Safety Cover Plan*. The entries identify timetables, lead stakeholders, and estimated costs to achieve each action. The implementation plan incorporates the actions of the different stakeholders into a single table.

							R	ESP	ONS	SIBL	E Al	JTH	ORII	ΓY				
No.	ACTIONS Approved by resolution of the northern villages and the KRG	TIMETABLE (year)	KRG	Akulivik	Aupaluk	Inukjuak	Ivujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuaraapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq	Estimated additional cost
	FIRE PREVENTION																	
	Incident evaluation and analysis																	
1	Maintain and, as necessary, enhance the incident evaluation and analysis program with focus on identified critical elements.	1 to 5	х															
2	Transmit reporting to the KRG for compilation and analysis purposes.	1 to 5		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	
	Municipal bylaws		-															
3	Maintain and, as necessary, enhance municipal fire prevention bylaws.	1 to 5		Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	
	Obtain information from the government authority responsible for the building or safety																	
4	code or standard in question, before any new construction with a deviation or derogation from that code is approved.	1 to 5	X	Х	Х	Х	Х	X	Х	Х	Х	Х	Х	Х	Х	Х	X	
	Smoke detector installation and low-risk inspections																	
5	Maintain and, as necessary, enhance regular smoke detector installation and low-risk inspection programs.	1 to 5	х	x	x	x	x	x	х	х	х	x	х	х	х	x	x	
6	On receipt of fire prevention inspection data from the KMHB, transmit it to local fire departments for low-risk inspection compilation and analysis purposes.	1 to 5	х															
	Average, high and extremely high-risk inspections																	
7	Develop and, as necessary, enhance average, high and extremely high-risk inspection programs.	1 to 5	х	x	х	x	х	x	х	х	х	х	х	х	х	x	x	
	Identify average, high and extremely high-risk inspection needs and hire one or more																	Refer to the information in
8	qualified fire prevention technicians to carry out inspections in parallel with action no. 27, and identify funding for this purpose.	1	X															Appendix C.
	Public awareness																	
9	Maintain and, as necessary, enhance the regional fire prevention public awareness program.	1 to 5	х	х	x	х	x	х	х	х	х	х	Х	х	х	х	x	

							R	ESP	ONS	SIBL	E Al	JTHO	ORIT	Y				
No.	ACTIONS Approved by resolution of the northern villages and the KRG	TIMETABLE (year)	KRG	Akulivik	Aupaluk	Inukjuak	lvujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuaraapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq	Estimated additional cost
	RESPONSE RESOURCES																	
	Water supply																	
10	Maintain and, as necessary, enhance water reservoir capacity and water flow in every community in the region.	1 to 5		x	x	x	x	x	x	x	х	х	х	Х	Х	x	x	
11	Implement and, as required, modify the maintenance and flow evaluation program for fire hydrants.	1 to 5										х						
12	Mobilize a minimum of one water distribution truck for emergency responses in every community that does not possess aqueduct and fire hydrant infrastructure.	1 to 5		x	х	х	х	х	х	х	х		х	х	х	х	х	
	Fire halls	•																
13	Carry out renovation work on fire halls in cooperation with the concerned northern villages and fire departments, and identify funding for this purpose.	1 to 5	Х	x	х	х	х	х	х	х	х	х	х	х	х	х	х	Refer to the information in Appendix C.
	Fire trucks			•														
14	Maintain and, as necessary, enhance the fire truck and pump verification, inspection, maintenance and renewal program in accordance with applicable standards, the GAERVAI and the <i>Regulation respecting Safety Standards for Road Vehicles</i> , and identify funding for this purpose.	1 to 5	x	x	x	x	x	х	x	x	х	х	х	х	х	x	x	Refer to the information in Appendix C.
15	Ensure fire trucks are inspected and maintained in accordance with Société de l'assurance automobile du Québec regulations.	1 to 5	х	x	х	х	x	х	x	х	х	х	х	х	х	х	х	
	Fire fighter equipment																	
16	Maintain and, as necessary, enhance the fire fighter equipment verification, inspection, maintenance and renewal program in accordance with manufacturer recommendations, the GAERVAI and applicable standards and regulations, and identify funding for this purpose.	1 to 5	x	x	x	x	x	x	x	x	x	x	x	x	х	x	x	Refer to the information in Appendix C.
17	Develop and implement an inspection, decontamination and replacement program for fire	1 to 5	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	1

