NUNAVIK FIRE SAFETY COVER PLAN

Kativik Regional Government

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Section 1 – Introduction

1.1 Québec-wide Process

In June 2000, the Québec government adopted the *Fire Safety Act*. This legislation crowned five years of consultation work on the part of the Ministère de la Sécurité publique (public security, MSP) in co-operation with its main partners in the field of civil protection. It represents the key element in a reform to change the perception of stakeholders (citizens, fire fighters, elected municipal officials, etc.) concerning fire fighting and fire protection activities as well as to encourage stakeholders to adopt practices that comply with their related responsibilities.

In particular, the *Fire Safety Act* requires that a regional fire safety planning process be carried out by each regional county municipality. The intent of this process is to foster increased awareness of the fire risks in each territory and stimulate resource planning that maximizes protection for residents and property. The process is also intended to encourage dialogue among the municipalities of a same region in order to increase organizational efficiency, the enhanced use of resources and equipment as well as emphasis on preventive measures. Although this planning will necessarily be inspired by current fire safety quality and efficiency standards, it leaves decisions concerning the level of protection for each sector in each territory in the hands of elected municipal officials.

A risk management and decision-making instrument for elected municipal officials as well as a planning tool for those in charge of emergency response operations, the main goal of the fire safety cover plan is to provide procedures for fire safety organization in each regional county municipality. Essentially, as its name indicates the fire safety cover plan is a risk management exercise, involving analysis of the risks present in the territory followed by the establishment of appropriate prevention measures to reduce the probability of a fire and the planning of emergency response procedures that will effectively limit damage when a fire breaks out.

Sections 10 and 11 of the *Fire Safety Act* specify the different elements to include in a fire safety cover plan and the preparation steps to be followed. They are:

- inventory, assessment and classification of the fire risks present in the municipal territories concerned;
- inventory and assessment of the existing or planned fire protection measures as well as the human, physical and financial resources allocated to fire safety by the local or regional authorities or by an inter-municipal board;
- inventory of the infrastructures and water supply resources available for fire safety;
- analysis of the functional relationships that exist between these resources;
- assessment of the operational procedures followed by municipal fire departments;
- for each risk category of the inventory or for each section of the territory examined under the plan, identification of optimum fire protection objectives that can be achieved, taking into account the measures and resources in place;
- actions that the municipal and regional officials should take to achieve these objectives, in the context of implementation plans that are incorporated into the fire safety cover plan;
- development of a procedure that allows periodical verification of the efficiency of the actions implemented and the extent to which the objectives were achieved.

In summary, the regional fire safety planning process has two core aims: a significant

reduction in the losses produced by fires and the optimization of resources in each region.

1.2 Nunavik-wide Process

In 2003 in accordance with the mandate it had received from the Québec government, the Kativik Regional Government (KRG) through its Civil Security Section began developing a comprehensive fire safety cover plan for all the communities of Nunavik.

Pursuant to the *Act respecting Northern Villages and the Kativik Regional Government* (Kativik Act), the KRG exercises jurisdiction over all Québec territory north of the 55th parallel, excluding certain Cree-designated lands. It has specific competence in local administration, transportation and communications, policing, labour training, and furthermore acts as a resource organization for public and private organizations and the communities for all questions dealing with civil security and fire protection.

It should be emphasized that Nunavik is a remote region and as such the implementation of a regional planning process for fire safety presented a number of unique challenges, not the least of which being that each of the region's 14 communities are isolated one from another. In fact, as a direct result of this situation, fire safety resources and equipment in each community have been developed independently and to widely differing degrees over the past 30 years. In this context, the KRG Council decided to establish a fire safety steering committee composed of municipal elected and fire safety representatives from several communities and regional representatives. The role of the KRG steering committee was to oversee the development of this document and to develop the recommendations contained herein.

The regional process leading to the preparation of this fire safety cover plan proceeded as described generally below:

- early 2003, creation of a fire safety steering committee to oversee the planning process;
- subsequently in 2003, meetings of the fire safety steering committee and exchanging of information;
- January 2004, submission of a progress report to the Minister of Public Security;
- throughout 2004, meetings of the fire safety steering committee and exchanging of information;
- spring 2004, training delivered to local fire chiefs concerning risk analysis;
- summer and fall 2004, contracting of a consultant to provide technical advice on fire safety and applicable national codes;
- September 2004, formal report made by the fire safety steering committee to the KRG Council, including the 17 basic recommendations that had been developed by the steering committee (refer to Section 6.2 of this document);
- October to November 2004, consultations carried out in all the Northern villages concerning the fire safety steering committee's 17 basic recommendations and their incorporation into the fire safety cover plan planning;
- December 2004, meeting of the fire safety steering committee with the KRG Council and approval of recommendations and a fire safety cover plan planning outline;
- February to March 2005, preparation of the *Nunavik Fire Safety Cover Plan* (Nunavik FSCP) and submission to the MSP;
- December 2005, receipt from the MSP of opinions and comments concerning the *Nunavik* FSCP;
- May 2006 to May 2007, further inventory, assessment and compilation of existing local fire protection measures, human, physical and financial resources, as well as fire incident reports over the last several years;

- June 2007, meeting of the fire safety steering committee to review updated resource assessments and analysis for all the Northern villages;

- August and September 2007, meetings with municipal councils in all the Northern villages to explain the Nunavik FSCP and to discuss the KRG and local implementation plans contained therein. At same time, public consultations carried out over the FM radio station in each community concerning the Nunavik FSCP;

1.3 Summary Observations

The following important observation made by the KRG fire safety steering committee through the course of preparing the Nunavik FSCP needs to be noted. Over the last 30 years, the Northern villages in Nunavik have had the extra burden of creating and developing a complete range of essential municipal services. While the development of fire fighting resources has not been neglected, it must be understood that they are just one area of priority for Northern Québec's young municipalities. As a direct result of these other development pressures, it may be said that Nunavik's local fire fighting resources are underdeveloped. While the fire safety steering committee, the KRG Council and local stakeholders all agree wholeheartedly with Québec's key aim of optimizing fire protection resources on a regional level, and that aim has been pursued in this document, it is apparent to all in Nunavik that current shortfalls in resources also need to be addressed, at the same time as optimization issues.

Section 2 – Portrait of Nunavik

2.1 Geographic Profile

Geography

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 km^2 and its communities are located between 1500 and 2500 km north of Montreal.

Air and Sea Transportation Links

Unlike many of Québec's other regions, Nunavik can not be accessed by road or rail. In addition, the region's communities are all isolated from one another. In this context, air transportation plays an essential role in connecting the communities of the region, as well as connecting the region to the rest of Québec. Marine transportation is also an essential though seasonal service. During the few months of open water every summer, ships stop at each Nunavik community to deliver a wide variety of needed supplies, including fuel, building materials and non-perishable goods.

Climate

An Arctic climate prevails north of the 55th parallel in Québec. Although Nunavik benefits from long hours of daylight, summers are short and cool. Winters 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 close to -40°C.

2.2 Administrative Profile

The once nomadic populations of Nunavik only settled in communities along the region's coasts in the later half of the 20th century, effecting changes to their traditional way of life. This mixture of nomadic and sedentary lifestyles is reflected in the organization of the region, which is established expressly in the *James Bay and Northern Québec Agreement* (JBNQA) signed in 1975 by the governments of Québec and Canada and by the Inuit, as well as in the JBNQA's attendant laws and agreements. The most prominent elements for the purpose of this document (the KRG and the Northern villages) are described below.

James Bay and Northern Québec Agreement

On November 11, 1975, the JBNQA was signed by the governments of Canada and Québec, Hydro-Québec, the Cree of the James Bay region, and the Inuit of Nunavik. Sections 12 and 13 of the JBNQA provided for the creation of local and regional governments north of the 55th parallel, while Section 29 focussed on the economic and social development of this region, specifically municipal infrastructure development. On June 23, 1978, the National Assembly adopted the Kativik Act, officially creating the local and regional governments contemplated under the JBNQA. In particular, Section 2 of the Act gave Nunavik communities jurisdiction over:

- water and sewer services;
- fire protection;
- recreation and cultural activities;
- roads, lighting and snow removal services;
- garbage removal and disposal;
- heating;
- power.

Kativik Regional Government

The KRG is a public organization created in 1978 pursuant to the Kativik Act and the JBNQA. The KRG has jurisdiction over all the territory of Québec located north of the 55th parallel, excluding the category IA and IB lands intended for the Cree community of Whapmagoostui. The KRG has its head office in

Kuujjuaq and offices in each of the region's 13 other Northern villages. It is a non-ethnic organization possessing 11 departments, it employs over 300 workers.

The KRG is administered by its Council, which comprises 16 members elected for two-year terms, which is to say one regional councillor drawn from each of the 14 Northern villages, the chief of the Naskapi village of Kawawachikamach and a Chairperson. The KRG Council determines the organization's orientations, it makes decisions that are regional in scope, and it focuses on solutions that are common to every Northern village in the region.

With respect to fire safety, the KRG plays a co-ordinating role among the Northern villages. For example, the KRG created a civil security section in 1999 for just this purpose. Its personnel include two employees who strive to foster improved services, stable funding for municipal fire safety activities, training and operational support. They are also assisted as required by consultants on issues such as prevention as well as advanced fire cause and circumstance investigations. With the implementation of the Nunavik FSCP, the delivery of these services will be formalized and expanded. And it is also hoped, in light of recent technological advances which is to say improved computer connectivity in Nunavik's remote communities, that it will be easier for regional resources to provide support to fire safety resources in all of Nunavik's communities.

In addition, a regional public safety officer position was recently created by the KRG. While work continues to define more accurately the roles of this position, duties could come to include public safety awareness activities and, potentially, supervision and training of local public safety officers. Clearly then the regional safety officer has a role to play in co-ordinating fire safety activities on a regional level.

However, before regional co-ordination can become as efficient as contemplated in the *Fire Safety Policies of the Minister of Public Security* (2001), it is essential that the resources of all Northern villages be upgraded to adequate and similar levels. At the moment, the differing levels of local resources and structures make effective co-ordination almost impossible.

Northern Villages

In the 14 communities of Nunavik, the Northern villages are responsible for delivering essential public services, including the management of local fire safety resources and the planning of related services. Because Nunavik communities have an extremely limited tax base, the assistance of the Québec government is essential to all municipal activities.

In order to assist the Northern villages with their obligations, the KRG provides:

- advice on matters related to municipal operations;
- technical assistance in specific areas, including legal matters, municipal management, engineering, town planning and fire protection;
- financial assistance to help the Northern villages meet their training needs.

It should be noted that prior to 1975, the Inuit communities that comprise Nunavik were little more than rudimentary settlements. These communities possessed only the most basic public services, which is to say a federal or provincial police detachment, a nursing station and an elementary day school. Given the underdeveloped state of Nunavik's municipalities at that time, the Québec government directed its Ministère des Affaires municipales (municipal affairs) to assist these communities and the KRG in developing a certain number of the above-mentioned services, including fire protection. Nevertheless, with all the other necessary basic development work required, the evolution of fire protection services over the last 30 years may be described as spotty at best.

Stated simply, for 25 years following the adoption of the Kativik Act fire protection was poorly funded in Nunavik. In fact, until as late as 1999, most communities possessed only a pump mounted on a trailer and decommissioned drinking water supply trucks to fight fires, not to mention the absence of basic fire hall infrastructure and necessary equipment in many of Nunavik's communities. In addition, training for local volunteer fire fighters was infrequent and support was limited.

2.3 Social and Economic Profile

Demographic Characteristics

The total population of Nunavik is currently estimated at roughly 11,000. Roughly 91% of the population is Inuit. The remainder of the region's residents are health, education and other professionals living temporarily in Nunavik. The region's entire population lives in 14 isolated communities varying in size between 2300 and 175 residents.

Nunavik's population possesses characteristics that are very different from those of the population of Québec in general. In Nunavik, the population is very young; the number of children under 15 years old is, proportionally, two times higher in Nunavik when compared with Québec as a whole. As well, the rate of population growth is six times higher than elsewhere in Québec. This growth is already impacting severely on public infrastructure and service needs, including housing, waste management, health care, education, employment and fire safety. As well, as illustrated in section 3 of this document, Nunavik's demographic situation effects the ability of the Northern villages to maintain optimal strike forces. It constantly proves difficult to obtain adequate numbers of qualified volunteers due to each community's limited pool labourers.

It should also be noted that average life expectancy in Nunavik is lower than in Québec as a whole and the proportion of elderly people being four times less. In 2001, average life expectancy in Nunavik was 66.7 years, while the average for Canada was to 79.3 years.

Population and growth, 2001 and 2006

Village	2001	2006	Growth rate (%)
Akulivik	472	507	7.4
Aupaluk	159	174	9.4
Inukjuak	1,294	1597	23.4
Ivujivik	298	349	17.1
Kangiqsujuaq	710	735	3.5
Kangiqsualujjuaq	536	605	12.9
Kangirsuk	436	466	6.9
Kuujjuaq	1,932	2132	10.4
Kuujjuarapik	555	568	2.3
Puvirnituq	1,287	1457	13.2
Quaqtaq	305	315	3.3
Salluit	1,072	1241	15.8
Tasiujaq	228	248	8.8
Umiujaq	348	390	12.1
Nunavik	9,632	10,784	12.0

Source: *Nunavik at a Glance - 2007*

Language

With respect to language, Inuktitut is spoken most often in the communities of Nunavik and it is taught at school at every elementary and secondary level. Many Inuit are also able to communicate in English or French, since they are introduced to a second language at school beginning in grade 4. Currently, Nunavik's in-school population exceeds 3000 students, which is to say roughly 33% of the population.

Employment

Job creation is considered a good indicator of regional economic vitality. In Nunavik, job creation jumped between 1995 and 2005. The number of regular, full-time jobs nearly doubled. This situation stands in contrast to that of Québec, where job creation progressed at a steady but more moderate pace.

The unusually rapid pace of job creation in Nunavik is attributable to several factors. First, certain characteristics of the region's population played a role in this result. For example, ever-increasing numbers of school-aged children in the education system have forced public authorities to increase educational services, which translates into more personnel. This same reasoning can also help explain job growth in other public service fields. As well, the transfer of new responsibilities to the KRG by the governments of Québec and Canada has contributed to job creation. Take for example the creation of the Kativik Municipal Housing Bureau and the region's childcare network. Finally, the growth of business activities (such as the upgrading of the hotels of the Federation of Co-operatives of Northern Québec and the creation of local businesses by dynamic local entrepreneurs) with the support of economic development programs has also contributed to job creation [Socio-economic Profile of Nunavik].

Housing

Residential buildings represent at least 75% of all the buildings in most of Nunavik's communities, with the exception of Kuujjuaq and Kuujjuarapik which are slightly more developed. In Nunavik, there are three types of housing: social housing, employer-sponsored housing and private homes. The most common type of housing in Nunavik is social housing, representing roughly 80% of the housing market. Social housing units are neither furnished nor equipped with household appliances. Rent is determined by the number of bedrooms and the householder's source of income (wages or income security benefits). Finally, the Kativik Municipal Housing Bureau is responsible for the management of social housing.

Employer-sponsored housing represents roughly 18% of Nunavik's housing market. Most of these dwellings are furnished and equipped with household appliances.

Private homes represent roughly 2% of Nunavik's housing market. The majority of these homes have been acquired under the Home Ownership Program for Residents of the Kativik Region (purchase of an existing home) or constructed under the program Affordable Housing Québec – Kativik Component (construction of a new home). Both programs are delivered by the Société d'habitation du Québec (housing corporation). The goal of these programs is to counteract the high costs of home ownership in the North attributable to superior insulation, the transport of materials and labour, higher insurance premiums and higher leasing costs for construction equipment [Nunavik Comparative Price Index].

Other Buildings

The variety of building uses in Nunavik is limited and, to a great extent, uniform. In addition to residential buildings, there is a standard level of essential public infrastructure. In fact, as all of Nunavik's communities have been developed at the same time over the last 30 years, many structures in different villages were constructed around the same period with identical construction techniques and similar plans.

Economy

Hunting, fishing, trapping and gathering represent a significant segment of Nunavik's economy. A parallel may even be drawn between wildlife harvesting activities in Nunavik and agricultural activities in the southern regions of Québec; 75% of the protein consumed by Inuit is derived from harvested wildlife. In short, wildlife harvesting activities are essential to the health of Inuit and local economies. Harvesting activities also have a negative impact on human resources for fire fighting purposes. Specifically, as harvesting activities are typically carried out far from each community's urban zone and as every Inuit family must harvest for their subsistence, it often occurs that volunteer fire fighters are outside of their communities in the evenings and on weekends. Because the labour pools of local fire departments are already small, the frequent and numerous absences due to harvesting have a definite impact on fire fighter availability.

In comparison with Nunavik's traditional economy, the region's modern economy is highly influenced by public administration. In fact, government operations are the most important industry in the region. These operations alone represent more than 50% of the region's domestic product, while they represent only 7% of Québec's domestic product.

A large number of Nunavik residents are part of the labour market. The proportion of Nunavik residents included in the working population is higher than for Québec (due to the region's demographic structure which comprises fewer individuals aged 65 and older), but they are less employed.

Notwithstanding, Nunavik residents still make their living through remunerative work. Wages make up a higher proportion of total family income in Nunavik as compared to all of Québec. Contrary to preconceived notions, transfer payments are a smaller part of total family income in Nunavik than Québec as a whole. Consequently, while government is very important in Nunavik, it is less because the government supports families through transfer payments than because government administration is a major regional employer. In addition, transfers to individuals respond poorly to the distinctive characteristics of Nunavik.

Everything being considered, the residents of Nunavik earn less than other Québecers. All documented indicators support this conclusion. The median income of individuals aged 15 and older, the average income of all those who have earnings, as well as the median family income are all lower in Nunavik as compared to Québec as a whole. Only one indicator provides a different result, although even it does not contradict those already mentioned. The median income of households comprising two or more people is equal to the value for Québec. This equal result is however artificial since households are larger in Nunavik. This means that more individuals are supported on smaller personal incomes [Social and Economic Situation of Nunavik].

Drinking Water Supply

Permafrost permeates much of Nunavik, making the construction and operation of underground waterworks both technically complex and prohibitively expensive. In order to ensure a reliable supply of water and sanitary conditions, every building in Nunavik is equipped with drinking water and wastewater tanks. Tanker trucks operated by each Northern village ensure the filling and emptying, respectively, of these tanks on a daily basis. It should be noted that over the years, each Northern village has developed important expertise at operating this essential service.

