

Memorandum about the MRC Memphremagog Management Plan of the Flood-Zone in the Village of North Hatley

This memoir argues that the Management Plan must be modified in order to take into account the essential points discussed below.

1. THE MANAGEMENT PLAN AIMS AT REGULATING A FLOOD ZONE MOSTLY MADE UP OF A HIGH-CURRENT ZONE (0-20 YEARS RECURRENCE)

(See pictures below and compare them with Figure 11, page 22 of the Management Plan)

In terms of the *Politique de protection des rives, du littoral et des plaines inondables*, adopted in the context of the *Loi sur la qualité de l'environnement* (Q2), in principle, no construction is allowed in high-current zones (0-20 recurrence) with the exception of specific cases as stipulated in the articles 4.2.1 and 4.2.2.

In fact, most of the North Hatley flood-zone is in a high-current zone, as is clearly shown in the pictures taken in April 1994. There is an obvious and flagrant incompatibility between the reality revealed in these pictures taken in April 1994 and the contours of the high-current flood zone (0-20 recurrence) described in the Management Plan.



The April 1994 flood covers an entire sector indicated as a dry zone in the Management Plan.



The April 1994 flood spreads all the way to Capelton Road in the extreme western section of the flood-zone studied in the Management plan.



The water level during the flood of April 1994 is so high that it reaches a point where the bridge was threatened of being displaced.

The water level data which were at the source of the descriptions provided in the Management plan (EXP Report 2013) were taken less than 20 years later. The 1994 flood levels should have been included in the June 2013 study when determining the high-current zone contours.

This raises an essential question. Why was it that *les services EXP Inc.* who had been given the task by the Municipality in 2013 to produce an extensive hydraulic study, did not include in their calculations the data of the 1994 water levels which had been exceptionally high, and had totally invaded the flood-zone under study?

In Table 1 (*Description des épisodes d'inondations entre 1984 et 2015*) found on page 9 of the Management Plan, one has access to the data of **the Ministère de la Sécurité publique's** concerning the 13 flooding episodes which took place in the course of this 32 year period from 1984 to 2015. This data indicates that there was a flood every two years and three months on average. Amongst those, the 1994 flood, which lasted through the middle of April, is certainly one of the most memorable during this period. The Ministry mentions that 24 people had to be evacuated and 12 residences and three businesses were flooded. Pictures taken at that time, and reproduced above, show particularly high water levels during that flood.

In the following years many other floods have been the cause of road closures (Route 108 in 1996 and 1998 as well as other roads in 2002, 2008 and 2011).

Furthermore, in 2014, from the 5th to the 9th of April, less than 20 years after the 1994 flood, another major episode occurred. It is clearly illustrated in the picture below, where one can see the Massawippi River rising to height of the Pilsen Pub veranda. This time, Mill Street was flooded and sand bags had to be used in order to protect Route 108.



Picture taken between the 5th and the 9th of April 2014 showing the Massawippi River rising above the level of the Pilsen's ground floor.

One can see here that in 2014, Mill Street had to be protected with sand bags in order to keep flood waters out.

The Management plan does not correspond to the real facts since it identifies this zone as being dry. (Fig. 2, page 8)



Here is another high-current zone which the Management Plan identifies as being dry. (Fig. 2, page 8)

If one compares the water levels as revealed by these 1994 and 2014 pictures with the contours of the flood-zones as described on the Management Plan maps, it is easy to see that there is a problematic serious discrepancy.

In their report, transmitted to the Village of North Hatley on February 15th, 2016, EXP gives no explanation as to why, in their 2013 study, they did not take into account the 1994 data, nor do they explain why, in 2016, they did not adjust their data to take into account the 2014 flood.

They did, however, accept to adjust their data to take into account the effects of climatic changes, but that only in so far as to increase the immunisation levels (+ 32 cm) of the units to be built in the flood-zone. No changes have been made in the Management Plan to the limits of the flood-zones which originated in the 2013 study.

To summarize, the flood-zones as described in the Management Plan, do not take into account the April 1994 flood, nor does it take into account the flood of April 2014 (which took place less than 20 years later), both of which had generated water levels considerably higher than those suggested by the descriptions of the Management Plan. Consequently, we demand that the Management Plan be revised and corrected to take into account these important facts.

2. THE DEMAND FOR A DEROGATION AND ITS CRITERIA OF VALIDITY

Taking into account the dispositions of the articles 4.2.1 and 4.2.2 of the *Politique*, the Management Plan constitutes a derogation to the principle stated in Article 4. To be valid, this request for a derogation must meet the criteria stated in the *politique's* article 5.3 and its annexe 2.

Below are the justifications relating to each of these criteria.

