

Report on the Flood of 2011

Dr. Jon Gerrard,

Leader, Manitoba Liberal Party

MLA, River Heights

December 2011

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**Please note: This is an interim report. Feedback and input is encouraged to improve reporting and recommendations.*

Summary:

The flood of 2011 was widespread and was the most costly in the history of our province. The report concludes that the very severe flooding on Lake Manitoba was a result of four factors, the very wet weather of 2010 and the heavy snowfall in western Manitoba in 2010-2011, the drain-only policy of the last 40 years of Tory and NDP governments, and the failure of governments since the 1970s to complete the needed improved outlet from Lake Manitoba to Lake Winnipeg. The report further reviews aspects of the flood at various locations throughout Manitoba and provides 30 recommendations for action. The report notes that Lake Manitoba was used as a water storage reservoir during the flood of 2011 in order to save Manitobans between Portage and Winnipeg and in Winnipeg. It also notes that there was inadequate warning for many residents around the lake and that to date compensation has been inadequate. Chief among the recommendations is a call for a very thorough independent review of the flood of 2011, as was done in 1997, in order that our province can be much better ready for future floods. This Liberal report is presented both to emphasize the urgency of this independent review, and also as input toward the material which needs to be considered as part of the independent review. It is important to take the opportunity of the 2011 flood to ensure similar improvements are made along the Souris and Assiniboine Rivers, and provide future protection for regions around Lake Manitoba, Lake St. Martin, along the Fisher River, around Lake Dauphin, the Shoal Lakes in the Interlake area and the Salt Lakes near Strathclair.

Introduction:

In 1997, an independent review of the 1997 flood was commissioned and a report was provided in June 1998, *An Independent Review of Actions Taken During the 1997 Red River Flood*.¹ This report made 58 recommendations. Implementation of many of these recommendations helped to mitigate problems associated with subsequent floods. Conversely, lack of implementation of certain recommendations has contributed to the extent of damage in floods like that of 2011.

The flood of 2011 was the most costly in the history of Manitoba with estimates of municipal, provincial and federal expenditures at \$815 million and rising. In addition there were losses to farmers of about \$1 billion, and significant but undetermined losses to individuals and businesses. The total cost of the flood will be more than \$2 billion. It was very extensive, being worst along the Souris and Assiniboine River watersheds and around Lake Manitoba and Lake St. Martin, but also affecting the Red River, the Waterhen River, Lake Dauphin and a considerable number of smaller lakes and rivers in Manitoba.

This report is based on first-hand observations and interactions with Manitobans living through the flood on the ground level. Conversations with residents and visits to many flood affected communities are what have informed the bulk of these observations and recommendations for the future.

¹ Manitoba Water Commission. 1998. *An Independent Review of Actions Taken During the 1997 Red River Flood*. A report to the Honourable J. Glen Cummings, Minister of Natural Resources, June 1998.

The flood was the product of high soil moisture, of heavier than usual snow fall particularly in parts of western Manitoba, and of the lack of appropriate water management policies. In this report, we assess various aspects of the flood of 2011 with a view to making recommendations for improvement and in order to be ready should there be another flood in 2012 or subsequent years.

It is our sincere hope that this collection of information, observations and recommendations will stimulate the government to immediately announce an independent review of the actions undertaken during the 2011 flood and ensure that it is made public in the interest of the well-being and future of all Manitobans.

Background to The Review:

In the period leading up to the flood of 2011, during and afterward Jon Gerrard had the opportunity to meet and visit with individuals and communities throughout Manitoba. Gerrard's experiences built upon his knowledge of and experience of many previous floods in Manitoba both as a federal Member of Parliament and a Member of the Legislative Assembly.

Communities and sites visited include but are not limited to St. Norbert, Brandon, Portage la Prairie, Delta Beach, Strathclair, Lockport, Selkirk, St. Laurent, Lake St. Martin, Little Saskatchewan, Ashern, Lundar, Ste Rose du Lac, Eddystone, the Hoop and Holler Cut, the Portage Diversion, and a flight over the Assiniboine River, the Portage Diversion, Lake Manitoba from the outlet of the Diversion to St. Laurent and the Shoal Lakes.