With respect to delivery, it again needs to be recalled that in Nunavik's communities water delivery is ensured by tanker trucks. In theory, at least three water delivery trucks must be available to guarantee an adequate supply of water at the scene of a fire according to the following scenario: one truck feeding pumps at the scene of the fire, one truck transiting between the fire and the community's water distribution station, and one truck refilling at the water distribution station.

In Nunavik, due to the large number of uncontrollable factors that make it very difficult to ensure an adequate supply of water, especially in the region's less-populated communities, alternatives that require a smaller supply of water while enabling effective responses have been pursued in recent years. Specifically, the KRG and the Northern villages have opted to make vehicles equipped with compressed air foam systems the core of their initial response strategies.

Other Major Infrastructure

In addition, each Nunavik community possesses a certain number of essential public infrastructure. This infrastructure includes:

- a local community service centre (CLSC), plus in some cases a child and youth protection centre, a rehabilitation centre, or a long-term care centre; all these facilities have been designed and fall under the umbrella of the

Nunavik Regional Board of Health and Social Services;

- a school, plus in the cases of Kuujjuaq, Salluit, Inukjuak and Kuujjuarapik a second school or vocational training centre; these facilities have been designed and are operated by the Kativik School Board;
- a childcare centre, or two in Kuujjuaq and Inukjuak; these facilities have been designed and are supervised by the KRG;
- a police station that includes a secure custody area; these facilities have been designed and are operated by the Kativik Regional Police Force;
- a landing strip, airport terminal and garage for storing and maintaining heavy equipment; these facilities in all but Kuujjuaq were designed by the Ministère des Transports du Québec and are now operated by the KRG;
- limited office space in a variety of structures but generally for public administration;
- a fuel tank farm and distribution facility operated by Shell Canada in Kuujjuaq, Kangiqsualujjuaq and Quaqtaq and by the Federation of Co-operatives of Northern Québec in the 11 remaining communities of the region;
- a power generating station constructed and operated by Hydro-Québec;
- communications facilities operated by Bell Canada, Telesat Canada and the KRG, among others;
- one general store (or in some communities two stores) that are essential suppliers of food and other basic consumer products; in most cases these stores are operated by the Northern company or the local co-operative and include the annual stocks needed for the community for an entire year;
- one or two hotels that serve as accommodations essentially for business people and government employees while they are travelling in Nunavik.

Note: The Cree community of Whapmagoostui is situated immediately next to Kuujjuarapik, but is not part of the Kativik Region.

Section 3 – Fire Safety Situation

Pursuant to the *Act respecting Northern Villages and the Kativik Regional Government*, each Northern village in its respective territory may organize, maintain and regulate a fire department and fire brigade, as well as appoint the officers necessary for the extinction and suppression of fires and for the protection of persons and property.

This section presents an inventory and assessment of these municipal financial, human and physical resources, as well as fire protection measures, water resources and communications systems that currently exist or that are planned in the Northern villages of Nunavik, in accordance with section 10 of the *Fire Safety Act*.

3.1 Inter-municipal Co-operation

Unlike other regions of Québec where co-operation agreements between municipalities permit access to important additional human resources and equipment as needed and in a reasonable lapse of time, the isolated nature of each Nunavik municipality prevents the sharing of human resources and equipment. Fire fighting vehicles can not be driven 100 km across the tundra, up and down mountains and across rivers to combat a fire in the neighbouring community.

The one exception to this situation occurs in Kuujjuarapik, where the Northern village is situated immediately next to the Cree community of Whapmagoostui. While in practice the fire departments of these neighbouring Inuit and Cree communities assist one another to respond to fires, no formal agreement exists concerning this mutual assistance. It should be noted that the Northern Village of Kuujjuarapik and the KRG have made repeated attempts over the last 30 years to negotiate a formal agreement, but all attempts have failed.

Table 1 indicates the potential for inter-municipal co-operation in Nunavik.

Table 1. Municipal co-operation

Village	*Within Nunavik*	*Outside of Nunavik*
Akulivik	n/a	n/a
Aupaluk	n/a	n/a
Inukjuak	n/a	n/a
Ivujivik	n/a	n/a
Kangiqsujuaq	n/a	n/a
Kangiqsualujjuaq	n/a	n/a
Kangirsuk	n/a	n/a
Kuujjuaq	n/a	n/a
Kuujjuarapik	n/a	in practice
Puvirnituq	n/a	n/a
Quaqtaq	n/a	n/a
Salluit	n/a	n/a
Tasiujaq	n/a	n/a
Umiujaq	n/a	n/a

3.2 Specialized Emergency Response Services

Fire departments in each of Nunavik's municipalities could potentially offer a variety of specialized services to deal with situations such as aircraft and airport emergencies, hazardous waste and carbon-monoxide poisoning, as well as wilderness search and rescue and automobile accident extraction (jaws of life equipment) operations. Currently, specialized services are practically inexistent, with the one very important exception of aircraft and airport emergency response services.

Each local fire department in Nunavik is by default responsible for offering aircraft and airport emergency response services. To this end, the KRG Transportation Department organizes on a regular basis emergency simulations at the region's different airports. These simulations allow local fire departments as well as Kativik Regional Police Force, CLSC and Canadian Ranger units to develop invaluable experience and understand their

limitations in the case of such emergencies. Notwithstanding, apart from Kuujjuaq, local response stakeholders do not have the equipment or all of the specialized training necessary to properly deal with the eventualities of this type of emergency. In 1996, when Transport Canada transferred to the KRG responsibility for the management and operation of the airport in Kuujjuaq, all on-site emergency resources as well as responsibility for emergency responses was passed along to the Northern Village of Kuujjuaq and its fire department. These resources included two pumper trucks (one of which was inoperative) and three trained fire fighters.

Table 2. Specialized emergency services

Village	Airport / aircraft	Hazardous materials	Search and rescue	Carbon monoxide	Accident extraction
Akulivik	X				
Aupaluk	X				
Inukjuak	X				
Ivujivik	X				
Kangiqsujuaq	X				
Kangiqsualujjuaq	X				
Kangirsuk	X				
Kuujjuaq	X				X
Kuujjuarapik	X				
Puvirnituq	X				
Quaqtaq	X				
Salluit	X				
Tasiujaq	X				
Umiujaq	X				

3.3 Other Emergency Response Providers

The Nunavik Regional Board of Health and Social Services, Northern villages and CLSCs are responsible for the delivery of **pre-hospital emergency services** in and around each of the region's communities. The purpose of these services is to ensure the delivery of appropriate, efficient and quality responses aimed at reducing the mortality and morbidity rate among citizens when required. Co-operation agreements concerning this service do exist between the Nunavik Regional Board of Health and Social Services, each of the concerned Northern villages and the local CLSCs. The Northern villages are responsible for managing first responders and maintaining equipment, while the local CLSCs are responsible for dispatching first responders. The Nunavik Regional Board of Health and Social Services ensures the smooth operation of these services and the delivery of necessary training.

Search and rescue responses are very important in Nunavik. As part of their harvesting activities, Nunavik Inuit regularly travel along more than 2500 km of coastline and across much of the region's 507,000 square kilometres. However, extreme weather conditions and equipment failure can threaten the lives of harvesters. Procedures for responding to this type of emergency are already established in a formal protocol involving the Northern villages, the Kativik Regional Police Force, the Sûreté du Québec (provincial police) and the Canadian Forces, as well as the Canadian Rangers.

In 2006, the KRG and the Makivik Corporation effected two major equipment acquisition projects for the benefit of all of Nunavik's communities. Twenty-eight snowmobiles (two per community) to assist with winter search and rescue activities and 14 specialized watercraft for summer search and rescue activities were purchased. The KRG also continues to support the acquisition of auxiliary equipment for the new community search and rescue boats and to deliver training.

Public safety officers are municipal employees. These positions represent a creative way of promoting accountability and co-ordination of a number of municipal public safety responsibilities. Potentially and with the proper training and certification, public safety officers could be assigned to co-ordinate in a given municipality search and rescue and pre-hospital services, as well as (in co-operation with the

local fire chief) fire safety, low-risk prevention activities, and volunteer fire fighter training.

Notwithstanding, public safety officer positions are a new initiative and in the three communities where they have been created no standard job description exists and no formal inter-service protocols have been negotiated. In Inukjuak for example, the public safety officer has been made responsible for co-ordinating the readiness of fire fighting, pre-hospital as well as search and rescue emergency services and equipment. He acts as a liaison between the Northern village and other local, regional and provincial public safety organizations. As well, he co-ordinates low-risk inspections carried out by the fire department, participates in local fire safety planning and ensures the implementation of awareness activities. In Kangirsuk, the public safety officer also serves part-time as the fire chief, while in Kuujjuarapik the public safety officer also acts as a municipal by-law enforcement officer. In Kuujjuaq on the other hand public safety responsibilities and co-ordination are divided among several municipal employees.

Table 3. Other emergency response providers

Village	SAR - summer equip.	SAR - winter equip.	Pre-hospital services	Canadian Rangers	Divers	Public safety officers
Akulivik	X	X	X	X		
Aupaluk	X	X		X		
Inukjuak	X	X	X	X		X
Ivujivik	X	X		X		
Kangiqsujuaq	X	X	X	X	X	
Kangiqsualujjuaq	X	X	X	X		
Kangirsuk	X	X	X	X		X
Kuujjuaq	X	X	X	X	X	
Kuujjuarapik	X	X	X	X	X	X
Puvirnituq	X	X	X	X		
Quaqtaq	X	X		X		
Salluit	X	X	X	X	X	
Tasiujaq	X	X		X		
Umiujaq	X	X		X		

3.4 Protection and Prevention Measures

Protection and prevention measures include fire prevention by-laws, awareness programs, low-risk or smoke detector inspection programs, high-risk inspection programs, as well as investigations into the cause and circumstances of fires.

Several years ago, the KRG drafted for the Northern villages a model **by-law concerning fire prevention** for low-risks. The by-law provides a framework for enforcing minimum fire protection and building code standards specifically related to smoke alarms, exit and emergency doors, fire extinguishers, electrical appliances, flammable materials and liquids, smoking areas, as well as open-air fires. The by-law allows for property inspections where it is believed on reasonable grounds that an offence against the by-law is being committed. While all the Northern villages through their representative on the KRG Council have formally expressed their intention to adopt this model by-law, in fact many municipalities have yet to do so. For not more than two years, there also exists now in Nunavik a mechanism for enforcing by-law offences. In addition to the usual awareness and notice procedures, this mechanism adds a procedure for laying fines, a by-law offence processing office and the possibility of enforcement through Nunavik's itinerant courts.

Regular **inspections of low-risks** are carried out by the local fire department in most of the communities of Nunavik and the reports of these inspections are submitted to the KRG Civil Security Section. These low-risk inspections are generally conducted once a year to verify, among other details, that smoke alarms and fire extinguishers are functioning properly and that exit requirements are being respected. Although inspections have been carried out for a number of years in all Nunavik communities, no standard program for the entire region exists and there is no formal mechanism to ensure that the inspections are in fact carried out.

Fire awareness and education are the most effective way of reducing the frequency of fires and associated losses. Every year in conjunction with the annual fire prevention week organized throughout Canada, the KRG encourages each Northern village to host special activities and community events, including visits by volunteer fire fighters to local schools and childcare centres, open-door activities at local fire halls, and other types of activities to raise prevention awareness among the general public. As well, information on fire prevention measures is circulated periodically in each of the region's communities in the form of brochures, posters and local FM radio station announcements. All this information is made available in the three languages spoken in Nunavik, which is to say Inukitut, English and French.

Table 4. Protection and prevention measures

Village	Fire department by-law	Fire prevention by-law	Low-risk inspections	Awareness	High-risk inspections	Incident investigations
Akulivik		X	X	X		
Aupaluk			X	X		
Inukjuak			X	X		
Ivujivik			X	X		
Kangiqsujuaq		X	X	X		
Kangiqsualujjuaq			X	X		
Kangirsuk			X	X		
Kuujjuaq	X	X	X	X		
Kuujjuarapik			X	X		
Puvirnituq		X	X	X		
Quaqtaq			X	X		
Salluit		X	X	X		
Tasiujaq			X	X		
Umiujaq			X	X		

Regular and complete **high-risk inspections** are not currently conducted in Nunavik by any of the region's Northern villages. Despite a high-risk planning and analysis course delivered to local fire chiefs in the spring of 2004, the Northern villages do not possess the human resources qualified to conduct these types of inspections. In addition, there exists no formal mechanism at the regional level to ensure that high-risk inspections are carried out. It should nonetheless be noted that the owners of high-occupant load buildings (such as the Kativik School Board, the KRG and the Kativik Municipal Housing Bureau, for example) ensure that bi-annual inspections of alarm and alert equipment in their public buildings are completed pursuant to the *National Building Code of Canada* and the *National Fire Code* for insurance purposes.

Incident analysis and assessment of simple fire-related incidents is currently carried out by local and regional resources. Accurate records of fire-related incidents in the communities of Nunavik since 2000 are entered into the MSP on-line analysis program and could form the backbone of an eventual incident analysis and assessment program. Notwithstanding, there are currently no resources in Nunavik to ensure fire cause and circumstance investigations of complex incidents. For major fires that result in loss of life or that are suspected to have been caused by criminal intent, responsibility for investigations is in practice turned over to the Kativik Regional Police Force and the Sûreté du Québec.

3.5 Financial, Human and Physical Resources

3.5.1 Financial Resources

All the Northern villages of Nunavik were incorporated in the late 1970s and early 1980s. At that time, the Québec government recognized that, with their limited tax base, the region's municipalities would require assistance to be able to implement local fire safety objectives. For this purpose, the government established a $20,000 annual subsidy to be paid to each Nunavik municipality plus an additional amount for the KRG. The size of this subsidy envelope remained unchanged for almost 30 years, even while individual Northern villages' annual fire safety investments increased significantly.

In 1999, with the creation of the KRG Civil Security Section, the MSP transferred the payment of the Québec government's annual fire safety subsidy to the KRG. In turn, the KRG continued to transfer $20,000 annually to each Northern village for local fire safety priorities (refer to the financial statements of the Northern villages for details on how this funding is used) and it continued to direct the balance of this envelope ($420,000) to region-wide training, awareness and technical support activities. Finally in 2006, further to the signing of the *Agreement concerning Block Funding for the Kativik Regional Government* (Sivunirmut), the KRG Council was able to increase annual fire safety subsidy payments to $25,000 per Northern village.

Table 5. Financial resources - 2006

Village	Total municipal envelope ($)	Fire protection and public security spending ($)	Fire protection and public security spending (%)
Akulivik	3,389,912	70,099	2.07
Aupaluk	1,940,745	19,324	1.00
Inukjuak	5,587,373	83,671	1.50
Ivujivik	1,882,461	41,913	2.23
Kangiqsujuaq	3,384,913	64,882	1.92
Kangiqsualujjuaq	3,920,412	44,170	1.13
Kangirsuk	4,444,526	101,344	2.28
Kuujjuaq	12,083,699	356,136	2.95
Kuujjuarapik	5,839,756	136,127	2.33
Puvirnituq	5,022,622	109,875	2.19
Quaqtaq	2,717,735	64,588	2.38
Salluit	5,071,242	47,425	0.94
Tasiujaq	2,366,312	43,971	1.86
Umiujaq	2,238,009	29,717	1.33
Total	59,889,717	1,213,242	2.03

All the Northern villages combined invested slightly more than $1.2 million. On average the Northern villages spend 2% of their annual budgets on fire protection, representing per capita spending of $110. The portion of funding for these activities that is transferred directly to the Northern villages by the KRG through the Sivunirmut Agreement represents $32 per inhabitant (in theoretical terms since the funding is paid on a per village basis not a per capita basis). As well, in 2006 the KRG invested close to $1 million in fire protection and training.

It should be noted that for the purpose of comparing municipal fire safety spending against the value of local real estate property, no real estate property data are available for the Northern villages.

3.5.2 Human Resources

The populations of the Northern villages of Nunavik range between 175 and 2300. Because these populations are small, the labour pool for fire protection purposes is limited and it is often difficult to comply with even minimum fire fighter availability requirements. As well, in this context even minor employee turnover can have serious impacts on fire fighter availability. Fire fighters work on a volunteer basis and receive only nominal wages. Also as a result of the labour pool situation, fire chief positions in many Northern villages are part-time.

In addition, in the Northern Village of Kuujjuaq, the fire chief has other municipal administrative responsibilities. As well, in the three Northern villages that employ a public safety officer, these positions include assistant fire chief and other locally identified responsibilities, such as by-law enforcement responsibilities in Kuujjuarapik. In fact, the impact of public security officer positions has been quite positive. In the same manner, in other communities where there has traditionally been insufficient resources to hire a permanent, full-time fire chief, consideration should be given to employing public safety officers whose responsibilities include the organization of local fire department activities and continued training in a coherent, long-term manner.

Table 6. Available human resources

Village	Chief	Total -officer and fighters	Water truck operator	Public safety officer
Akulivik	Part	5	X	
Aupaluk	Part	9	X	
Inukjuak	Full	13	X	X
Ivujivik	Part	12	X	
Kangiqsujuaq	Part	10	X	
Kangiqsualujjuaq	Part	7	X	
Kangirsuk	Full	10	X	X
Kuujjuaq	Full	16	X	
Kuujjuarapik	Part	13	X	X
Puvirnituq	Full	5	X	
Quaqtaq	Part	9	X	
Salluit	Vol	10	X	
Tasiujaq	Part	8	X	
Umiujaq	Part	13	X	

Part - part-time
Full - full-time
Vol - volunteer

It is important to note that the data appearing in the table above shows the total number of officers and fire fighters in each Northern village. It is unique to Nunavik (compared with other parts of Québec) that more volunteer fire fighters are available to respond to emergencies during the daytime on weekdays. This phenomenon may be explained by several factors: first, because each Northern village is isolated, volunteer fire fighters necessarily work near home and can be available during the daytime on weekdays; secondly, because Nunavik's population is generally young and most adults have children, fire fighters may not be available to respond to emergencies in the evenings or on weekends when their children are not in school; thirdly, because Nunavik Inuit continue to rely on subsistence harvesting activities to feed themselves and their families many Inuit who hold regular weekly employment must take advantage of their evenings and weekends to carry out their subsistence harvesting activities, sometimes at a great distance from their community.