							R	RESF	PONS	SIBL	E Al	JTH	ORI	ΓY				
No.	ACTIONS Approved by resolution of the northern villages and the KRG	TIMETABLE (year)	KRG	Akulivik	Aupaluk	Inukjuak	Ivujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuaraapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq	Estimated additional cost
	fighter protection clothing (bunker suits, helmets, hoods, boots and gloves) in accordance with manufacturer recommendations, the GBP–EVPLCI produced by the CNESST and NFPA 1851, and identify funding for this purpose.																	
	Communication systems		•	-														
18	Maintain and, as necessary, enhance the verification, inspection, maintenance and renewal of communication systems, and identify funding for this purpose.	2	x	x	x	X	x	x	x	x	x	x	x	x	х	x	х	Refer to the information in Appendix C.
	Initial deployment and availability																	
19	For low risks, the response time for the available strike force of all local fire departments will be within 15 minutes in their urban zone.	1 to 5		х	х	x	x	х	x	x	x	х	x	х	х	x	х	
20	For average, high and extremely high risks, the response time for the available strike force of all local fire departments will be within 15 minutes in their urban zone and pre-incident planning guidelines will be applied, in parallel with action no. 27.	1 to 5		x	x	x	x	x	x	x	x	x	x	x	х	x	х	
21	Regularly validate fire fighter availability and implement fire fighting strategies that follow pre-incident planning.	1 to 5		х	х	х	х	х	х	х	х	х	x	х	х	х	х	
22	Conduct a review of recruiting methods in order to encourage more volunteer fire fighters, and enhance methods for retaining members.	1 to 5	х	х	х	х	х	x	х	х	х	х	х	х	х	х	х	
	Training, drills and occupational health and safety																	
23	Comply with the Regulation respecting the Conditions Governing the Exercise of Functions within a Municipal Fire Safety Service.	1 to 5		х	х	x	х	х	x	x	x	х	x	х	х	х	х	
24	Maintain the agreement with the ENPQ recognizing the KRG as responsible for the management of all fire fighter and officer training in Nunavik, and identify funding to coordinate and deliver this training.	1 to 5	x															Refer to the information in Appendix C.
25	Develop and implement refresher training and a training program for certified fire fighters and officers in accordance with ENPQ guidelines and modelled on NFPA standard 1500.	1 to 5	х	х	х	х	х	х	х	х	х	х	х	х	х	х	х	
26	Develop and implement occupational health and safety programming.	1 to 5	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	