2.1 An enclaved high-current zone

In terms of Art.5.3, paragraph 2, any works, constructions and other projects can be realized if they are a part of an *“aménagement de zones de grand courant qui sont enclavées à l'intérieur d'une zone de faible courant, si ces espaces ne revêtent pas de valeur environnementales”*

In fact, the high-current zone which is the object of the Management Plan is not enclaved (enclosed) by a low-current zone. The zone has a shape of a large corridor with variable contours, which crosses the sectors P5, M2, M1, R1 and R3 starting from

the north-west shore of Lake Massawippi to join the Massawippi River further north (see the Management Plan – *Concept d'aménagement*, Figure 11, page 22).

The only obstacles in this large corridor are public works realised over the years by the municipality: Main Street, the municipal parking, and the municipal park (see Michael Grayson letter of Jan 20th, 2017 sent to the Minister David Heurtel and the 6 startling pictures it includes. As clearly demonstrated in Grayson's letter, the high-current zone has never been enclaved (enclosed).

Consequently, the Management Plan should not allow construction in the high-current zone. It should be modified to take into account the facts demonstrated and the pictured above.

2.2 The works, buildings and other projects should be a part of an urban complex already existing (article 5.3, paragraph 3)

Now, in order to meet the criteria stated in this paragraph (density, number of constructions per hectare, 75 % of the land occupied **by main residences**), the author of the Management Plan included in his calculations sheds and out-buildings and considered them as main residences (See Paul St-Pierre's letter, dated December 21st addressed to the Ministers David Heurtel and Martin Coiteux, page 2).

The Management Plan therefore does not meet the criteria which require that new projects should be a part, a complement, of an already existing urban complex. Therefore, it should not allow construction in the high-current zone.

In fact, this section of the village is very "*villageoise*" in character and appearance. Even Main Street, which comprises many businesses, has nothing of an urban area character.

We should remember here that the Village's *Comité d'urbanisme* has always considered the center of the village as a *zone patrimoniale* which should be protected.

2.3 The residents' security must be assured, evacuation facilitated through immunisation measures (of the roads for instance) while protecting the free circulation of flood waters ... (Article 5.3, para. 5).

On the 15th of February 2016, the engineering firm EXP published a document about the effects of climate changes on the water levels of the Massawippi River. In it, one can read that it had been decided, by consensus, to apply an increase of 20% to the flows data calculated in the June 2013 study. Furthermore, an increase of 32 cm to the 100 year level for the immunisation guide-lines was to be applied for new constructions and enlarging of building in the flood-zone. This addition to the maximum water levels

was only conceded after two years of demands presented by citizens on this crucial topic. All this while, the municipal and MRC elected representatives continued to refuse to consider the consequences of climatic changes in their predictions.

In spite of all this, the Management Plan does not contain any measures regarding the immunisation of roadways to ensure the security of the high-current zone residents, and no study on the topic has been referred to, if they exist.

The minimum which should be done would be a study on this essential question before authorizing a housing project in the flood-zone.

2.4 Resulting risks

Residents are put at great risk as a result of the authorisation to build two housing units in the sectors M1 and M2, which are located in the very center of the high-current zone.

In these two buildings, four and five storeys high respectively, and each comprising underground parking, 50 to 90 housing units are authorized. (See page 23 and figure 12, page 27 of the Management plan).

Let's imagine for a moment the consequences of a flood similar to the ones that occurred in 1994 and in 2014 or the ones that could result from the expected changes in climate conditions. How would the security of the numerous residents and of their belongings be guaranteed in such extreme circumstances?

Upon reading the Municipality's commitments in the context of the Management Plan (Table 5, pages 29 to 33), we have a good idea of the scope of the risks associated with the construction of the buildings which would be authorized and for their tenants. For instance, there are serious causes of concern regarding the exceptional emergency measures, the pumping stations capacity, the adequacy of the buildings' immunisation measures, the limits of the heat sources, the handling of the fluvial waters, the efficient management of pumped waters, the adequacy of measures taken for the safety of the underground parking, and the limitation of back-filling in the flood zone.

The authors of this memorandum expect a frank discussion with the policy makers on the question of risk prevention for the population. The fact that the authors have a good knowledge of the terrain and of the capacity of the Municipality to intervene in adverse circumstances which are likely to manifest themselves in a flood situation and in inopportune moments such as in the middle of the night, makes them particularly worried about the residents security and about their belongings in such a situation.

In a flood zone such as this one, will the residents of these buildings have access to an insurance for the protection of their belongings? The simple answer is ¡NO!

The *Institut d'assurance du Canada* published in its March 2016 issue of *the Revue des professionnels de l'assurance (PAIA)* an article pertaining to the consequences of the climatic changes on the frequency and intensity of flood occurrences throughout the world and on the increasing damage costs resulting from floods in many Canadian provinces, including Quebec. On page 2 of this article we read the following:

“Aucun produit d'assurance habitation au Canada ne couvre les inondations résultant du débordement d'une rivière, d'un lac, d'un ruisseau ou de toute masse d'eau.”

Obviously this has to be taken very seriously as food for thought for any person authorizing, or initiating, the construction of multi-units apartment blocks in a recognized flood-zone as the one in the Village of North Hatley.

Who will pay for the damages resulting from a major flood in the Village?