None of Nunavik's fire chiefs or volunteer fire fighters have fully completed a provincially recognized training program. For this reason, continued training offered in the region has been a priority of the KRG over the last eight years. Despite the high costs and the logistical problems inherent in organizing training in a remote region, roughly 50 sessions of basic fire fighting instruction have been delivered since 2000. Specifically, the material from six of the nine basic fire fighting modules that used to be required for rural volunteer fire fighters in Québec has been taught. These nine modules used to be part of the 27 modules that lead to a Diploma of Vocational Studies in Fire Safety Techniques.

Table 7. Training for fire fighters

Village	Module 1	Module 2	Module 3	Module 4	Module 5	Module 7
Akulivik	6	6	1	1	6	6
Aupaluk	1	5		1	1	5
Inukjuak	10	4	8	1	14	3
Ivujivik	8	5		1	8	5
Kangiqsujuaq	12	10	10	1	12	10
Kangiqsualujjuaq	9	7	5	1	9	8
Kangirsuk	8	7	8	1	8	7
Kuujjuaq	6	1	9	1	6	1
Kuujjuarapik	11	8	7	1	12	9
Puvirnituq	2	7	4	1	2	7
Quaqtaq	10	3	2	1	10	3
Salluit	7	8	8	2	7	8
Tasiujaq	4	2	3	1	4	2
Umiujaq	13	4	7	1	13	4

Module 1: Occupational health and safety
Module 2: Concepts in fire suppression
Module 3: Self-contained breathing apparatus
Module 4: Concepts related to buildings
Module 5: Fire fighting equipment
Module 7: Ventilation techniques

The table on the preceding page shows the number of volunteer fire fighters per community who have received training. It should be noted that due to fire fighter turnover, not all of the fire fighters identified in the table are still active members of their local fire departments. In addition, pursuant to a grandfather clause in Québec fire safety training regulations, roughly 10% of the fire fighters identified in the *Available human resources* table (preceding page) are not required to follow new training as long as they are able to demonstrate that they can perform the required qualifications for rural volunteer fire fighters.

With the exception of Ivujivik, Umiujaq, Tasiujaq and Kuujjuarapik, at least one fire fighter per Northern village has received training from the module entitled Emergency Procedures in Various Fire Situations.

3.5.3 Physical Resources

Fire Halls

Over almost thirty years, only a few Northern villages have been able to put together the financial resources necessary to construct local fire halls. In half of the region's villages, more cost-efficient alternatives have instead been employed. These alternatives involve the conversion and major renovation of unused, abandoned (and in a few cases previously condemned) buildings to store fire fighting vehicles and equipment. In a couple of Northern villages, fire equipment and vehicles are stored in municipal mechanical repair garages.

In 1999, with the commitment of $2.9 million by the Québec government for the purpose of upgrading the region's fire fighting capacities, the Northern villages of Tasiujaq, Aupaluk, Ivujivik, Akulivik and Umiujaq were enabled to construct fire halls. With the same funding, the makeshift facilities in Nunavik's other communities were also upgraded. Then in 2001, circumstances and ingenuity in Kangiqsualujjuaq and Salluit permitted these Northern villages to construct new facilities. It may be noted that in the seven communities that recently acquired dedicated fire halls, all lacked this basic infrastructure as late as 1999.

Table 8. Fire halls

Village	Designated fire hall	No. of bays	Equipment storage area	Age of structure (years)
Akulivik	X	1	X	7
Aupaluk	X	1	X	7
Inukjuak	X	1	X	+25
Ivujivik	X	1	X	7
Kangiqsujuaq	X	1	X	+25
Kangiqsualujjuaq	X	2	X	5
Kangirsuk	X	2	X	+25
Kuujjuaq		3	X	+25
Kuujjuarapik	X	2	X	+10
Puvirnituq	X	1	X	+25
Quaqtaq		1	X	+25
Salluit	X	2	X	5
Tasiujaq	X	1	X	7
Umiujaq	X	1	X	7

Vehicles

Currently in Nunavik, three types of vehicles are used to fight fires depending on the village: traditional water-type fire trucks (pumpers), vehicles equipped with compressed air foam (CAF) systems, and finally traditional water-type fire trucks retrofitted with CAF systems. It should also be noted that, over the last few years, all new water delivery trucks purchased by the Northern villages are permanently equipped with fire hoses and nozzles to be used in emergencies. In fact, Underwriters' Laboratories of Canada (ULC) testing performed in July 2007 rated the pumping capacity of the new water delivery trucks to be more than 6900 L/min. It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

Table 9. Fire fighting vehicles

Village	Pumper	CAFS truck	CAFS-pumper hybrid	Water trucks	Light-duty trucks
Akulivik		X		2	
Aupaluk		X		2	
Inukjuak	X			3	
Ivujivik		X		2	
Kangiqsujuaq		X		2	
Kangiqsualujjuaq	X			2	
Kangirsuk	X			2	X
Kuujjuaq		X	X	9	X
Kuujjuarapik	X			1	X
Puvirnituq	X			3	
Quaqtaq		X		2	
Salluit	X			3	
Tasiujaq		X		2	
Umiujaq		X		2	

Between 1978 and 1999, the fire fighting vehicle resources of Nunavik's 14 Northern villages were developed independently. During this period of extensive development of all basic municipal services, seven Northern villages opted for stopgap solutions to transport fire-fighting equipment, including portable pumps. Six Northern villages succeeded in purchasing traditional water-type fire fighting vehicles although, in order to stretch limited financial resources, second-hand vehicles were acquired. And finally, the Northern Village of Kangirsuk with no assistance from the KRG raised the funding necessary through an issuance of bonds to purchase a new vehicle.

It should also be noted that, because all of these trucks have been in service for a good many years, some of the $2.9 million in Québec-government funding made available in 1999 was used to pay for overhauls. Despite this spending, the vehicles in Kuujjuarapik, Puvirnituq, Inukjuak and Kangiqsualujjuaq need to be replaced.

Unlike other municipalities in Québec, Nunavik's Northern villages (with the exception of Kuujjuarapik) do not possess underground waterworks, which is to say fixed aqueduct and fire hydrant infrastructure. The water supply for fighting fires is ensured by drinking water distribution trucks. Currently, with the exception of Kuujjuarapik which has waterworks, each Northern village possesses a sufficient number of drinking water distribution trucks to meet the regular water needs of its population plus one spare vehicle. This means that even in the smallest communities there are at least two drinking water distribution trucks are available for emergency fire fighting purposes. In the region's larger communities, the number of available trucks can be as high as nine. Furthermore, due to the region's harsh winter climate, every community is required to have in-door, heated parking areas where these vehicles can be stored with full tanks, every night and on weekends. This ensures that the drinking water distribution trucks are always available for fire emergencies.

As an alternative to the traditional water-type fire trucks described above, Nunavik's communities are progressively acquiring vehicles equipped with CAF systems. The use of these vehicles makes good sense in the Northern villages because CAF systems require a smaller supply of water than traditional water-type fire trucks. With a portion of the Québec-government funding made available in 1999, seven CAF-system trucks were purchased for the following communities: Tasiujaq, Aupaluk, Ivujivik, Akulivik, Umiujaq, Kangiqsujuaq and Quaqtaq. Notwithstanding, CAF-system technology is not yet recognized under current standards, which includes the standards set by the National Fire Protection Association (NFPA), the ULC and the MSP orientations regarding fire safety. As well, the traditional water pumps currently installed on CAF-system trucks are unable to generate water flow of 1500 litres per minute.

Table 10. Fire fighting vehicles, characteristics

Village	Vehicle type	Year	Water capcity (L)	Pumping capacity (L/min.)	ULC certification	Maintenance program	Annual testing
Akulivik	CAFS	2000	1,350	568		no	no
Aupaluk	CAFS	2000	1,350	568		no	no
Inukjuak	Pumper	1987	2,500	2843	2000	no	no
Ivujivik	CAFS	2000	1,350	568		no	no
Kangiqsujuaq	CAFS	2000	1,350	568		no	no
Kangiqsualujjuaq	Pumper	1981	2,500	2843	2000	no	no
Kangirsuk	Pumper	1996	4,500	2843	2000	no	no
Kuujjuaq	Snuffer	2000	2,500	1137		no	no
	Hybrid	1981	2,500	2843	2000	no	no
Kuujjuarapik	Pumper	1987	2,500	2843	2000	no	no
Puvirnituq	Pumper	1987	2,500	2843	2000	no	no
Quaqtaq	CAFS	2000	1,350	568		no	no
Salluit	Pumper	1991	4,500	3780	2000	no	no
Tasiujaq	CAFS	2000	1,350	568		no	no
Umiujaq	CAFS	2000	1,350	568		no	no

Equipment

As explained in the preceding pages, between 1999 and 2001, steps were taken by the KRG and the Northern villages to improve certain physical resources available to local fire departments. After vehicle and fire hall needs as well as ULC certification had been dealt with, the remaining funds available from the original $2.9 million were used to ensure that all local fire departments possessed certain standard basic personal fire-fighter equipment. At that time, re-conditioned self-contained breathing apparatus, spare air tanks and some bunker suits (compliant with standards at that time) were acquired for the fire departments in all the Northern villages. All this equipment is however now outdated. For example, current self-contained breathing apparatus are not equipped with man-down alarms and tanks are nearing the end of their recommended service life. For their part, some bunker suits used by Nunavik fire departments are more than 10 years old and becoming worn out. There are currently no regional or local inspection and maintenance programs for self-contained breathing apparatus or air tanks. Instead repairs are carried out by the Northern villages on an as-needed basis.

Table 11. Personal protection equipment

Village	Breathing apparatus	Spare air tanks	Maintenance program	Man-down alarms	Bunker suits
Akulivik	4	8			7
Aupaluk	4	8			9
Inukjuak	4	8			8
Ivujivik	4	7		4	12
Kangiqsujuaq	4	8		2	14
Kangiqsualujjuaq	4	7			10
Kangirsuk	4	7			13
Kuujjuaq	12	26		12	24
Kuujjuarapik	6	8		6	18
Puvirnituq	4	5			12
Quaqtaq	4	8			12
Salluit	6	18		6	12
Tasiujaq	4	8			10
Umiujaq	4	8			12

Between 1999 and 2001, steps were also taken by the KRG and the Northern villages to ensure that all local fire departments possessed certain other standard fire-fighting equipment. The Rabbit P-509 portable pumps indicated in the following table all have a pumping capacity of 2200 litres per minute. It should however be noted that, under current initial response strategies in the Northern villages, these pumps are not included in initial fire fighting strategies; they could however be used when all other fire fighting systems fail. The portable reservoirs can, for their part, hold 4500 litres of water. There are currently no regional or local inspection and maintenance programs for portable pumps. Instead repairs are carried out by the Northern villages on an as-needed basis.

Table 12. Other fire fighting equipment

Village	Portable pumps	Portable reservoirs	Maintenance program	Ladders and hoses	Axes and other tools
Akulivik		1		X	X
Aupaluk		1		X	X
Inukjuak	1	1		X	X
Ivujivik		1		X	X
Kangiqsujuaq	1	1		X	X
Kangiqsualujjuaq	1	1		X	X
Kangirsuk	1	1		X	X
Kuujjuaq	1	1		X	X
Kuujjuarapik		1		X	X
Puvirnituq		1		X	X
Quaqtaq		1		X	X
Salluit	1	1		X	X
Tasiujaq		1		X	X
Umiujaq		1		X	X

A complete list of the fire fighting equipment available in each Northern village appears in Appendix 3.

3.5.4 Water Resources

Unlike other municipalities in Québec, most of the Northern villages of Nunavik sit on permafrost or discontinuous permafrost. Not only does this reality impact on the construction of dwellings and other buildings, it impacts on the method used to deliver water both for domestic consumption purposes as well as for the fighting of fires.

Waterworks and Fire Hydrants

Except for the Northern Village of Kuujjuarapik where an underground waterworks (which is to say fixed aqueduct and fire hydrant infrastructure) were constructed in 2006, Nunavik communities do not possess typical water resources for fighting fires.

Table 13. Waterworks and fire hydrants

Village	Hydrants	Hydrants (1500 L/min)	Reserve of 30,000 L	Territorial coverage (%)	NFPA certification
Akulivik					
Aupaluk					
Inukjuak					
Ivujivik					
Kangiqsujuaq					
Kangiqsualujjuaq					
Kangirsuk					
Kuujjuaq					
Kuujjuarapik	40	40	n/a	99	
Puvirnituq					
Quaqtaq					
Salluit					
Tasiujaq					
Umiujaq					

In 2006, construction work on an underground waterworks was completed in the Northern Village of Kuujjuarapik. This community now possesses continuous water supply (24 hours a day, seven days a week) that exceeds the minimum NFPA-recommended water supply capacity of 1500 litres per minute. Specifically, the waterworks comprises four regular pumps each with a capacity of 565 litres of water per minute, as well as an emergency pump with a capacity of 2270 litres per minute. The waterworks includes 40 fire hydrants strategically located throughout the Northern village that offer 100% coverage within the urban zone.

Alternative Water Sources

As most Northern villages sit on permafrost or discontinuous permafrost, the method for delivering water locally, both for domestic consumption purposes as well as for the fighting of fires, involves two systems: a water pumping system and a delivery truck system. In all but one Northern village therefore, water delivery during emergencies is effected using these two systems. Specifically, at least three water delivery trucks must be available to guarantee an adequate supply of water at the scene of a fire according to the following scenario: one truck feeding pumps at the scene of the fire, one truck

Table 14. Alternative water sources - system

Village	Reservoir (L)	Pumps	Discharge rate (L/m)
Akulivik	80,000	2	1,200
Aupaluk	4,413,700	2	1,200
Inukjuak	240,000	2	1,200
Ivujivik	210,000	2	1,800
Kangiqsujuaq	336,500	2	1,800
Kangiqsualujjuaq	100,000	2	1,200
Kangirsuk	336,500	2	1,800
Kuujjuaq	14,000	4	1,200
Kuujjuarapik	--	--	--
Puvirnituq	240,000	2	1,200
Quaqtaq	210,000	2	1,800
Salluit	22,700	2	1,200
Tasiujaq	150,000	2	1,800
Umiujaq	30,000	3	1,200

transiting between the fire and the community's

water distribution station, and one truck refilling at the water distribution station.

According to this scenario and given the very compact size of each of Nunavik's 14 villages, it is possible to guarantee an adequate supply of water for fire fighting purposes throughout 100% of the territories of the following municipalities: Inukjuak, Kangiqsujuaq, Kangiqsualujjuaq, Kangirsuk, Kuujjuaq, Puvirnituq, Quaqtaq and Salluit. In communities where only two water delivery trucks are available extra care must be taken to ensure the delivery of an adequate supply water. There is the potential for reduced water supply in exceptional circumstances such as extreme weather conditions. It should also be noted that all these same villages possess vehicles with CAF systems and that CAF systems require a much smaller supply of water than traditional water-type fire trucks.

Table 15. Alternative water sources - trucks

Village	Year (or number)	Tank capacity	Pumping capacity (note 1)	ULC certification (note 2)
Akulivik	2008	13,600	5,850	
	1999	6,800	5,850	
Aupaluk	2008	6,800	5,850	
	2000	6,800	5,850	
Inukjuak	2006	13,600	5,850	
	2000	13,600	5,850	
	2008	13,600	5,850	
Ivujivik	2006	6,800	5,850	
	2004	6,800	5,850	
Kangiqsujuaq	2001	13,600	5,850	
	1998	6,800	5,850	
Kangiqsualujjuaq	2006	13,600	5,850	
	2004	6,800	5,850	
Kangirsuk	2006	13,600	5,850	
	2000	6,800	5,850	
Kuujjuaq	(5)	13,600	5,850	
	(4)	6,800	5,850	
Kuujjuarapik	2000	6,800	5,850	
Puvirnituq	2004	13,600	5,850	
	2006	13,600	5,850	
	1996	6,800	5,850	
Quaqtaq	2004	13,600	5,850	
	1994	6,800	5,850	
Salluit	2006	6,800	5,850	
	2001	6,800	5,850	
	2000	6,800	5,850	
Tasiujaq	2008	13,600	5,850	
	2000	6,800	5,850	
Umiujaq	2006	13,600	5,850	
	--	--	5,850	

Table 15, note 1: All water delivery trucks are equipped with a pump that provides a maximum flow of 5,800 L/min. Each water delivery truck has four outlets; however they are not equipped with water distribution manifolds like fire fighting vehicles.

Table 15, note 2: All these trucks were delivered according to manufacturer's specifications for the purpose of delivering water. The Northern villages do carry out regular road, braking and acceleration testing on these vehicles.

It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

Winter Conditions

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 in many parts of the region. To ensure the reliable delivery of drinking water as well as for fire fighting purposes, each Northern village has procedures in place to ensure that its complete water distribution system remains free of freezing. These systems include heated pumping stations and water supply lines as well as heated parking areas for water distribution trucks.

3.5.5 Alarm and Mobilization Systems

In the early 1990s, the Québec government, the KRG and the Northern villages entered into a cost-sharing arrangement that allowed the fire departments in each Nunavik community to introduce a standard emergency alarm and mobilization system. The same type of system was installed in all 14 Northern villages. Prior to that work, emergency communications systems had differed from community to community and included sirens, church bells and announcements on the local FM radio station.

In 2002, upgrading was applied to the standard emergency alarm and mobilization system in place in all Nunavik communities and, in particular, simplified emergency telephone numbers were introduced:

- Police 819- (three-digit local prefix) -9111;
- Fire 819- (three-digit local prefix) -9000;
- Medical 819- (three-digit local prefix) -9090.

The standard system currently in place in all Nunavik communities allows local fire departments to manage emergency alarms and mobilization in much the same manner as in municipalities in the southern regions of Québec. Specifically, emergency calls are directed to a single telephone number and answered by a designated member of the local fire department who is responsible for mobilizing the community's volunteer fire fighters (via walkie-talkies and pagers intended for this purpose). Subsequently, fire fighters get themselves quickly to the fire hall to don their personal fire fighting equipment, and proceed with the fire fighting vehicle to the scene of the fire.