				RESPONSIBLE AUTHORITY														
No.	ACTIONS Approved by resolution of the northern villages and the KRG	TIMETABLE (year)	KRG	Akulivik	Aupaluk	Inukjuak	lvujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuaraapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq	Estimated additional cost
	Emergency response planning																	
27	Develop a pre-incident planning program for average, high and extremely high risks taking into account available resources and NFPA standard 1620 and including annual objectives and priority based on category of risk.	1 to 5	x	x	x	x	x	x	x	x	x	x	х	x	x	x	x	
28	Continue to build awareness in the northern villages about the locations of risk categories in their territories and impacts on deployment objectives, and to encourage the incorporation of this knowledge into urban planning.	1 to 5	х															
	Strike force deployment and mobilization times																	
29	Strive to ensure an optimal strike force by taking into consideration all available resources and adapt deployment protocols in accordance with these availabilities	1 to 5		х	х	x	х	x	х	х	х	х	х	х	x	x	x	
30	Strike force deployment and mobilization times must be recorded by the northern villages and transmitted to the KRG for follow-up under action no. 36.	1 to 5		х	х	x	х	х	х	х	х	Х	х	х	х	х	x	
31	Develop and implement a procedure concerning defensive fire fighting strategies for all categories of risk, in parallel with action no. 27.	1 to 5	Х	х	х	x	х	х	х	х	х	х	х	х	х	х	х	
	SELF-PROTECTION MEASURES																	
32	Continue to promote whenever possible the implementation of self-protection measures, such as the installation of hand-held fire extinguishers, fire extinguishing systems, early detection devices, etc.	1 to 5	х	x	x	x	x	x	x	x	x	х	х	x	x	x	x	
	OPTIMAL USE OF FIRE SAFETY RESOURCES			_			_											
33	Conduct special fire prevention planning for certain risk classification results (ex. certain sectors, properties or activities) to take into account response deficiencies (ex. sectors that cannot be reached by a strike force in less than 15 minutes), including adjustment deployment and defense response procedures, self-protection measures, specific regulatory provisions, etc.	1 to 5	x	x	x	x	x	x	x	x	x	x	х	x	x	x	x	
	SUPRAMUNICIPAL SUPPORT																	

No.	ACTIONS Approved by resolution of the northern villages and the KRG	TIMETABLE (year)			RESPONSIBLE AUTHORITY													
			KRG	Akulivik	Aupaluk	Inukjuak	lvujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuaraapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq	Estimated additional cost
34	Coordinate the implementation of the Revised Nunavik Fire Safety Cover Plan.	1 to 5	Х															
35	Organize the activities of the Fire Safety Committee and ensure follow-up, in parallel with action no. 38.	1 to 5	Х															
36	Continue to compile data collected by the northern villages for annual reporting purposes (section 35 of the <i>Fire Safety Act</i>) and transmit the reporting to the MSP pursuant to the <i>Fire Safety Act</i> .	1 to 5	x															
37	Maintain a public safety and fire prevention technician and two civil security technician positions, and make these resources available to local fire departments.	1 to 5	Х															
	COORDINATION OF PUBLIC SAFETY																	
38	Set up a regional emergency advisory committee, organize at least one meeting every year and ensure follow-up, in parallel with action no. 35.	1 to 5	Х	x	х	x	x	x	х	х	х	х	х	Х	х	Х	х	
	Total estimated costs to implement the Revised Nunavik Fire Safety Cover Plan													Refer to the information in Appendix C.				

SECTION 7 – CONCLUSION

The *Fire Safety Act* gives local and regional authorities a mandate to plan fire safety in their territories. The *Revised Nunavik Fire Safety Cover Plan* ensures the continuity of fire safety planning in Nunavik.

In compliance with the fire safety policies of the Minister of Public Security, the *Revised Nunavik Fire Safety Cover Plan* is intended to be an ongoing fire safety improvement tool. The implementation of the five prevention measures will enhance awareness of fire safety in the northern villages and reduce fires. The actions of regional authorities will enable local fire departments to share information and standardize command structures. The budgets identified for fire safety demonstrate that elected municipal and regional authorities are aware of the need for well-equipped and well-trained fire departments to improve the safety of residents.

While the implementation of the 2011 Nunavik FSCP helped to identify shortfalls in fire safety in the northern villages, feedback provided over the years by the Fire Safety Committee as well as municipal officials and elected local and regional authorities has made it possible to develop solutions for most of these.

Taking into consideration all the progress made under the 2011 Nunavik FSCP, the implementation of the *Revised Nunavik Fire Safety Cover Plan* is expected to achieve further fire protection improvements in the coming years.

APPENDICES

Appendix A: Municipal maps with fire risk designations.

- Appendix B: *Nunavik Fire Halls Renovation, Report Analysis and Cost Evaluation* (NBA-2017-946).
- Appendix C: Budget for the Revised Nunavik Fire Safety Cover Plan.
- Appendix D: Minutes of the public consultations.