If we take into account the principles stated by the Canadian Supreme Court judges in the Kamloops v. Nielson case, ***the Municipality of North Hatley would be held responsible for the damages suffered by the residents. Consequently, it is the tax-payers who will pay.***

2.5 The free-flow of surface water

Article 5.3, paragraph 6 of the Management Plan says that the hydraulic impacts resulting from the construction of the units that will be allowed must be kept to a minimum. The water must flow freely and the natural run-off must be assured. Nevertheless, the Management Plan allows the construction of two over-sized housing blocks in the M1 and M2 sectors along with the possibility of underground parking right in the center of the run-off corridor of the flood-zone high-current section.

The apartment block in sector M1 could hold 50 to 90 housing units and it will cover at least 58% of the high-current area of the M1 section. The block located in the M2 section will also be allowed to hold 50 to 90 units and it will cover 70% of the high-current area of the M2 section. Obviously this does not include the filling of the area that will have to be done around the buildings.

These two blocks will be a serious hindrance to the free-flowing, and the run-off, of the water. A part of those waters will be redirected towards the lower lands of the immediate surroundings and the neighbour properties will suffer the consequences of this run-off.

Furthermore, the new buildings will reduce the overall absorption capacity of the ground, and this will have the effect of extending flood periods.

For this reason, and for those cited above, we conclude that the Management Plan should not authorize construction or other works in the high-current zone.

3. CONSEQUENCES ON THE RESIDENTS' QUALITY OF LIFE

As far as the residents' quality of life is concerned, here are two impacts which should have been considered and studied closely before authorizing a housing project of this scale :

3.1 Parking and traffic

In spite of the fact that under-ground parking would be allowed in the new buildings, the municipal parking will not meet the needs of the residents of 210 supplementary housing units. For a development of that size, one should plan at least 300 parking spaces, let alone the spaces for the numerous vehicles associated with new services and deliveries and for the cars of the high numbers of tourists who visit our beautiful village in high season. Furthermore, such high density of cars could very well be the source of heat zones.

The commercial sector proposed in the C1 zone of the Management Plan, added to the buildings that would be allowed in the M1 and M2 zones which could hold 210 housing units, will result in a high concentration of population in a small area, in an increase in traffic difficult to manage, an increased risk of accidents for cyclists and pedestrians who are known to invade North Hatley's small streets during the Summer season. The necessary modifications to infrastructures will be difficult to realize and will be very costly.

4. SOCIO-ECONOMIC JUSTIFICATION OF THE PLAN

Although it is not our intention to contradict the Municipal authorities on the fiscal and economic questions, we have no hesitation in stating the following:

4.1 It is still possible to create more housing in North Hatley

It is well known that the developer who is at the source of the Management Plan is now the owner of the "Maison Blanche", situated on Massawippi road in North Hatley. This large building was, until 2011 a retirement home administered by a CHLD, which hosted some sixty residents. The CHLD moved to Sherbrooke, an event which, by the way, created the sudden drop in the North Hatley population (60 residents), reported by the

Municipality. This property could be transformed totally or in part into a multiple housing units or into condominiums.

There are other spaces in North Hatley which could as well be developed without creating the many risks associated with developing in a high-current flood-zone.

4.2 Alternatives to housing development

There are many alternatives to housing development that could be used to improve the financial situation of a municipality.

- Attracting small enterprises specializing in technical or other services
- Sharing costs associated with services which can be managed on a common basis with neighbouring municipalities
- Fusion with neighbouring municipalities

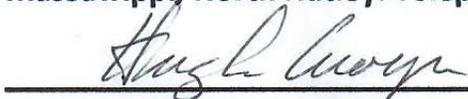
(See René Doucet's letter addressed to the Ministers Coiteux and Heurtel, dated January 16th, 2017, pages 4 and 5).

For all these reasons, we strongly encourage you to take measures in order to modify the Management Plan with the aim of ensuring North Hatley residents' safety and peace of mind.

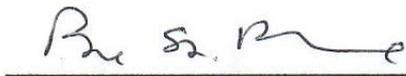
Thank you in advance for your attention to these critical concerns.



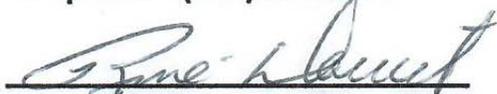
Michael Grayson, M.Sc., ingénieur environnementaliste , domicilié au 1085 rue Massawippi, North Hatley. Téléphone : (819) 842-3008



Hugh Gwyn, Ph.D., Géologie, domicilié au 445 rue Woodward, North Hatley. Téléphone : (819) 842-2740



Paul St-Pierre, Ph.D Littérature, LL.B., domicilié au 635 rue Sherbrooke, North Hatley. Téléphone : (819) 842-2659



René Doucet, L.L.L., LL.M., domicilié au 361 Chemin Hovey, North Hatley. Téléphone : (819) 842-1689.

Signed in North Hatley, February 28th 2017