In each Northern village, it is intended that the fire chief and each volunteer fire fighter carry a device that allows them to be mobilized in case of emergency. In reality, the varying sizes of Nunavik's communities (with populations between 175 and 2300) as well as other circumstances have impacted on the efficiency of this equipment. As well, in each Northern village the municipal employee responsible for dispatching water delivery trucks is assigned a device that allows him to be notified whenever the fire department is mobilized in case of emergency, day and night and on weekends.

Table 16. Alarm and mobilization systems

Village	Local telephone number	Mobilization device	Link with water trucks	Link with KRPF
	Alarm	Mobilization		
Akulivik	X	X	X	X
Aupaluk	X	X	X	X
Inukjuak	X	X	X	X
Ivujivik	X	X	X	X
Kangiqsujuaq	X	X	X	X
Kangiqsualujjuaq	X	X	X	X
Kangirsuk	X	X	X	X
Kuujjuaq	X	X	X	X
Kuujjuarapik	X	X	X	X
Puvirnituq	X	X	X	X
Quaqtaq	X	X	X	X
Salluit	X	X	X	X
Tasiujaq	X	X	X	X
Umiujaq	X	X	X	X

In each village, the fire chief and all fire firefighters are assigned an electronic device that allows each to be mobilized in case of emergency.

It should also be noted that in the Northern villages where pre-hospital services have been implemented (except for Kuujjuaq and Puvirnituq), these services and local fire departments share the same emergency radio communication frequency. In Kuujjuaq and Puvirnituq, the pre-hospital services and the local fire departments operate on separate radio frequencies, although each is capable of accessing the other service's frequency when necessary. In all communities, the Kativik Regional Police Force (KRPF) also has access to the pre-hospital and local fire department frequency, or frequencies. However, even while different public safety organizations have the capability to communicate (and in fact use this

shared communication channel in emergencies), it should be noted that no inter-organization agreements exist for this purpose. Telephones are reserved as a back-up means of communications.

3.5.6 Strike Force Assessment

The main resources of a strike force are the personnel assigned to carry out the fire fighting operation, the equipment needed to fight the fire, and the supply of water needed to extinguish it. Response time is the interval that elapses between the sounding of a fire department alarm and the arrival of a complete strike force at the scene of the fire. It is widely recognized that a response time of less than ten minutes contributes to a more effective intervention.

Low and medium risks

Each Northern village possesses a fire department that can have volunteer fire fighters, fire fighting equipment and water trucks at the scene of a fire in less than 10 minutes. The small size of the region's communities contributes positively to these effective response times. Specifically, in all Nunavik's communities all residential, commercial and public infrastructure and buildings are erected in a small area, generally varying in size from 4 km^2 to 8 km^2. Moreover, in this document, this area has been designated as *urban zone*. In all Nunavik communities, emergencies that necessitate fire department responses occur 99.9% of the time in the urban zone.

It should furthermore be noted that at certain times of the day or seasons of the year certain municipal fire departments may not be able to deploy a full strike force within 15 minutes. This kind of situation can arise due to small local labour pools or when fire fighters are unavailable due to professional but especially subsistence harvesting commitments.

This table presents generally accepted minimal resources for responding to low risks within a community's urban zone. This data is also produced in the *Fire Safety Policies of the Minister of Public Security* (2001).

Minimum low-risk strike force

Response time	**Response resources** 10 fire fighters *(exlcuding human resources assigned to water delivery or booster pumping)* 1500 L/minute of water *(for at least 30 minutes in the urban zone)* 1 pumper truck
Under 5 minutes	Favours an effective intervention
5 to 10 minutes	Favours an effective intervention
10 to 15 minutes	Compatible with an effective intervention
Over 15 minutes	Detrimental to an effective intervention

High and extremely high risks

Throughout Québec and Northern America, fire departments apply relatively standard procedures for low risks. Major disparities however exist with respect to the strike forces organized to respond to medium, high and extremely high risks. These disparities are the result of differences in risk classification systems as well as the procedures applied to manage these higher levels of risk. Consequently, it is difficult to identify standards to be applied in such circumstances.

Based on the necessary improvements described in Section 6 of this document, the Northern villages must nonetheless seek to deploy an optimal strike force for medium, high and extremely high risks. Optimal of course implies consideration of all the available resources in each municipality and the strike force identified in the preceding subsection.

Although the Nunavik FSCP does define a strike force and response time for medium, high and extremely high risks, normally an effort should be made to send more resources to a fire if it occurs in a higher-risk building since the duties to be carried would be both greater in number and more complex. Difficulties associated with

different categories of emergency might also require specific expertise or equipment, such as an airport emergency for example.

Concretely, the MSP objective 3 obliges the Northern villages to indicate for medium, high and extremely high risks the minimal strike force that can be deployed and the attendant response time under normal circumstances.

In addition, in the spirit of the MSP objective 2, the identified strike force must be optimized, which is to say set in accordance with all the available resources in the region.

Northern Village of Akulivik – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	5	Less than 10 minutes	n/a
Availability: weekday	5		
Availability: weeknight	3		
Availability: weekend	3		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 2 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Aupaluk– Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	9	Less than 10 minutes	n/a
Availability: weekday	9		
Availability: weeknight	3		
Availability: weekend	3		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 2 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Inukjuak – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	13	Less than 10 minutes	n/a
Availability: weekday	13		
Availability: weeknight	12		
Availability: weekend	12		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - pumper, ULC in 2000 - tank, 2500 L - pumping, 2843 L/min Water trucks - 4 available - tank, 6800 L - pumping, 5850 L/min - (note 3) (note 4)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

4 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Ivujivik – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	12	Less than 10 minutes	n/a
Availability: weekday	12		
Availability: weeknight	7		
Availability: weekend	7		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 2 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Kangiqsujuaq – Optimized strike force for all categories of risk

<table>
<tr><td colspan="2" rowspan="2">Initial Response:
Human and Vehicle Resources</td><td colspan="2">Response Time</td></tr>
<tr><td>Inside urban zone</td><td>Outside urban zone</td></tr>
<tr><td>Fire fighters and officer (note 1)</td><td>10</td><td rowspan="5">Less than 10 minutes</td><td rowspan="5">n/a</td></tr>
<tr><td>Availability: weekday</td><td>10</td></tr>
<tr><td>Availability: weeknight</td><td>10</td></tr>
<tr><td>Availability: weekend</td><td>10</td></tr>
<tr><td>Strike force size (note 2)</td><td>n/a</td></tr>
<tr><td>Vehicles</td><td colspan="3">Fire vehicle - CAF-system
- tank, 1350 L
- pumping, 598 L/min
- (note 3)
Water trucks - 3 available
- tank, 6800 L
- pumping, 5850 L/min
- (note 4) (note 5)</td></tr>
</table>

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Because no reports exist for Kangiqsujuaq between 2000 and 2006, it is impossible to indicate the size of the strike force that arrived at the scene of each occurrence within 10 minutes. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Kangiqsualujjuaq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	7	Less than 10 minutes	n/a
Availability: weekday	7		
Availability: weeknight	5		
Availability: weekend	5		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - pumper, ULC in 2000 - tank, 2500 L - pumping, 2843 L/min Water trucks - 3 available - tank, 6800 L - pumping, 5850 L/min - (note 3) (note 4)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

4 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Kangirsuk – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	10	Less than 10 minutes	n/a
Availability: weekday	10		
Availability: weeknight	8		
Availability: weekend	8		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - pumper, ULC in 2000 - tank, 2500 L - pumping, 2843 L/min Water trucks - 3 available - tank, 6800 L - pumping, 5850 L/min - (note 3) (note 4)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

4 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Kuujjuaq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	16	Less than 10 minutes	n/a
Availability: weekday	16		
Availability: weeknight	14		
Availability: weekend	14		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Fire vehicle - pumper, ULC in 2000 - tank, 2500 L - pumping, 2843 L/min Water trucks - 9 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Kuujjuarapik – Optimized strike force for all categories of risk

<table>
<tr><td colspan="2" rowspan="2">Initial Response:
Human and Vehicle Resources</td><td colspan="2">Response Time</td></tr>
<tr><td>Inside urban zone</td><td>Outside urban zone</td></tr>
<tr><td>Fire fighters and officer (note 1)</td><td>13</td><td rowspan="5">Less than 10 minutes</td><td rowspan="5">n/a</td></tr>
<tr><td>Availability: weekday</td><td>13</td></tr>
<tr><td>Availability: weeknight</td><td>10</td></tr>
<tr><td>Availability: weekend</td><td>10</td></tr>
<tr><td>Strike force size (note 2)</td><td>n/a</td></tr>
<tr><td>Vehicles</td><td colspan="3">Fire vehicle - pumper, ULC in 2000
- tank, 2500 L
- pumping, 2843 L/min
Aqueduct - more than 1500 L/min
- 99% coverage, urban zone
Water trucks - 1 available
- tank, 6800 L
- pumping, 5850 L/min
- (note 3)</td></tr>
</table>

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – There is the potential for reduced water supply in exceptional circumstances (such as extreme weather conditions) in the 1% of the territory not serviced by permanent waterworks.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Puvirnituq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	5	Less than 10 minutes	n/a
Availability: weekday	4		
Availability: weeknight	5		
Availability: weekend	5		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - pumper, ULC in 2000 - tank, 2500 L - pumping, 2843 L/min Water trucks - 4 available - tank, 6800 L - pumping, 5850 L/min - (note 3) (note 4)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

4 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Quaqtaq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	9	Less than 10 minutes	n/a
Availability: weekday	6		
Availability: weeknight	9		
Availability: weekend	9		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 3 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Salluit – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	10	Less than 10 minutes	n/a
Availability: weekday	10		
Availability: weeknight	10		
Availability: weekend	10		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - pumper, ULC in 2000 - tank, 4500 L - pumping, 3780 L/min Water trucks - 4 available - tank, 6800 L - pumping, 5850 L/min - (note 3) (note 4)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

4 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Tasiujaq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	8	Less than 10 minutes	n/a
Availability: weekday	8		
Availability: weeknight	4		
Availability: weekend	4		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 2 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 – Because no reports exist for Tasiujaq between 2000 and 2006, it is impossible to indicate the size of the strike force that arrived at the scene of each occurrence within 10 minutes. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 – The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Northern Village of Umiujaq – Optimized strike force for all categories of risk

Initial Response: Human and Vehicle Resources		**Response Time**	
		Inside urban zone	Outside urban zone
Fire fighters and officer (note 1)	13	Less than 10 minutes	n/a
Availability: weekday	10		
Availability: weeknight	13		
Availability: weekend	13		
Strike force size (note 2)	n/a		
Vehicles	Fire vehicle - CAF-system - tank, 1350 L - pumping, 598 L/min - (note 3) Water trucks - 2 available - tank, 6800 L - pumping, 5850 L/min - (note 4) (note 5)		

Notes:

1 – Data on fire department human resources (specifically the total number of fire fighters and officers as well as their availability) were updated in the summer of 2007. An explanation for low weeknight and weekend availability is provided in Section 2.3 (Social and Economic Profile, Economy).

2 Based on reports prepared between 2000 and 2006, a strike force arrived at the scene of each occurrence within 10 minutes; however, the size of that force was not accurately recorded. During the first year of the Nunavik FSCP, strike force data will be recorded in order to set a realistic strike force objective for subsequent years.

3 – The fire fighting vehicle does not meet the minimum recommended water pumping capacity of 1500 L/min. Currently, the fire fighting capacity of the CAF-system is not officially recognized.

4 – It is important to note however that, under current initial response strategies in the Northern villages, water delivery trucks simply supply water for fire fighting purposes; they could however be used to fight fires when initial fire fighting systems fail.

5 The water supply capacity meets minimum standards, however in exceptional circumstances such as extreme weather conditions, there is the potential for reduced water supply.

Optimization actions:

- Maintain the current strike force and strive to increase the number of fire fighters (Action I, Section 6).
- Develop and implement the KRG communications guidelines locally (Action J, Section 6).
- Ensure that local volunteer fire fighters receive basic training and that they receive annual refresher training, that is compliant with Québec regulations (Action L, Section 6).
- Develop and implement a vehicle maintenance and testing program for fire fighting vehicles and portable pumps (Action M_1 and M_2, Section 6).
- Review and implement the KRG guidelines to ensure adequate water supply in case of fire (Action K, Section 6).
- Ensure that a complete report is prepared for each response carried out by the local fire department and that each report is forwarded to the KRG (Action B, Section 6).

Section 4 – Fire Background Information

Since the year 2000, data collected from fire reports prepared by the fire departments of the Northern villages have been entered by KRG personnel into the MSP on-line statistics database. Between 2000 and 2006, reports were prepared for 189 separate incidents. It should be noted that these reports were prepared locally by available resources. For this period, the following trends were identified.

With respect to **building usage**, in Nunavik a large majority of building fires were reported to have occurred in residential buildings. This situation is not surprising given the fact that at least 75% of all the buildings in the region's communities, except in Kuujjuaq and Kuujjuarapik, are residential. It must be noted that each loss of a residential building due to fire has a severe negative impact on the local housing situation. Not only is each Northern village suffering from a major housing shortage, given the isolation of these communities speedy repairs and renovations to fire damaged buildings are an impossibility; repairs generally take an entire year.

With respect to **fire causes**, of the 189 reported fires the following results were noted:

- 40% of fires (or 77) were caused by smoking materials (cigarettes, lighters, matches, etc.);
- just over 20% of fires (or 34) were reported to have an undetermined cause;
- 7% of fires (or 14) were reported to be probable arson;
- a small percentage of fires were attributed to human error, mechanical problems and cooking.

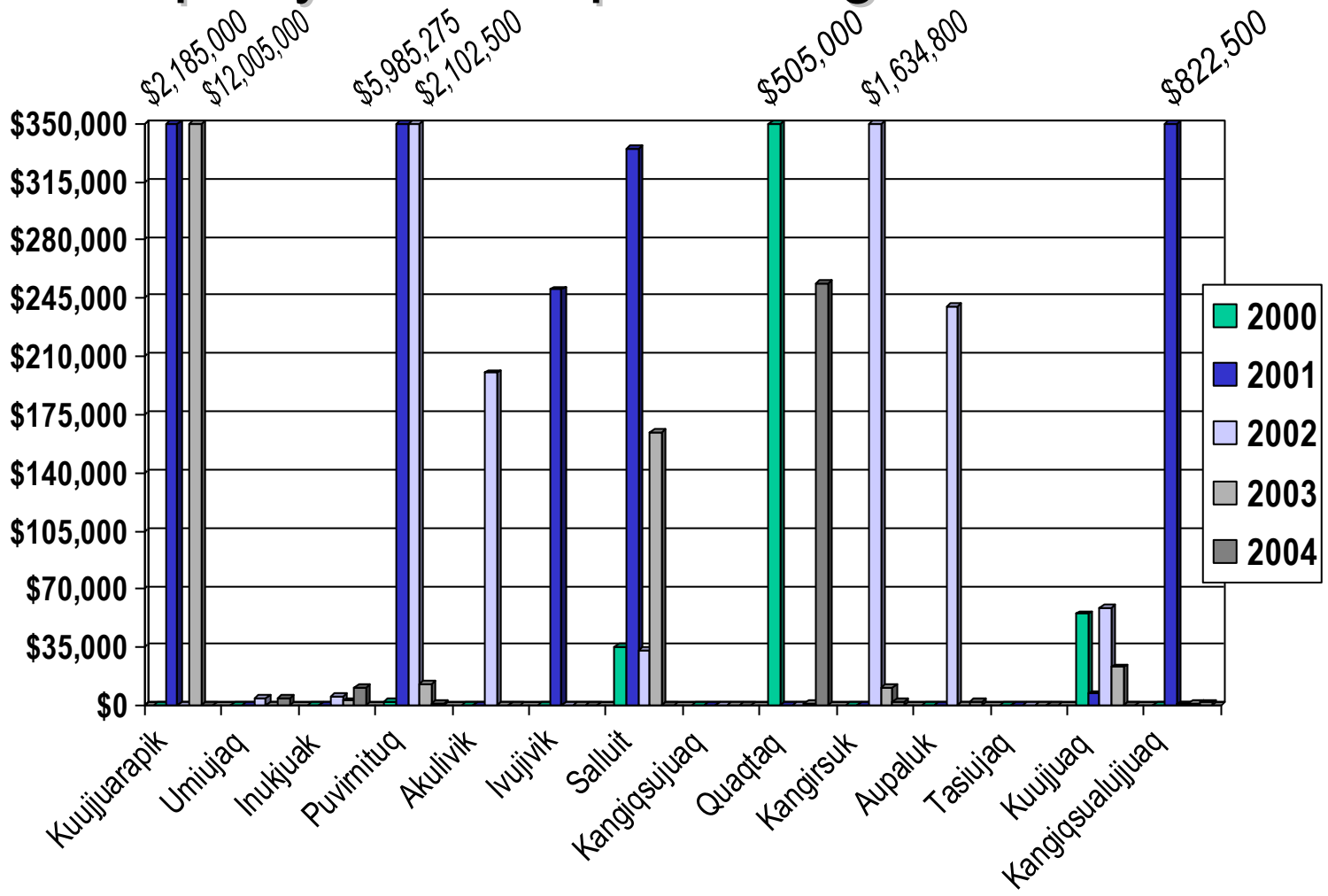
At this point, it is appropriate to mention that only in very recent years has the importance of accurate fire incident reporting in the Northern villages come to be recognized. More work is required to improve the data reported and to enhance local fire cause and circumstance investigations. Certainly, enhanced training in this respect would improve data compilation efforts. It should also be noted that 15% of fire investigations (or 27 occurrences) were turned over the to Kativik Regional Police Force for criminal investigation.

With respect to the **time of fires**, no definite conclusions could be drawn based on available data concerning when fires in the Northern villages occur. Notwithstanding, it was noted that the response times of local fire departments varied little between day and night occurrences. This result is likely attributable to the small size of each of the Northern villages and to the good quality of the communication systems in place.

With respect to **property loss**, certain data were also available for the region's 14 Northern villages between 2000 and 2004. Specifically for the slightly more than 100 fires reported, the total value of property loss was $26,960,704. For this period, the average annual value of property loss in Nunavik was therefore roughly $539 per inhabitant. Between 2003 and 2005, the per capita value of property loss in Québec as a whole was $71. For further comparision purposes, the per capita value of property loss in Québec communities with less than 5000 inhabitants was $136 (*La Sécurité incendie au Québec*, 2007).