This report is presented in order to improve the readiness of Manitobans for future floods. The 1997 flood resulted in improvements in flood protection along the Red River, including dikes around communities and the expansion of the floodway, which have been very important to providing protection along the Red River in subsequent floods. It is important to take the opportunity of the 2011 flood to ensure similar improvements are made along the Souris and Assiniboine Rivers, and for Lake Manitoba, Lake St. Martin, along the Fisher River, and around Lake Dauphin, the Shoal Lakes in the Interlake area and the Salt Lakes near Strathclair which will provide the future protection needed for these regions.

While the report is presented with a view to being constructive in preparing for future floods, it has been necessary to point out areas where the response could have been improved both from a quality of response standpoint and/or from a cost standpoint. We have been particularly critical in instances where there had been previous recommendations from the Manitoba Liberal Party or from previous reports on Manitoba floods that if acted upon would have reduced the impact of the disaster.

The Red River:

The flood along the Red River was significant, but thanks to preparations begun as a result of the Independent Review of the 1997 Red River Flood, the damage to property and the disruption of lives was much less as relatively few people along the Red River had to be evacuated in 2011 compared to 1997 when about 28,000 Manitobans were evacuated. That being said, there were certain areas where decisions could have been improved as along the Red River, north of Winnipeg.

South of Winnipeg: In 2011, Highway 75 was closed at Morris from April 18 to May 17, or for 29 days. This resulted in a major disruption and diversion of traffic away from Highway 75. The closure also had a huge effect on the surrounding communities economically and in terms of emergency response times. A long run solution to the continuing closure of Highway 75 during Red River floods needs to be found.

Recommendation 1: A solution to the closure of Highway 75 at Morris needs to be found. The engineering and financing of a solution needs to be part of the plan developed in response to the 2011 flood.

North of Winnipeg: In 2011, there were major ice jams north of the site where the floodway enters into the Red River near Lockport. These ice jams resulted in water from the floodway entering the Red River and then flowing back toward Winnipeg and causing significant flooding of people in the Municipalities of East and West St. Paul. Damage may have amounted to as much as \$2-3 million dollars. Local residents believe that a major reason for the ice dams was the lack of dredging along the stretch of the river adjacent to Lower Fort Garry, and just north and south of this point. Historically (before about 1996) this section of the Red River was dredged regularly and the channel was kept deeper (about 20 feet deep), compared to presently when it is for most of the year about 12 feet deep. The greater depth of the river historically was associated with much less in the way of ice dams in this area, and there was not the back flooding found this year. Local residents argue that a modest annual funding towards dredging, perhaps \$200,000 - \$300,000, would have been sufficient to prevent the flood damage in the millions of dollars this year.

There have been ongoing discussions about the approach to breaking up the ice on the Red River, including the possibility of using hovercraft as well as the amphibexes.

Recommendation 2: The section of the Red River north of Lockport needs to be studied and appropriate actions taken to reduce problems with ice jamming in the spring which have led to flood problems north of Winnipeg.

The Assiniboine River:

Estimation of the extent of the flood of 2011:

There was considerable concern that the NDP government underestimated the extent of the flood of 2011. However, it was known that the ground was saturated in the fall, and through the winter the amount of snow in western Manitoba was considerably higher than normal. Indeed, in March 2011, the government predicted that the flood at Brandon would crest at 1182.2 feet. In fact it crested at 1182.9 feet, only 8 inches higher. Nevertheless, because the flood forecast for western Manitoba received a lot of criticism either because some of the time it was wrong, or because people were not adequately alerted to just how bad it was going to be at 1182.2 feet, many felt that the prediction and/or warning were not enough.

Recommendation 3: A full review of flood forecasting in the Assiniboine Basin is needed to ensure future forecasts provide adequate warning of conditions to people in the basin and in Lake Manitoba and Lake St. Martin.