It may be noted that while a large majority of buildings in the region are residential, the greatest amount of property loss recorded was for fires in commercial or essential public infrasture. A chart illustrating the value of property loss in each of Nunavik's villages between 2000 through 2004 appears on the following page. In particular, fires that lead to major losses were at: the power plant in Kuujjuarapik (2001); the power plant again and the school in Kuujjuarapik (2003); the co-operative store and the school in Puvirnituq (2001); the municipal garage in Puvirnituq (2002); the power plant in Quaqtaq (2001); the Northern store in Kangirsuk (2002); and the old school in Kangiqsualujjuaq (2001).

Annual Property Losses per Village



Section 5 – Risk Analysis

As explained in the introduction to this document, the *Fire Safety Act* adopted by the Québec government in 2000 requires every regional county municipality and the KRG to carry out a fire safety planning process. "In essence, the work required of these municipal bodies consists in an **analysis of the risks** present in their territory to assist in the development of **prevention** measures that will reduce the probability that a fire will occur (**occurrence reduction**) and in planning the **response** measures that will effectively limit the damage of a fire (**impact reduction**)" (*Fire Safety Policies of the Minister of Public Security*, 2001).

In Nunavik, the analysis of fire-related risks continues to progress. As previously described in this document, Nunavik is a remote region and, in addition, all its communities are isolated from one another. The logistical, cost and time requirements resulting from this situation make it more difficult to effectively conduct an analysis of fire-related risks throughout the region. Notwithstanding, the communities of Nunavik possess a number of characteristics that are the same in Kuujjuarapik, in Kangiqsualujjuaq, and in every community in between. These shared characteristics make it possible to generalize the fire risks present throughout the region.

As a starting point for the analysis of risks in Nunavik, the classification proposed in the *Fire Safety Policies of the Minister of Public Security* (2001) was adopted. This classification is summarized in the table appearing in Subsection 5.3.

5.1 Building Types in Nunavik

Next, the characteristics shared by all of the region's communities were identified. In particular, the variety of building uses in Nunavik is limited. These uses include residential buildings and a number of essential public infrastructure. In fact, as all of Nunavik's communities have been developed at the same time over the last 30 years, many structures in different villages were constructed around the same period with identical construction techniques and similar floor plans.

Take for example residential buildings: between 1981 and 2001 the Société d'habitation du Québec (housing corporation) constructed over 1700 social housing dwelling units in all 14 Northern villages. The buildings constructed range from single-storey detached dwellings to two-storey buildings containing at most six modest dwelling units. All these buildings are very similar in construction and appearance. The exceptions to this type of construction are few and include not more than 50 privately constructed homes, some of the housing operated by major regional employers for their staff, a former school in Kangiqsualujjuaq that has been converted into a multi-unit apartment building, and the student residence at the Nunavimmi Pigiursavik Training Centre in Inukjuak. Residential buildings represent at least 75% of all the buildings in most of Nunavik's communities, with the exception of Kuujjuaq and Kuujjuarapik which are slightly more developed.

In addition, each Nunavik community possesses a certain number of essential public infrastructure. This infrastructure includes:

- a CLSC, plus in some cases a child and youth protection centre, a rehabilitation centre, or a long-term care centre; all these facilities have been designed and fall under the umbrella of the Nunavik Regional Board of Health and Social Services;

- a school, plus in the cases of Kuujjuaq, Salluit, Inukjuak and Kuujjuarapik a second school or vocational training centre; these facilities have been designed and are operated by the Kativik School Board;

- a childcare centre, or two in Kuujjuaq and Inukjuak; these facilities have been designed and are supervised by the KRG;

- a police station that includes a secure custody area; these facilities have been designed and are operated by the Kativik Regional Police Force;
- a landing strip, airport terminal and garage for storing and maintaining heavy equipment; these facilities in all but Kuujjuaq were designed by the Ministère des Transports du Québec and are now operated by the KRG;
- limited office space in a variety of structures but generally for public administration;
- a fuel tank farm and distribution facility operated by Shell Canada in Kuujjuaq, Kangiqsualujjuaq and Quaqtaq and by the Federation of Co-operatives of Northern Québec in the 11 remaining communities of the region;
- a power generating station constructed and operated by Hydro-Québec;
- communications facilities operated by Bell Canada, Telesat Canada and the KRG, among others;
- one general store (or in some communities two stores) that are essential suppliers of food and other basic consumer products; in most cases these stores are operated by the Northern company or the local co-operative and include the annual stocks needed for the community for an entire year;
- one or two hotels that serve as accommodations essentially for business people and government employees while they are travelling in Nunavik.

5.2 Other Risk Factors

Finally, a number of factors were identified for their direct impact on the risk posed by the different types of buildings. These factors are summarized below.

In particular, with respect to **level of occupancy**, residential buildings with no more than two dwelling units are considered low risk areas. Offices and residential buildings with more than two dwellings containing less than ten bedrooms are considered to represent an average risk. Finally, churches, arenas and similar types of meeting buildings are considered to represent an extremely high risk because of the high number of people that might be present for important events.

With respect to the **age, health and other characteristics of users**, schools, childcare centres as well as community and youth centres are considered extremely high risks because of the large number of young people who are most often present. CLSCs and other health and social service facilities are also considered to represent a very high level of risk due to the limited ability of some users to quickly and independently evacuate these facilities. Hotels are considered extremely high risks areas because clients are unfamiliar with their surroundings. Finally, police stations fall into the same extremely high risks category because they possess secure custody areas from which detainees require supervision when exiting.

With respect to the **essential nature of services** delivered in an isolated community, local FM stations as well as other radio and television facilities are considered high risk. For their part, fuel tank farms, power generating plants, water distribution plants, communications facilities, CLSCs as well as landing strips and airport terminals are considered extremely high risks.

Finally, with respect to **environmental impact**, the following facilities are considered to represent a high risk due to the limited presence of dangerous materials: mechanical repair garages (hydrocarbons) and restaurants (propane). As regards facilities where dangerous materials are especially concentrated, they are considered extremely high risks: tank farms and some warehouses.

To show how these considerations have been applied concretely to each Northern village, risk analysis maps are provided in Appendix 4.

5.3 Basic Classification

Classification	Description	Building Type
Low risk	- Very small, well-spaced buildings - Stand alone residential buildings with 1 or 2 apartments, or 1 or 2 storeys	- Sheds, garages - Detached or semi-detached single family homes (with 1 or 2 dwelling units), cottages, mobile homes, rooming houses with fewer than 5 lodgers
Average risk	- Buildings no taller than 3 storeys, having a ground floor area of no more than 600 m^2	- Two to 3-storey attached single family homes - Apartment buildings with 8 dwelling units or fewer, rooming houses with 5 to 9 bedrooms - Group F, division 3 industrial buildings* (workshops, warehouses, sales rooms, etc.)
High risk	- Buildings having a total area of more than 600 m^2 - Four to 6-storey buildings - Buildings in which occupants are able to evacuate in the event of a fire - Buildings without any significant amount of hazardous materials	- Commercial buildings - Office buildings - Apartment buildings with at least 9 dwelling units, rooming houses (10 bedrooms or more), motels - Group F, division 2 industrial buildings (workshops, repair garages, printing shops, service stations, etc.), farm buildings
Extremely high risk	- Buildings taller than 6 storeys, or those presenting the possibility of a massive fire outbreak - Buildings whose occupants are not able to evacuate on their own - Buildings for which occupant evacuation is difficult because of the higher number of occupants - Buildings where hazardous materials might be found - Buildings for which the impact of a fire is likely to affect the daily life of the community	- Office buildings and adjoining buildings in older neighbourhoods - Hospitals, home care centres, supervised homes, detention centres - Shopping centres with more than 45 stores, hotels, schools, childcare centres, churches - Group F, division 1 industrial buildings (hazardous material warehouses, paint factories, chemical factories, flour mills, etc.) - Water treatment plants, harbour facilities, gas infrastructure

* This classification is based on the main uses given in the *National Building Code* (1995).

5.4 Risk Analysis Summary for the Northern Villages

	Level of risk			
	Low	Medium	High	Extremely high
Akulivik	93	9	14	10
Aupaluk	46	3	20	6
Inukjuak	257	9	27	17
Ivujivik	64	3	20	12
Kangiqsujuaq	126	10	11	17
Kangiqsualujjuaq	131	3	22	11
Kangirsuk	98	3	27	12
Kuujjuaq	584	111	68	15
Kuujjuarapik	164	11	24	15
Puvirnituq	327	19	20	9
Quaqtaq	76	8	14	5
Salluit	215	6	29	27
Tasiujaq	64	1	16	4
Umiujaq	90	7	13	7

Note: The results shown in this table provide a clear indication of the number of risks in each risk category in the 14 Northern villages. In addition, the implementation of the low risk as well as medium, high and extremely high risk inspection programs provided for in the Nunavik FSCP with the oversight of new regional preventionist staff will permit these results to be verified and improved.

Section 6 – Optimization of Resources

6.1 MSP Orientations

Two main orientations underlie the current fire safety cover plan process. Set out in the *Fire Safety Policies of the Minister of Public Security*, these main orientations are to:

- reduce human and property losses attributable to fire in all Québec regions;
- increase the efficiency of organizations responsible for fire safety by:
  - optimizing available human, physical, financial and communications resources;
  - improving the qualifications of fire fighters, fire officers, support staff and elected officials;
  - adopting preventive measures;
  - redefining the role of the Québec government.

The successful achievement of the two above-mentioned orientations might also contribute to the realization of two goals, which are to:

- foster conditions to reduce the financial burden of insurance premiums for Québecers;

- foster conditions that will exempt the Northern villages from liability for any damage that may result from municipal intervention during a fire or during an emergency or disaster situation, unless the damage results from their intentional or gross fault [*Fire Safety Act*, Section 47].

Each of the two main MSP orientations include respectively five and three specific objectives. The first five objectives relate to the prevention and intervention aspects of fire safety operations. The latter three objectives relate to fire safety organization. Moreover, each of the two main MSP orientations constitutes a whole, which is to say that even though it may be impossible for a Northern village to completely achieve one of the objectives of a given orientation, efforts directed towards the other related objectives should nonetheless contribute to the successful achievement of the orientation. Subsection 6.3 describes in detail the actions required at the regional and local levels in Nunavik to meet the MSP orientations and specific objectives.

6.2 KRG Recommendations, 2004

Early in the current fire safety planning process, the KRG Council approved 17 recommendations developed by its fire safety steering committee to improve fire safety in the specific context of Nunavik. All 17 recommendations have been incorporated into the actions described in Subsection 6.3 of this document. The recommendations are reproduced concisely below with reference to a precise action.

Recommendation 1: Each Northern village should create a public safety officer position to co-ordinate local fire safety activities with existing resources and to perform new duties arising from the Nunavik FSCP. Refer to Action X_1 in the following subsection.

Recommendation 2: Each Northern village should maintain a fire department consisting of at least ten volunteer fire fighters. Refer to Action I in the following subsection. [The intent of this recommendation was to encourage small communities to develop a minimum strike force of 10 fire fighters.]

Recommendation 3: The KRG and the École nationale des pompiers du Québec (fire fighters academy) should develop a realistic training strategy for volunteer fire fighters in Nunavik. Refer to Action L in the following subsection.

Recommendation 4: Inadequate fire trucks in Kuujjuarapik, Inukjuak, Puvirnituq and Kangiqsualujjuaq should be replaced. Refer to Action M_3 in the following subsection.

Recommendation 5: Local fire fighting vehicles in most other Nunavik communities should be retrofitted to meet applicable minimum water flow standards. Refer to Action M_3 in the following subsection.

Recommendation 6: Continue to work with industry stakeholders to obtain recognition for the compressed air foam systems already installed on fire fighting vehicles in Nunavik. Refer to Action X_2 in the following subsection.

Recommendation 7: An inspection and maintenance program for fire fighting vehicles (mechanics and pumps) should be created and implemented. Refer to Action M_2 in the following subsection.

Recommendation 8: Adequate fire halls should be built in Quaqtaq, Kangiqsujuaq, Inukjuak and Puvirnituq. Refer to Action N_2 in the following subsection.

Recommendation 9: Self-contained breathing apparatus for local fire departments should be upgraded or replaced to meet applicable standards. Refer to Action M_4 in the following subsection.

Recommendation 10: Each local fire department should acquire adequate communications equipment to ensure compliance with applicable standards. Refer to Action J in the following subsection.

Recommendation 11: Adequate computer equipment and Internet access should be acquired for the fire departments in all of Nunavik's communities. Refer to Action N_3 in the following subsection.

Recommendation 12: Each Northern village should adopt a by-law that will allow fire protection measures to be enforced. Refer to Action E in the following subsection.

Recommendation 13: All new residential buildings should be equipped with sprinkler systems in compliance with the NFPA standard 13D. Refer to Action R in the following subsection.

Recommendation 14: The Ministère de la Justice du Québec should establish an efficient mechanism for the enforcement of municipal fire prevention by-laws. In 2006, Nunavik's two itinerant courts (one for the communities of the Ungava coast and the other for the communities of the Hudson coast) began to process municipal by-law offences. This new activity marked an important improvement for by-law enforcement in Nunavik.

Recommendation 15: The KRG and the Northern villages should be provided with the equipment, infrastructure and training necessary to respond to airport emergencies at all Nunavik airports, in accordance with Transport Canada regulations. Refer to Action Q_1 in the following subsection.

Recommendation 16: Hydro-Québec, the KRG and the Northern villages should formalize and maintain emergency response procedures at the Hydro-Québec facilities in all Nunavik communities. Refer to Action Q_2 in the following subsection.

Recommendation 17: The region's fuel suppliers should provide the KRG and the Northern villages with the equipment and training necessary to respond to emergencies at all Nunavik fuel tank farms. Refer to Action Q_3 in the following subsection.

6.3 Detailed Descriptions of Actions

This subsection provides a detailed description of the actions required at the regional and local levels in Nunavik to meet the MSP orientations and specific objectives described in Subsection 6.1 of this document.

Action A_1– Under the Nunavik FSCP almost all the identified municipal actions involve a regional co-ordination component. Moreover, the KRG is prepared to accept responsibility for this co-ordination, including the management of related budgets. This co-ordination will also include making available qualified human resources, as well as delivering administrative support and technical assistance. Two benefits of a regional co-ordination approach will be standard equipment, programs and planning in all 14 Northern villages and the pooling of human and financial resources.

Action A_2– In addition to its general co-ordination role, the KRG will need to create regional support positions to ensure specifically the implementation of the Nunavik FSCP and generally relations with the Northern villages. The first regional support position would be assigned the specific task of overseeing the management as well as contributing to the development of the many programs and activities identified in the Nunavik FSCP. Refer to the implementation plan appearing in Section 7 for the specific duties of the regional fire safety co-ordinator. The requirements of this position would include professional managerial and fire safety training and experience. The employment and travel costs connected with this position are estimated at $150,000 annually.

It must be stated clearly here that the regional support positions contemplated under actions A_2, A_3 and A_4 (and the annual funding required for each position) take into account the specific characteristics of Nunavik and their impact on employment costs. Specifically, relocation, housing, annual-leave trip and other employee costs are significantly higher in Nunavik compared with elsewhere in Québec. As well, to complete the duties assigned to the regional support positions, it is inevitable that each of the employees will be required to travel frequently throughout the Northern villages. Travel for this purpose is only possible by air and also generates significant additional costs.

Action A_3 – The second regional support component would be assigned the specific task of spear-heading the development of the various regional and local prevention programs and activities identified in the Nunavik FSCP. Refer to the implementation plan appearing in Section 7 for the specific duties of regional preventionist staff. The requirements of this staff would include preventionist training, certification and experience. The employment and travel costs connected with this preventionist component are estimated at $150,000 annually.

In the first and second year of the implementation of the Nunavik FSCP, it is expected that a consultant will be hired to carry out the identified duties. Also, in the first and second year of the Nunavik FSCP, two local workers will be hired and trained as preventionists so that by the third year of the Nunavik FSCP these local workers will be qualified to carry out the identified duties.

Action A_4 – The third regional support component would be assigned the specific task of co-ordinating and delivering all the fire fighter and officer training actions referred to in the implementation plan appearing in Section 7. The requirements of regional training staff would include instructor certification from the École nationale des pompiers du Québec (fire fighters academy). The employment and travel costs connected with this training component are estimated at $150,000 annually.

In the first and second year of the implementation of the Nunavik FSCP, it is expected that a consultant will be hired to carry out the identified duties. Also, in the first and second year of the Nunavik FSCP, two local workers will be hired and trained as instructors (in co-operation with the École nationale des pompiers du Québec and a New Brunswick college) so that by the third year of the Nunavik FSCP these local workers will be qualified to carry out the identified duties.

Action A_5 – A regional steering committee composed of municipal elected and fire safety representatives from various communities as well as regional representatives will be created to permanently guide the fire prevention priorities and actions of the KRG and the Northern villages. Specifically, the role of the steering committee will be to ensure the smooth development of fire safety resources in Nunavik through the implementation of the Nunavik FSCP by setting objectives and reviewing accomplishments. The regional steering committee will meet at least once annually and a $15,000 budget will be reserved for this purpose. It should be stated that, although this amount may appear high, it takes into consideration the high cost of travel, accommodations and meals in Nunavik. As well, another $20,000 will be

directed annually to regionally co-ordinated prevention activities.

MSP objective 1 - 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.

Action B – Local fire departments will continue to complete fire response reports and forward these to the KRG. The regional fire safety co-ordinator will develop a basic assessment and analysis program and ensure regular reporting to the regional steering committee and to the Northern villages. The MSP will be required to continue providing the necessary technical support.

Action C – Each Northern village will be responsible for conducting basic fire cause and circumstance investigations. For this purpose, the regional fire safety co-ordinator will provide in the first year of the Nunavik FSCP investigation and reporting training to local fire officers. As well, the regional fire safety co-ordinator will be responsible for conducting advanced fire cause and circumstance investigations when required by the Northern villages. The costs incurred in the delivery of this service (for example, travel costs) have been included in the regional fire safety co-ordinator position described at A_2.

Action D – Section 35 of the *Fire Safety Act* stipulates that "[e]very local or regional authority […] in charge of the implementation of measures provided for in a fire safety cover plan must, within three months after the end of their fiscal year, adopt, by resolution, and transmit to the Minister [of Public Security] a report of their fire safety activities for the preceding fiscal year and their fire safety projects for the coming year […]." Under the Nunavik FSCP, the Northern villages will report to the KRG on their communities local actions for the year, and the regional fire safety co-ordinator will compile these and regional actions to produce the required annual report for the region. The report will be prepared according to MSP-identified performance indicators.

Action E – The aim of this action is to foster a standard fire department by-law and a standard fire safety by-law in all the Northern villages in Nunavik. The former by-law will provide for the official creation of a local fire department in accordance with section 36 of the *Fire Safety Act*. The latter by-law will set out the fire prevention responsibilities of the local fire department, including smoke detector use and inspections based on the *National Building Code of Canada* and the *National Fire Code*.

Action F – During the first year under the Nunavik FSCP, the qualified regional preventionist staff in co-operation with local fire departments will develop guidelines for a smoke detector and low-risk inspection program. The guidelines will establish an inspection checklist for smoke detectors (presence and functionality), escape routes and fire extinguishers, as well as proposing low-risk inspection training for local fire fighters to be delivered by the qualified regional preventionist staff. The guidelines will also provide for all residential dwellings to be inspected over the course of the Nunavik FSCP. Beginning in the second year of the Nunavik FSCP, 25% of all residential dwellings in each Northern village will be inspected annually. As well, discussions with the Kativik Muncipal Housing Bureau will be completed to ensure the installation of smoke detectors in all social housing dwellings in the region, in accordance with the draft municipal by-law included in appendix. In year two of the Nunavik FSCP, local fire departments will begin implementing the KRG-developed inspection program.

Action G – During the third year under the Nunavik FSCP, the qualified regional preventionist staff will develop guidelines for a high-risk inspection program to be implemented by the KRG and local fire departments in all the Northern villages. Such a program will likely incorporate geoportal information technology that allows infrastructure data (such as floor plans and risk analysis) to be incorporated into response planning. The guidelines will provide

for all medium, high and extremely high risks to be inspected over the course of the Nunavik FSCP; beginning in the fourth year under the Nunavik FSCP, 50% of all medium, high and extremely high risks in each Northern village will be inspected annually for the last two years of the Nunavik FSCP. The costs incurred in the delivery of this service (for example, travel costs) have been included in the preventionist component described at A_3.

Action H – During the second year of the Nunavik FSCP, the qualified regional preventionist staff will revise regional and local public awareness campaigns and develop related guidelines for the Northern villages. The guidelines will encourage the Northern villages to develop local initiatives.

MSP objective 2: 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 the urban zone defined on the development plan, the deployment of a strike force that makes an effective intervention possible.

Action I – Under the Nunavik FSCP, each Northern village will strive to optimize the number of fire fighters available to respond to occurrences and to maintain the response time indicated in Subsection 3.5.6. As well, insofar as permitted by local resources and labour power, the Northern villages will strive to upgrade the local strike force to meet recommended minimum levels. Solutions for achieving this result might include continual recruiting efforts, encouraging the participation of more women, and developing youth through a fire safety cadet program.

Action J – Based on the standard communications equipment already present locally, the regional fire safety co-ordinator will develop with each Northern village guidelines related to the optimal use of communications equipment, taking into account the informal and effective communications networks already present in Nunavik's small communities.

Costs of $15,000 per community are planned, for a total amount of $210,000 during the last two years of the Nunavik FSCP. The exact order of community priority has yet to be determined; the order indicated in the above table is only provided on a tentative basis.

Table 17. Communications acquisition schedule

Village	Year 1	Year 2	Year 3	Year 4	Year 5
Akulivik				X	
Aupaluk					X
Inukjuak				X	
Ivujivik				X	
Kangiqsujuaq					X
Kangiqsualujjuaq					X
Kangirsuk					X
Kuujjuaq					X
Kuujjuarapik				X	
Puvirnituq				X	
Quaqtaq					X
Salluit				X	
Tasiujaq					X
Umiujaq				X	

Action K – Only the Northern Village of Kuujjuarapik currently possesses underground waterworks for the large majority of its urban zone for regular drinking water and fire fighting purposes. The Northern village is responsible for the operation and upkeep of the system with technical support provided by the KRG Municipal Public Works Department.

For Nunavik's other Northern villages, during the second year of the Nunavik FSCP, the regional fire safety co-ordinator will develop appropriate water supply guidelines for delivery truck systems. Specifically, the guidelines will recommend that at least three trucks should parked with full reservoirs in case of a fire at

nights and on weekends and holidays. In communities where only two water delivery trucks are available extra care must be taken to ensure the delivery of an adequate supply water; however it may be noted that these same villages possess vehicles with CAF systems and that CAF systems require a much smaller supply of water than traditional water-type fire trucks.

The guidelines will also make recommendations concerning communications procedures between the local fire department and water truck operators based on the communications resources in each Northern village.

Action L – Under the Nunavik FSCP, the KRG will continue to co-ordinate training for the region's volunteer fire fighters and officers.

During the first year of the Nunavik FSCP, the qualified regional training staff will negotiate an agreement between the KRG and the École nationale des pompiers du Québec (fire fighters academy) concerning the delivery in Nunavik of fire fighter and fire officer training that is compliant with current regulations and the practices guide published by the École nationale des pompiers du Québec. Also in year 1, the qualified regional training staff will arrange to have the training completed by regional volunteer fire fighters between 1999 and 2005 recognized by the École nationale des pompiers du Québec in accordance with current Québec regulations. Between years 2 and 5 of the Nunavik FSCP, the qualified regional training staff will ensure that all volunteer fire fighters are given an opportunity to complete training that is compliant with current regulations, as well as maintaining related training records.

The qualified regional training staff will also be responsible for organizing annual refresher training (24 hours per fire fighter per year) in accordance with the NFPA standard 1500 and the practices guide published by the École nationale des pompiers du Québec. All the above-mentioned training will be delivered through visits to the Northern villages, video-conferencing and over the Internet. General costs incurred by the qualified regional training staff (such as travel costs to the Northern villages) have been included in the training component described at A_4. Certain costs (related to volunteer fire fighter travel and accommodations, as well as course delivery) are covered directly under Action L.

Action M – In the first year of the Nunavik FSCP, in co-operation with local fire departments, the regional fire safety co-ordinator will develop a replacement, maintenance and testing program for fire fighting vehicles and other equipment based on the MSP guidelines concerning response vehicle and equipment requirements (*Guide d'applications des exigences relatives aux véhicules et accessoires d'intervention*) (M_1). Beginning in the second year of the Nunavik FSCP, the replacement, maintenance and testing program for fire fighting vehicles and other equipment will be implemented by all the Northern villages, in accordance with applicable standards (M_2).

In particular, for fire fighting vehicles that have been in service for more than 15 years or vehicles that were not certified ULC at the time of purchase, complete performance certification tests will have to be completed during the course of the Nunavik FSCP and every five years thereafter, pursuant to ULC standards. To this end, two regional mechanics should be qualified in year 1 of the Nunavik FSCP to perform ULC-certified vehicle testing and maintenance. The costs incurred in the delivery of this testing service (for example, travel costs) have been included in the regional fire safety co-ordinator position described at A_2.

As well, according to the recommendations approved by the KRG in 2004, priority should be given to the acquisition of vehicles for the Northern villages of Kuujjuarapik, Inukjuak, Puvirnituq and Kangiqsualujjuaq, as well as to the overhaul of the fire fighting vehicles in the region's other communities to ensure that pumping capacity meets current regulations (M_3).

Table 18. Vehicle replacement schedule

Village	Year 1	Year 2	Year 3	Year 4	Year 5
Akulivik			O		L
Aupaluk				O	L
Inukjuak	R				L
Ivujivik			O		L
Kangiqsujuaq			O		L
Kangiqsualujjuaq		R			L
Kangirsuk				O	
Kuujjuaq				O	
Kuujjuarapik	R				
Puvirnituq		R			L
Quaqtaq				O	L
Salluit			O		L
Tasiujaq				O	L
Umiujaq			O		L

R – fire truck replacement, diesel-powered engines, hybrid truck: CAF system and pump that meets applicable standards, $260,000 per vehicle;

O – fire truck overhaul, retrofit CAF-system trucks purchased in 2000 with a pumping capacity of at least 1500 litres per minute, $80,000 per vehicle;

L – light-duty truck acquisition, facilitate regular fire prevention and inspection duties, $40,000 per vehicle.

The exact order of community priority has yet to be determined; the order indicated in the above table is only provided on a tentative basis.

With respect to equipment, the KRG intends to proceed with the following acquisitions (M_4) for each of the 14 Northern villages: four new self-contained breathing apparatus equipped with man-down alarms and compliant with applicable standards, eight spare air tanks, and ten bunker suits compliant with applicable standards (total cost per community, $35,000). Some Northern villages may independently decide to supplement this funding to acquire greater numbers of self-contained breathing apparatus, spare tanks and bunker suits.

Table 19. Equipment replacement schedule

Village	Year 1	Year 2	Year 3	Year 4	Year 5
Akulivik	X				
Aupaluk	X				
Inukjuak	X				
Ivujivik		X			
Kangiqsujuaq		X			
Kangiqsualujjuaq		X			
Kangirsuk			X		
Kuujjuaq			X		
Kuujjuarapik			X		
Puvirnituq				X	
Quaqtaq				X	
Salluit				X	
Tasiujaq					X
Umiujaq					X

The exact order of community priority has yet to be determined; the order indicated in the above table is only provided on a tentative basis.

Action N – Through the five years of the Nunavik FSCP, an **annual meeting** (N_1) should be organized for the fire chiefs of the Northern villages to review current developments in the field of fire fighting (including occupational health and safety issues), to co-ordinate training and to provide feedback on the local implementation of the Nunavik FSCP.

Also in the first year of the Nunavik FSCP, the regional fire safety co-ordinator will review and implement a regional **fire hall construction and renovation program** (N_2). According to the recommendations approved by the KRG in 2004, priority should be given to the construction of fire halls in the Northern villages of Quaqtaq, Kangiqsujuaq, Inukjuak and Puvirnituq.

Table 20. Fire hall construction schedule

Village	Year 1	Year 2	Year 3	Year 4	Year 5
Akulivik					R
Aupaluk				R	
Inukjuak			C		
Ivujivik					R
Kangiqsujuaq		C			
Kangiqsualujjuaq				R	
Kangirsuk				R	
Kuujjuaq				R	
Kuujjuarapik					R
Puvirnituq			C		
Quaqtaq		C			
Salluit					R
Tasiujaq				R	
Umiujaq					R

C – fire hall construction, based on garage construction projects carried out by the KRG Municipal Public Works Department in a few Northern villages in 2004 and 2005, $575,000 per building (which is to say $350 per square foot and 1600 square feet per building);

R – fire hall renovation work to enhance existing facilities (heating, washrooms, storage, etc.), $50,000 per building.

The exact order of community priority has yet to be determined; the order indicated in the above table is only provided on a tentative basis.

Also through the five years of the Nunavik FSCP, a **computer equipment acquisition program** (N_3) will be implemented for the fire department in each Northern village. According to the recommendations approved by the KRG in 2004, local fire departments should be assisted to acquire the tools they need to communicate effectively with the KRG about regional and local fire safety activities, including the transmission of fire response reports. An amount of $4000 will be allotted for each Northern village for this purpose.

Table 21. Computer acquisition schedule

Village	Year 1	Year 2	Year 3	Year 4	Year 5
Akulivik					X
Aupaluk					X
Inukjuak					X
Ivujivik				X	
Kangiqsujuaq				X	
Kangiqsualujjuaq				X	
Kangirsuk			X		
Kuujjuaq			X		
Kuujjuarapik		X			
Puvirnituq		X			
Quaqtaq		X			
Salluit	X				
Tasiujaq	X				
Umiujaq	X				

The exact order of community priority has yet to be determined; the order indicated in the above table is only provided on a tentative basis.

Action O – By the fifth year of the Nunavik FSCP, responses to the many current fire

fighting needs of the Northern villages should be well advanced. At that the time the regional fire safety co-ordinator and the Northern villages should be able to study their response activities and develop command guidelines, in accordance with MSP recommendations.

MSP objective 3: 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 risks categories, the deployment of an optimal strike force.

Action P – By the fourth year of the Nunavik FSCP, the qualified regional preventionist staff will co-operate with the fire departments of the Northern villages to carry out response planning for medium, high and extremely risks. Northern village fire departments will be assisted to develop the local resources needed to complete their local planning and ultimately provide better co-ordination. In the last two years under the Nunavik FSCP, response planning for 50% of all medium, high and extremely high risks in each Northern village will be performed annually. This will permit all response planning to be complete by the end of the Nunavik FSCP.

Action Q – According to the recommendations approved by the KRG in 2004, local fire departments and the qualified regional preventionist staff will undertake response planning at local airports, with Hydro-Québec for local power generators, and with local fuel distributors for related high-risk facilities. It may also be noted that the upgraded fire fighting human and physical resources described earlier in this section will also contribute to improved response capabilities.

MSP objective 4: Fill any eventual shortfall in terms of fire fighting capacity with adapted self-protection measures.

Action R – In the third year of the Nunavik FSCP, the qualified regional preventionist staff will undertake a review with stakeholders the feasibility of sprinkler systems in all new residential constructions in the region.

Other actions related to this particular MSP objective are described at actions F, G and H concerning low- and high-risk inspection programs and public awareness.

MSP objective 5: 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.

Pursuant to Section 11 of the *Fire Safety Act*, a fire safety cover plan may include elements with regard to disaster or accident risks likely to require the use of the identified fire response resources. However, those elements create obligations only to the extent determined by the local or regional authority concerned and only if expressly specified. Moreover, Section 47 stipulates that the municipality that has established a fire department and the members of that fire department are exempt from liability for any damage that may result from their intervention during a fire or during an emergency or disaster situation. Consequently, a municipality may decide to indicate in the fire safety cover plan that its fire department is also trained to use vehicle-accident extraction equipment within a certain zone. If the municipality clearly states the nature and scope of the service, it may be entitled to protection against liability similar to the exemption that applies to fire responses.

The KRG and the Northern villages have decided to not include other risks of disaster in the Nunavik FSCP. For their part, the Northern

villages with fire departments that offer certain services in addition to fire response services will continue to offer those other services.

MSP objective 6: Maximize the use of resources assigned to fire safety.

Regional activities related to this objective are discussed at actions A_1, A_2, A_3, A_4 and A_5. Local activities related to this objective are discussed, for example, at Action F concerning fire fighter participation in low-risk inspection programs.

MSP objective 7: 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.

Actions related to this objective are discussed at the beginning of this section. Refer to actions A_1, A_2, A_3, A_4 and A_5.

MSP objective 8: 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.

Action S – By the fifth year of the Nunavik FSCP, responses to the many current fire fighting needs of the Northern villages should be well advanced. At that the time, the regional fire safety co-ordinator and the Northern villages might undertake to formally co-ordinate their fire safety planning with other regional public safety organizations.

KRG recommendations not covered by the eight MSP objectives

Action X_1 – Throughout the five years of the Nunavik FSCP, the KRG Civil Security Section will encourage the Northern villages to establish public safety officer positions. These positions represent a creative resource for a number of public safety issues in communities. The Civil Security Section for example could develop guidelines and a model job description for the Northern villages. Civil security steering committees could also be created in the Northern villages to assist with local co-ordination efforts.

Action X_2 – According to the recommendations approved by the KRG in 2004, co-ordination with industry stakeholders should be fostered to obtain recognition for the compressed air foam systems already installed on fire fighting vehicles in Nunavik. The use of these vehicles makes good sense in the Northern villages because CAF systems require a much smaller supply of water (roughly 10% of the quantity needed by traditional water-type fire trucks) and they appear to be more effective than traditional water methods for fighting fires: more efficient use of water and ease of use.

Section 7 – Implementation Plan for the KRG and the Northern Villages

Ref.	Action	Responsible	Timetable	Annual cost	Five-year cost	KRG	Akulivik	Aupaluk	Inukjuak	Ivujivik	Kangiqsujuaq	Kangiqsualujjuaq	Kangirsuk	Kuujjuaq	Kuujjuarapik	Puvirnituq	Quaqtaq	Salluit	Tasiujaq	Umiujaq
A_1	Ensure the general co-ordination of all fire safety and emergency preparedness issues in Nunavik, including KRG Civil Security Section and Northern village actions	KRG	Year 1 to 5	--	--	X														
A_2	Employ a regional fire safety co-ordinator to ensure the implementation of the *Fire Safety Cover Plan for Nunavik*.	Civil Security Section	Year 1 to 5	$150,000	$750,000	X														
A_3	Employ qualified regional preventionist staff to perform specific actions identified in this implementation plan.	Civil Security Section	Year 1 to 5	$150,000	$750,000	X														
A_4	Employ qualified regional training staff to ensure training for volunteer fire fighters and officers in the Northern villages.	Civil Security Section	Year 1 to 5	$150,000	$750,000	X														
A_5	Ensure the activities of a fire safety steering committee comprising municipal regional representatives.	Civil Security Section	Year 1 to 5	$35,000	$175,000	X														
Objective 1 – Preventive measures																				
B_1	For each response carried out by the local fire department, prepare a report in accordance with applicable standards and forward to the KRG.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
B_2	Receive local response reports and enter information on MSP Internet database.	Regional fire safety co-ordinator	Year 1 to 5	--	--	X														
B_3	Develop and implement an assessment and analysis program based on submitted local response reports and report regularly to the KRG fire safety steering committee and the KRG Council.	Regional fire safety co-ordinator	Year 2	--	--	X														
C_1	Deliver basic fire cause and circumstance investigation and reporting training to local fire officers	Regional fire safety co-ordinator	Year 1	--	--	X														

C_2	Conduct basic fire cause and circumstance investigations following each response and call on the regional fire safety co-ordinator to conduct advanced fire cause and circumstance investigations when local resources are inadequate.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
C_3	Conduct advanced fire cause and circumstance investigations when required by the Northern villages.	Regional fire safety co-ordinator	Year 1 to 5	--	--	X														
D_1	Provide the KRG with information about local activities for the regional annual fire safety activity report.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
D_2	Draft an annual fire safety activity report pursuant to section 35 of the *Fire Safety Act* and transmit it to the MSP and to the Northern villages.	Regional fire safety co-ordinator	Year 1 to 5	--	--	X														
E_1	Develop model municipal by-laws concerning a local fire department and fire safety issues.	Regional fire safety co-ordinator	Year 1	--	--	X														
E_2	Adopt municipal by-laws concerning a local fire department and fire safety issues, based on the KRG model.	NV council	Year 2	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
F_1	Develop guidelines for a low-risk inspection program for the Northern villages according to the frequency identified in the Nunavik FSCP and deliver related training.	Regional preventionist staff	Year 2	--	--	X														
F_2	Implement a low-risk inspection program based on the KRG guidelines and the frequency identified in the Nunavik FSCP. Deliver related training..	Fire depart. officer	Year 2 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
G_1	Develop a high-risk inspection program to be implemented in the Northern villages according to the frequency identified in the Nunavik FSCP.	Regional preventionist staff	Year 3	--	--	X														
G_2	Implement the high-risk inspection program in the Northern villages based on the KRG guidelines and the frequency identified in the Nunavik FSCP.	Regional preventionist staff	Year 3 to 5	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
H_1	Revise the regional public awareness program and develop guidelines for a public awareness program for the Northern villages.	Regional preventionist staff	Year 2	--	--	X														
H_2	Implement a public awareness program based on the KRG guidelines.	Fire depart. officer	Year 3 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X

Objectives 2 and 3 – Low- and high-risk strike force																				
I_1	Maintain the strike force for the Northern village described in subsection 3.5.6 of the Nunavik FSCP.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
I_2	Strive to upgrade the local strike force to meet the optimal standards set by the MSP.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
J_1	Develop standard communications guidelines in co-operation with the Northern villages and implement upgrading program.	Regional fire safety co-ordinator	Year 4 to 5	$105,000	$210,000	X														
J_2	Implement the KRG communications guidelines locally.	Fire depart. officer	Year 4 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
K_1	Maintain the local drinking water supply system to ensure the delivery of the minimum required water in case of fire.	NV council	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
K_2	Provide technical support to the Northern villages to ensure adequate maintenance of waterworks and water supply systems in case of fire.	MPW Dept., KRG	Year 1 to 5	--	--	X														
K_3	Develop a maintenance and testing program for the underground waterworks system and the certification of fire hydrants based on NFPA standard 291.	MPW Dept., KRG	Year 3	--	--	X									X					
K_4	Implement this underground waterworks system maintenance and testing program.	NV council	Year 4 to 5	--	--										X					
L_1	Co-ordinate training for officers as well as basic training for volunteer fire fighters in Nunavik and annual refresher training, in accordance with applicable standards.	Regional training staff	Year 1 to 5	$250,000	$1,250,000	X														
L_2	Ensure that local officers receive appropriate training and that local volunteer fire fighters receive basic training and annual refresher training, in accordance with applicable standards.	Fire depart. officer	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
M_1	Develop a regional replacement, maintenance and testing program for fire fighting vehicles and other equipment based on applicable standards.	Regional fire safety co-ordinator	Year 1	--	--	X														

M_2	Implement the maintenance and testing program for fire fighting vehicles and portable pumps.	Fire depart. officer	Year 2 to 5	$13,500	$67,500	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
M_3	Implement a regional fire fighting vehicle replacement and overhaul program.	Regional fire safety co-ordinator	Year 1 to 5	$456,000	$2,280,000	X														
M_4	Implement a regional fire fighting equipment replacement and overhaul program.	Regional fire safety co-ordinator	Year 1 to 5	$98,000	$490,000	X														
N_1	Organize and participate in an annual meeting for Nunavik fire chiefs and ensure that occupational health and safety issues are discussed.	Regional fire safety co-ordinator	Year 1 to 5	--	--	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
N_2	Implement a regional fire hall construction and renovation program.	Regional fire safety co-ordinator	Year 2 to 5	$700,000	$2,800,000	X														
N_3	Implement a regional computer equipment acquisition program.	Regional fire safety co-ordinator	Year 1 to 5	$11,200	$56,000	X														
O	Study response activities and develop incident command guidelines.	Regional fire safety co-ordinator	Year 5	--	--	X														
P_1	Perform response planning for moderate, high and extremely high risks.	Fire depart. officer	Year 4 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
P_2	Assist the Northern villages to develop response planning for medium, high and extremely high risks and deliver related training.	Regional preventionist staff	Year 4	--	--	X														
Q_1	Identify training and equipment for all local fire departments to plan adequately responses to airport and aircraft emergencies.	Regional preventionist staff	Year 5	--	--	X														
Q_2	Enter into discussions with Hydro-Québec concerning related emergency response planning.	Regional preventionist staff	Year 5 or sooner	--	--	X														
Q_3	Enter into discussions with regional fuel suppliers concerning related emergency response planning.	Regional preventionist staff	Year 5 or sooner	--	--	X														

	Objective 4 – Self-protection measures																			
R_1	Foster consideration of fire safety issues in future building development in the Northern villages.	NV council	Year 3 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
R_2	Study the feasibility of requiring sprinkler systems to be included in all new buildings in Nunavik.	Regional preventionist staff	Year 3	--	--	X														
	Objective 8 – Public safety planning																			
S	Examine the possibility of establishing a regional inter-organization fire safety planning committee.	Regional fire safety co-ordinator	Year 5	--	--	X														
T	Establish a local committee to identify public safety and fire department issues and solutions.	NV council	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
U	At the local level, participate in inter-organization co-operation and planning.	NV council	Year 1 to 5	--	--		X	X	X	X	X	X	X	X	X	X	X	X	X	X
	KRG recommendations not covered by MSP objectives																			
X_1	Develop guidelines to enable the Northern villages to establish public safety officer positions.	Civil Security Section	--	--	--	X														
X_2	Work with industry stakeholders to obtain recognition for compressed air foam systems.	Civil Security Section	--	--	--	X														

Section 8 – Follow-up Planning

Three processes described in this document will make it possible to monitor the implementation of the Nunavik FSCP.

First, the KRG intends to remain in close contact with municipal fire safety stakeholders, in particular, through the proposed permanent regional fire safety steering committee. This regional committee will be responsible for reporting annually to the KRG Council on the implementation of the Nunavik FSCP and other related priorities.

Secondly, the Northern villages are to report to the KRG on local actions each year and these results will be compiled into a comprehensive annual report on municipal and regional activities. The report, which will be prepared in accordance with MSP-identified performance indicators, will provide information on the implementation of the Nunavik FSCP and other related priorities.

Thirdly, under the Nunavik FSCP many new fire safety actions are consolidated at the regional level to ensure the cost-effective use of resources for a small population in an immense region. The KRG will therefore have a major support role to play in ensuring the implementation of the regional and local actions described in this document, as well as related priorities.

Appendix 1 – Model Municipal By-laws

NORTHERN VILLAGE OF _____

By-law No. 2010 - __

Concerning the creation of a fire department

Whereas the Municipal Council has the power to organize, maintain and regulate a fire department and fire brigade by virtue of subsection 173 (9) of *An Act respecting Northern villages and the Kativik Regional Government* (R.S.Q., c. V-6.1; hereinafter the Kativik Act);

Whereas the Council has the power to appoint all officers necessary for the extinction and suppression of fires and for the protection of persons and property from fire by virtue of subsection 173 (9) of the Kativik Act;

Whereas subsection 173 (10) of the Kativik Act provides that the Council may make by-laws to authorize the demolition of buildings, houses and fences, when deemed necessary to arrest the progress of fire, and to empower the Mayor, the Fire Chief or other officers to exercise this power;

Whereas powers are conferred on the municipality regarding fire protection and safety by virtue of subsection 173 (8) of the Kativik Act;

Whereas the municipality offers a fire protection and safety service and it intends to maintain this service;

Whereas the objectives of a fire department should be identified and its duties and workings defined;

Whereas it is possible for the municipality to offer a fire protection and safety service that will make every effort to protect individuals and prevent the spread of a fire from building to building;

Whereas orientations regarding mandatory firefighter training have been set by the government in the *Regulation respecting the Conditions Governing the Exercise of Functions within a Municipal Fire Safety Service* (R.Q., c. S-3.4, r.0.1) and deemed to have been adopted pursuant to the *Fire Safety Act* (R.S.Q., c. S-3.4);

Whereas a notice of motion for this by-law was duly given during the preceding sitting of the Council held on _____, 2010.

THEREFORE, the Council of the Northern Village of _____, by this by-law, enacts and decrees as follow:

1. FIRE DEPARTMENT

1.1 A fire protection and safety service, designated as the "Fire Department", is hereby officially created.

2. OBJECTIVES OF THE FIRE DEPARTMENT

2.1 The Fire Department shall respond to fires in order to protect human life and to prevent these fires from developing into blazes that may spread from building to building.

2.2 The Fire Department shall carry out inspection, prevention, as well fire cause and circumstance investigation activities.

2.3 The Fire Department shall be responsible for fire fighting and rescue activities at fire scenes.

3. OBLIGATIONS OF THE FIRE DEPARTMENT

3.1 The Fire Department shall respond to all emergency fire calls for the territory of the municipality.

The Fire Department shall also respond as required in accordance with a decision

taken pursuant to the law, this by-law or any agreement that binds the municipality.

3.2 The Fire Department shall fulfill its obligations in accordance with the personnel, equipment and financial resources at its disposal and insofar as the fire scene may be reached by road, if applicable.

Moreover, fire response operations shall be carried out in accordance with the Fire Department's capacity to maintain a supply of water to fight the fire, taking into consideration municipal infrastructure, available equipment and the topography of the area.

3.3 Subject to the restrictions that may be imposed by the Kativik Regional Police Force (KRPF) pursuant to section 45 of the *Fire Safety Act* (R.S.Q., c. S-3.4), for every fire that occurs in the jurisdiction of the Fire Department, the Fire Chief or his designated representative shall determine the source of the fire, its probable causes, as well as its circumstances including, among other things, the characteristics of the building or property and the chronology of events.

3.4 When a fire occurs, the Fire Department shall confine and extinguish the fire.

3.5 During inspections, the Fire Department shall verify compliance with the municipal by-law concerning fire prevention (specifically, the presence of smoke or heat detecting devices, fire extinguishers, etc.) and identify potentially dangerous situations (propane canister storage, the presence of dangerous household materials, etc.).

4. ORGANIZATION OF THE FIRE DEPARTMENT

4.1 The Fire Department comprises at least _____ firefighters or volunteer firefighters and a Fire Chief, all appointed by resolution of the Council.

4.2 The Council shall be responsible for the organizational structure of the Fire Department, its internal operating rules, and the appointment of its members.

5. CONDITIONS GOVERNING FIREFIGHTERS AND VOLUNTEER FIREFIGHTERS

5.1 A firefighter or volunteer firefighter shall be:

1. aged at least 18;

2. formally undertake to follow firefighter training in compliance with the *Regulation respecting the Conditions Governing the Exercise of Functions within a Municipal Fire Safety Service* (R.Q., c. S-3.4, r.0.1);

3. pass the generally accepted skills tests required by the Fire Chief and ratified by the Council, if applicable;

4. be deemed physically fit by a physician designated by the Council, following a medical examination, to become a member of the Fire Department;

5. maintain at all times the minimum level of physical fitness required to perform the work of a firefighter and, at the request of the Fire Chief, undergo a new medical examination to certify this minimum level of fitness;

6. possess a certificate of good behaviour delivered by the KRPF, unless an exemption has been obtained or the process for obtaining this certification is being completed;

7. reside or work in the municipality;

8. possess a driving permit authorizing the operation of the Fire Department's response vehicles or undertake to obtain such a permit.

5.2 Any member of the Fire Department, including the Fire Chief, who does not comply with the provisions of subsection 5.1 with the entering into effect of this by-law shall have one (1) year from the effective date of the by-law to comply with the provisions.

The Fire Chief shall have five (5) years from the effective date of the by-law to pass "non-urban officer or officer 1" training, or an equivalent course, in compliance with subsection 5.1.

5.3 On reaching the age of 60, an individual may not work as a firefighter or volunteer firefighter, with the exception of pumper operator, administrative or other related duties, unless he undergoes an annual medical examination during the month of January of each calendar year to certify his ability to perform all the duties of a firefighter or volunteer firefighter without jeopardizing his safety or that of third parties.

6. POWERS AND OBLIGATIONS OF THE MEMBERS OF THE FIRE DEPARTMENT

6.1 The members of the Fire Department shall comply with all municipal by-laws and, if applicable, with the internal operating rules identified by the Fire Chief and ratified by the Council.

These municipal by-laws and internal operating rules shall be updated annually and distributed to the members of the Fire Department.

6.2 The members of the Fire Department shall participate in the activities identified in the annual refresher training program developed by the Fire Chief. This program shall include but not be limited to response exercises.

6.3 When a fire occurs, each member of the Fire Department shall attempt to confine and extinguish the fire, whether set intentionally or not, with all the means available to him, and in accordance with generally accepted practices.

6.4 In order to perform their duties when a fire, disaster or other emergency situation occurs, the members of the Fire Department are empowered to enter any concerned or threatened location, as well as any neighbouring location in order to fight the fire or deal with the disaster or to limit its spread, and to deliver assistance.

6.5 In the case of forced entry provided for in subsection 6.4, if the occupant or owner of the property is absent, the property shall be returned to a secure state equivalent to that that existed before the forced entry.

6.6 The first member of the Fire Department who arrives at the scene of a fire shall be responsible for managing the response operations until an officer (or his immediate supervisor) assumes responsibility.

7. POWERS AND OBLIGATIONS OF THE FIRE CHIEF

7.1 The Fire Chief shall be responsible for:

1. the management of fire response operations. In the absence of the Fire Chief, his designated representative shall have this responsibility;

2. the appropriate use of human and physical resources made available by the municipality.

7.2 The Fire Chief shall, in particular:

1. ensure the safety of his personnel at all times;

2. oversee the administrative management of the Fire Department in accordance with the financial resources allocated by the Council;

3. assist with the application of all municipal by-laws directly related to fire protection and safety and foster the application of municipal by-laws that have an impact on fire safety;

4. make recommendations to the Council concerning the amendment of existing by-laws or the creation of new by-laws that may be deemed essential to protect human life and property against fire;

5. implement a basic training and annual refresher training program for the members of the Fire Department in order to maximize their performance, specifically at fire scenes;

6. make recommendations to the Council concerning the purchase of devices and equipment, the recruitment of personnel, the construction of a local fire hall, the improvement of the water supply system, and traffic patterns;

7. ensure that the Fire Department's equipment and facilities, with the exception of the water supply system and fire hydrants, are inspected and tested regularly, that related reports are prepared, and that follow-up (repairs, etc.) is carried out.

With the exception of the situation provided for in subsection 6.6, the Fire Chief shall be fully responsible for fire response operations and shall remain in charge of each fire scene until this authority is returned to the owner of the property or the person with proper jurisdiction. In particular, the Fire Chief shall take steps to distance from a fire scene any individual who poses a threat to his own safety or to the safety of others, or who interferes with firefighters or volunteer firefighters. In the absence of the Fire Chief, his designated representative shall have this responsibility.

7.3 In the case of an insufficient number of firefighters or volunteer firefighters for a response, the Fire Chief may accept or require the assistance of any capable individual.

7.4 In the case of insufficient fire fighting resources or their unavailability, the Fire Chief may accept or require the assistance of private resources.

7.5 The Fire Chief may order the demolition of any building, fence, structure or facility if he deems it necessary to stop the spread of a fire.

7.6 If there are reasons to believe that the source of a fire is suspicious or is a case provided for in section 45 of the *Fire Safety Act* (R.S.Q., c. S-3.4), the Fire Chief shall ensure that any evidence is protected, contact the KRPF, and assist with the resulting investigation. In such a situation, the Fire Chief or his designated representative may turn over authority for the fire scene to a police officer.

8. DISCIPLINARY MEASURES AND DISMISSAL

8.1 The Fire Chief may make recommendations to the Council concerning the reprimand or suspension of any firefighter or volunteer firefighter guilty of insubordination, improper conduct, repeated absences, or refusal or negligence to comply with the Fire Department's internal operating rules, its code of ethics or any other applicable rules.

8.2 A firefighter or volunteer firefighter may be dismissed by the Council if he does not comply with the provisions of section 5 or if he fails to comply with his obligations provided for under any municipal by-law or under his working conditions

9. MISCELLANEOUS PROVISIONS

9.1 Where the Fire Department is required to prevent or fight a vehicle fire, if the owner of the vehicle does not reside in the municipality, he shall be required to pay the higher of the two following fees: an amount of one thousand dollars ($1000) or an amount that is equal to the total costs incurred by the Fire Department to carry out the response operations, regardless of whether or not the owner required the service.

9.2 The personal protective clothing, work clothing, an identity card, and any other safety equipment deemed necessary pursuant to section 51 of the *Act respecting Occupational Health and Safety* (R.S.Q., c. S-2.1) shall be provided to each member of the Fire Department and paid for by the municipality.

9.3 The municipality shall provide insurance coverage for the members of the Fire Department, and the municipality shall remain the owner of this coverage.

9.4 The Fire Chief shall be responsible for the application of this by-law.

10. REPEAL OF PREVIOUS BY-LAW

10.1 This by-law supersedes and replaces any previous by-law enacted by the Council wholly or partially for the same purposes, and any such by-law is hereby repealed to the extent of any inconsistencies with this by-law.

11. COMING INTO FORCE

11.1 Should any section of this by-law be totally or partially voided by a Court, its other provisions shall remain valid and still be in force.

11.2 The present by-law shall come into effect on the day of its publication in accordance with section 138 of the Kativik Act.

12. VERSIONS

12.1 In the event of a discrepancy between the English, French and Inuktitut versions, the English version shall prevail.

13. COPY

13.1 Once published, the Secretary-Treasurer shall transmit the present by-law without delay to the Kativik Regional Government as per section 160 of the Kativik Act.

IN FAVOUR:

OPPOSED:

ABSTENTIONS:

ABSENTEES:

DATE OF ADOPTION:

MAYOR'S SIGNATURE:

SECRETARY-TREASURER'S SIGNATURE:

DATE OF PUBLICATION:

NORTHERN VILLAGE OF _____

Resolution No. 2010-__

Concerning the appointment of a Fire Chief

Whereas every appointment of municipal employees and the determination of their salary shall be decided by resolution as per section 44 paragraph 2 of *An Act respecting Northern villages and the Kativik Regional Government* (R.S.Q., c. V-6.1; hereinafter the Kativik Act);

Whereas the Municipal Council deems it necessary to ensure adequate fire protection services in the community, and a Fire Chief is required to do so;

Whereas announcements were made on the FM radio as well as in local job postings to find persons interested in becoming Fire Chief;

Whereas several people submitted their names for the position;

Whereas _____ has the qualifications requested under By-law No. _____ concerning the creation of a Fire Department as well as under section 20 of the Kativik Act;

Whereas the Council believes that _____ is the most suitable candidate.

It is therefore resolved that:

1. the preamble be an integral part of this resolution;

2. _____ be appointed Fire Chief;

3. the services of _____ will be required from time to time as need arises and the salary shall be of _____ per hour;

4. the Fire Chief shall abide by the rules set forth in By-law No. _____ concerning the creation of a Fire Department;

5. before entering upon his duties, the Fire Chief is bound to take the oath of office as per section 45 of the Kativik Act;

6. a certificate attesting the availability of sufficient funds be issued by the Secretary-Treasurer as per section 211.1 of the Kativik Act;

7. a copy of this resolution be sent without delay by the Secretary-Treasurer to _____;

8. this resolution come into effect the day of its adoption.

MOVED BY:

SECONDED BY:

IN FAVOUR:

OPPOSED:

ABSTENTIONS:

ABSENTEES:

DATE OF ADOPTION:

MAYOR'S SIGNATURE:

SECRETARY-TREASURER'S SIGNATURE:

NORTHERN VILLAGE OF _____

Resolution No. 2010-__

Concerning the appointment of a volunteer firefighter

Whereas every appointment of municipal employees and the determination of their salary shall be decided by resolution as per paragraph 2 of section 44 of *An Act respecting Northern villages and the Kativik Regional Government* (R.S.Q., c. V-6.1; hereinafter the Kativik Act);

Whereas the Municipal Council deems it necessary to ensure adequate fire protection services in the community, and volunteer firefighters are required to do so;

Whereas announcements were made on the FM radio as well as in local job postings to find persons interested in becoming a volunteer firefighter;

Whereas several people submitted their names for the position;

Whereas _____ has the qualifications requested under By-law No. _____ concerning the creation of a Fire Department as well as under section 20 of the Kativik Act;

Whereas the Council believes that _____ is the most suitable candidate.

It is therefore resolved that:

1. the preamble be an integral part of this resolution;

2. _____ be appointed volunteer firefighter;

3. the services of _____ will be required from time to time as need arises and the salary shall be of _____ per hour;

4. the firefighter shall abide by the rules set forth in By-law No. _____ concerning the creation of a Fire Department;

5. the working conditions usually offered to all municipal employees may not apply to volunteer firefighters;

6. a certificate attesting the availability of sufficient funds be issued by the Secretary-Treasurer as per section 211.1 of the Kativik Act;

7. a copy of this resolution be sent without delay by the Secretary-Treasurer to _____;

8. this resolution come into effect the day of its adoption.

MOVED BY:

SECONDED BY:

IN FAVOUR:

OPPOSED:

ABSTENTIONS:

ABSENTEES:

DATE OF ADOPTION:

MAYOR'S SIGNATURE:

SECRETARY-TREASURER'S SIGNATURE:

NORTHERN VILLAGE OF _____

By-law No. 2010 - __

Concerning fire prevention

Whereas the Municipal Council has the power to secure the peace, order, good government, health, general welfare and improvement of the municipality by virtue of section 166 of *An Act respecting Northern villages and the Kativik Regional Government* (R.S.Q., c. V-6.1; hereinafter the Kativik Act);

Whereas the Council has the power to make by-laws to protect the life and property of the inhabitants and prevent accidents such as may be caused by natural catastrophe, fire, mechanical defect or failure, or contamination from noxious substances by virtue of subsection 173 (8) of the Kativik Act;

Whereas the Council has the power to regulate and prohibit nuisances by virtue of subsection 174 (14) of the Kativik Act;

Whereas section 16 of the *Fire Safety Act* (R.S.Q., c. S-3.4) provides that within the scope of the fire safety cover plan a municipality shall determine specific actions to be taken such as the adoption of regulatory measures;

Whereas this by-law must be adopted and interpreted in light of the laws and regulations in effect in the Province of Québec as well as the *Code national du bâtiment* and the *Code national de prévention des incendies*;

Whereas a notice of motion for this by-law was duly given during the preceding sitting of the Council held on _____, 2010.

THEREFORE, the Council of the Northern Village of _____, by this by-law, enacts and decrees as follow:

1. DEFINITIONS

1.1 **"Authorized person"** shall mean any officer or municipal by-law enforcement officer of the municipality whose duty is notably to be in charge of the enforcement of the present by-law within the territory under the jurisdiction of the municipality.

1.2 **"Building"** shall mean any structure used or intended for supporting or sheltering any use or occupancy and includes, without in any way limiting the generality of the foregoing, a dwelling unit.

1.3 **"Person"** shall mean any physical person aged 18 years or older, whether a municipal citizen or not, a company, partnership, firm, corporation, association or politic body.

1.4 **"Suite"** shall mean a single room or series of rooms of complementary use, operated under a single tenancy, and including dwelling units, individual guest rooms in motels, hotels, boarding houses, rooming houses and dormitories as well as individual stores and individual or complementary rooms for business and personal service occupancies.

2. APPLICATION

2.1 Unless otherwise specified, the owners, tenants and occupants of property shall be responsible for carrying out the provisions of this by-law.

3. SMOKE ALARMS

3.1 Smoke alarms, conforming to CAN/ULC-S531-M, "Smoke Alarms", shall be installed in each building and in each suite.

3.2 In a building comprised of more than one floor at least one smoke detector must be installed on each floor except in a non-heated attic.

3.3 Smoke alarms shall be installed on the ceiling, inspected, tested and maintained in conformance with the manufacturer's

instructions. The test shall occur at least every six (6) months.

3.4 The battery of any smoke alarm using that kind of power shall be replaced annually.

3.5 It is strictly prohibited to alter a smoke alarm and to remove it from a building.

4. EXIT AND EMERGENCY DOORS

4.1 Exit and emergency doors shall be maintained in good working condition and free of obstructions (inside and outside) at all times, and without in any way limiting the generality of the foregoing, exit and emergency doors shall be maintained free of snow and ice accumulations.

5. FIRE EXTINGUISHERS

5.1. Portable extinguishers shall be installed in all buildings.

5.2. Portable extinguishers shall be located in or adjacent to corridors or aisles that provide access to exits.

5.3 All instructions for operating, maintaining and recharging portable extinguishers shall be permanently fixed to each unit.

5.4 Portable extinguishers shall be inspected every six (6) months and tested once a year by the authorized person.

5.5 Portable extinguishers having defects shall be repaired or recharged where necessary to ensure the extinguisher will operate effectively and safely.

5.6 Portable extinguishers shall be ready to use at all times, and without in any way limiting the generality of the foregoing, portable extinguishers shall not be used as clothes hangers.

6. ELECTRICAL APPLIANCES

6.1 In order to avoid hazardous conditions, any electrical appliances, such as a stove, that may create a fire or explosion hazard shall not be used without the presence of a responsible person nor left in operation without supervision.

7. FLAMMABLE OR COMBUSTIBLE MATERIALS AND LIQUIDS

7.1 Flammable or combustible materials and liquids in and around buildings shall not be permitted to accumulate in quantities or locations that will constitute an undue fire hazard.

7.2 It is strictly forbidden to store or use any flammable or combustible materials and liquids in buildings.

7.3 Flammable or combustible materials and liquids shall be kept out of reach of children at all times.

8. SMOKING AREAS

8.1 Smoking shall not be permitted in areas where conditions are such as to make smoking a fire or explosion hazard, without in any way limiting the generality of the foregoing it is strictly forbidden to smoke in furnace rooms and in any other place where flammable or combustible materials and liquids are stored or used.

9. OPEN AIR FIRES

9.1 Except for fires used for cooking in fireplaces, grills or barbecues, open air fires shall not be set without the prior written approval of the authorized person.

10. ACCESS TO BUILDINGS

10.1 Fire department vehicles shall have direct access to at least one face of every building by means of a street or yard.

11. INSPECTION OF PROPERTY

11.1 An authorized person has the right, if he believes on reasonable grounds that an offence against this by-law has been committed, to visit and examine all movable and immovable property, as also the interior and exterior of any house, building or edifice, in order to ascertain if this by-law has been contravened.

11.2 The owners, tenants or occupants of any property shall allow the authorized person to make such visit or examination.

12. PENALTIES

12.1 Any person who contravenes any provision of this by-law commits an offense and is liable, upon penal proceedings, to a fine of three hundred dollars ($300.00), with costs. Each day of infringement constitutes a separate offence.

12.2 The Court convicting a person for the breach of any section of this by-law may, in addition to any fine it may impose, issue an order to enjoin that person to refrain from committing any further such offense and/or cease to carry on any activity specified in the order and/or, if such person is the holder of a permit, license or certificate granted under this by-law, suspend such permit, license or certificate for the period that it deems appropriate, or revoke the same, or prohibit the renewal thereof during the period that it deems appropriate.

12.3 An authorized person may issue a statement of offence pursuant to this by-law.

12.4 Delays for the payment of penalties and costs imposed by virtue of the present section and consequences of failure to pay aforementioned penalties and costs are established in accordance with the *Code of penal procedure of Québec* (R.S.Q., c. C-25.1).

13. APPLICATION

13.1 The provisions of this by-law apply to every building within the territory under the jurisdiction of the municipality.

14. REPEAL OF PREVIOUS BY-LAW

14.1 This by-law supersedes and replaces any previous by-law enacted by the Council wholly or partially for the same purposes, and any such by-law is hereby repealed to the extent of any inconsistencies with this by-law.

15. COMING INTO FORCE

15.1 Should any section of this by-law be totally or partially voided by a Court, its other provisions shall remain valid and still be in force.

15.2 The present by-law shall come into effect on the day of its publication in accordance with section 138 of the Kativik Act.

16. VERSIONS

16.1 In the event of a discrepancy between the English, French and Inuktitut versions, the English version shall prevail.

17. COPY

17.1 Once published, the Secretary-Treasurer shall transmit the present by-law without delay to the Kativik Regional Government as per section 160 of the Kativik Act.

IN FAVOUR:

OPPOSED:

ABSTENTIONS:

ABSENTEES:

DATE OF ADOPTION:

MAYOR'S SIGNATURE:

SECRETARY-TREASURER'S SIGNATURE:

DATE OF PUBLICATION:

Appendix 2 – Fire Safety Steering Committee

Meeting 1: March 3, 2003

The first meeting of the steering committee for the development and implementation of the Fire Safety Cover Plan was held in Kuujjuarapik on Monday March 03, 2003.

The meeting was chaired by Lucassie Inukpuk, Mayor of Kuujjuarapik and attended by the following committee members:

- Pierre Roussel, Secretary-Treasurer, Northern Village of Kuujjuarapik;
- Ian Robertson, Secretary-Treasurer, Northern Village of Kuujjuaq;
- Johnny Williams, Municipal Manager, Northern Village of Inukjuak;
- Elijah Ningiuruvik, Municipal Manager, Northern Village of Kangiqsujuaq;
- Michael Cameron, Fire Chief, Northern Village of Salluit;
- Peter Kiatainaq, Fire Chief, Northern Village of Kangiqsujuaq.

One member of the committee was absent: Luc Harvey, Assistant Director General, KRG. The KRG Civil Security Section co-ordinator was present to provide support.

All were briefed on the mandate that is expected of the committee and are up to the challenge ahead. The work plan was presented and adopted with some minor changes and the following are some of the other points discussed.

The population shall be advised of the purpose and implications of the Nunavik FSCP sooner than was planned and shall be co-ordinated with this year's Fire Prevention week activities.

Consultation with regional entities regarding the drafted Nunavik FSCP document shall include local committees.

The secretary-treasurers, as chief administrative officers of the Nunavik municipalities, shall be briefed on the processes and implications of the Nunavik FSCP development as soon as possible and should be scheduled for their upcoming annual meeting in April 2003.

Concerns were voiced as to the methodology and software that will be used to gather and subsequently present the information obtained for the Nunavik FSCP. This will be revisited at the next meeting of the steering committee.

The efficiency of the assistants in gathering the information necessary for the development of the Nunavik FSCP may be improved if all information required were gathered simultaneously as opposed to the timetable set forth. This is a valid concern and will be evaluated on an ongoing basis as to its possibilities without putting undo or unnecessary stress on the part-time contract assistants.

Concerns were raised as to the legitimacy of the final recommendations that will result from developing the Nunavik FSCP. Craig Lingard (Civil Security Section, KRG) advised everyone that although the region may have to be creative in its approach and subsequent recommendations because of the unique challenges that are faced in the region, as long as the guidelines set forth to develop the Nunavik FSCP are respected and the KRG is properly involved and informed in all aspects of its development, the KRG would lend its full support in realizing the implementation of the recommendations contained in the final document.

Mr. Lingard stated that the committee, as was intended, represents well the interests of the municipalities that will be directly affected by the Nunavik FSCP.

The next meeting was planned for later in the spring by telephone conference.

Meeting 2: December, 2004

The meeting was attended by the following committee members:

- Pierre Roussel, Secretary-Treasurer, Northern Village of Kuujjuarapik;

- Ian Robertson, Secretary-Treasurer, Northern Village of Kuujjuaq;
- Johnny Williams, Municipal Manager, Northern Village of Inukjuak;
- Elijah Ningiuruvik, Municipal Manager, Northern Village of Kangiqsujuaq;
- Peter Kiatainaq, Fire Chief, Northern Village of Kangiqsujuaq;
- Luc Harvey, Assistant Director General, KRG.

Two members of the committee were absent: Lucassie Inukpuk and Michael Cameron. The KRG Civil Security Section co-ordinator and the consultant Douglas R. Lion were present to provide support.

The fire safety steering committee and a consultant reviewed the results of consultations carried out with all the Northern villages during the preceding two months and finalized 17 recommendations to be submitted to the KRG Council. Subsequently, the fire safety steering committee presented the 17 recommendations developed with the Northern villages and outlined planning for a fire safety cover plan for Nunavik. The KRG Council approved the 17 recommendations and the planning orientations as presented.

Meeting 3: June 21, 2007

This meeting of the fire safety steering committee was held in Kuujjuarapik on June 21, 2007. The following members were present:

In Kuujjuarapik
- Lucassie Inukpuk, Mayor, Northern Village of Kuujjuarapik, (fire safety steering committee chair);
- Pierre Roussel, Secretary-Treasurer, Northern Village of Kuujjuarapik;
- Ian Robertson, Secretary-Treasurer, Northern Village of Kuujjuaq;

By conference call
- Elijah Ningiuruvik, Municipal Manager, Northern Village of Kangiqsujuaq;
- Peter Kiatainaq, Fire Chief, Northern Village of Kangiqsujuaq.
- Michael Cameron, Fire Chief, Northern Village of Salluit;

Absent:
- Johnny Williams, Municipal Manager, Northern Village of Inukjuak;
- Luc Harvey, Assistant Director General, KRG;

Also in attendance at the meeting were support staff Craig Lingard (Civil Security Section, KRG) and Robert Mackey (consultant, Boreal Expressions).

After the meeting was opened and the agenda approved, Mr. Lingard updated the committee on recent discussions with the Kativik Municipal Housing Bureau (KMHB). As most fires in the Northern villages occur in social housing units operated by the KMHB, the committee stated that it would be appropriate for the organization to implement procedures to follow up on deficiencies identified during annual fire inspections carried out by Nunavik's municipal fire departments. The committee directed Mr. Lingard to forward a letter to the KMHB to request that follow-up be carried out to correct identified deficiencies within 90 days of local inspections. In the event that the KMHB fails to carry out this follow-up, the meeting discussed other avenues to have the deficiencies corrected in a timely manner.

The committee also approved that discussions be continued with the KMHB to analyze the feasibility of installing sprinkler systems in all new social housing construction projects in Nunavik, as well as the feasibility of installing smoke detectors that can not be tampered with by tenants.

Next, Mr. Lingard presented to the meeting the results of the comprehensive resource assessment of all 14 municipal fire departments that had been carried out by the KRG Civil Security Section through the spring and early summer of 2007. All the different aspects of the assessment were discussed, including in particular a model fire safety municipal by-law, training for fire officers, and specialized training for airport emergencies.

Next, the meeting was informed about two-days of meetings held in Kuujjuaq with a representative of the Ministère de la Sécurité publique (public security, MSP) that examined in detail the MSP's goals under the fire safety cover plan process. The meeting discussed the impact that these goals could have on the organization of fire response services in Nunavik: proposed responsibilities of the KRG and the Northern villages, as well as local and regional implementation plans.

Appendix 3 – Fire Fighting Equipment

Item	Description	Quantity
1	Bunker suits	10
2	Hose wrenches	10
3	Compressor – self-contained breathing app.	1
4	Hoses – 1½ in. (50 ft.)	5
5	Hoses – 2½ in. (50 ft.)	5
6	Self-contained breathing apparatus	4
7	Spare tanks – – self-contained breathing app.	8
8	Folding ladder (10 ft.)	1
9	Roof ladder (14 ft.)	1
10	Extending ladder (24 or 30 ft.)	1
11	Pike pole with fibreglass handle (4–6 ft.)	1
12	Pike pole with fibreglass handle (10–12 ft.)	1
13	Axes with fibreglass handle (3–4 ft.)	2
14	Emergency skilsaw	1
15	Turbojet nozzle –1½ in.	2
16	Turbojet nozzle – 2½ in.	1
17	Haligon tool	1
18	Basic firstaid kit	1
19	Bolt cutters – 3 ft.	1
20	Crow Bar (3–4 ft.)	1
21	Flashlights	4
22	Portable reservoir (4500 L)	1
23	Generator (2500 W minimum)	1
24	Hose clamp	1
25	Hose straps	2
26	Suction hose (10 ft.)	2
27	Pry bar (6 ft.)	1
28	Portable pump (2200 L/min)	1
29	Reducer Y-valve	1
30	Rescue ropes	2
31	Sledge hammer with fibreglass handle (3–4 ft.)	1
32	Tarpaulins (10 x 12 ft)	2
33	Ventilation fan	1
34	Wool blankets	2
35	Collapsible stretcher	1
36	Piercing rod (1½ in.)	1

Appendix 4 – Risk Analysis Maps