Recommendation 4: An enhanced partnership is needed among Manitoba, Saskatchewan and North Dakota to provide improved flood modeling, flood forecasting and flood mitigation for the Souris and Assiniboine River watersheds.

The Primary Dyke at Brandon:

On June 20, 2006, Premier Gary Doer told Brandonites that "We will work with the federal government and the City of Brandon to ensure that Brandon is protected for a one-in-100-year flood event. We are committed to meeting a one-in-100-year target with the federal and city government."

Sadly, as Deveryn Ross reported (*Winnipeg Free Press* May 19, 2011),

"That promise was never kept. Brandon has nowhere near that level of flood protection. The Selinger government can't blame the City of Brandon. Brandon's acting city manager, Ted Snure, says that the provincial government never proposed a 1-in-100-year flood protection plan to the City of Brandon during the past five years. Sure, who has also served as Brandon's city engineer, was not even aware that Doer had made such a promise. In order to grasp the significance of that broken promise, consider that the 1-in-100-year flood protection level in Brandon is 1,181.6 feet above sea level at Brandon's First Street Bridge -- just 15 inches below this year's peak of 1,182.9 feet. That means that Brandon could have been protected against this year's flood with a few rows of ordinary sandbags if our NDP government had delivered the 1-in-100-year flood protection Brandon was promised. With that protection in place, no homes would have been flooded, no citizens would have been evacuated from their homes, no businesses would have been forced to close, and hundreds of workers would not have gone without paycheques."²

Clearly an investigation is needed into why the promise was never kept, and why the primary dike was never built as promised. This mistake was extraordinarily costly for the City of Brandon, because of the nature of the diking needed because of the absence of the primary dike protection to 1181.6 feet, and because of the extent of evacuation needed and the extent of business closures. The city estimates the cost of the 2011 flood at \$5.3 million.

Recommendation 5: A full investigation is needed into why the primary dike was not built as promised, and the extent of extra costs resulting from this mistake.

Recommendation 6: The primary dike is still not fully completed to provide protection to 1181.6 feet. Indeed, consideration must be given to putting the primary dike up to 1184.9 feet (the maximum height of the flood of 2011 plus two feet). This needs to be done on an urgent basis.

² Ross, Deveryn. "Brandon let down by NDP." *Winnipeg Free Press*; May 19, 2001.

The Impact of the Drain-Only Policy of the NDP Government During its 12 years in Power:

In 1997, one of the major recommendations of the Independent Review of the 1997 flood was to have a much better water management policy for Manitoba. This recommendation was neglected. For the last ten years the NDP government has had a drain only policy. For more details see: <http://manitobaliberals.blogspot.com/2011/11/ndp-provincial-water-management-policy.html>.

The result of this policy has been a disaster. Under successive Tory and NDP governments since the 1960s, the drain-only approach in western Manitoba has led to a 30 per cent increase in the amount of water coming off the land³. Under a policy which invested in water retention and drainage in a balanced way, there would have been dramatically less water coming off the land in western Manitoba, the Hoop and Holler Cut would have not been necessary and the damage on Lake Manitoba would have been dramatically less. Liberals have been outspoken on the misguided approach taken by the NDP, and have called repeatedly for major and consistent investments in water retention along the lines of the effort on the South Tobacco Creek where 27 small dams have reduced the peak runoff by 25 per cent.

The drain only policy has contributed to flooding of farmland as well as to flooding association with high water levels in many rivers and lakes in Manitoba. It should be noted, as relevant to this, that the South Tobacco Creek approach reduced downstream flooding of farmland by about 75%, and almost eliminated damage to municipal infrastructure like roads and culverts.

On November 22, 2011, Jon Gerrard flew with Bob Brigden to look at the situation in south-west Manitoba. There has been a large amount of new drainage in the fall of 2011, and no new water retention. The NDP folly continues.

In the 1997 independent review, a recommendation was made that, "the province should develop a sustainable water management structure to better serve the needs of Manitobans into the next century."⁴

Recommendation 7: The government must immediately change to a balanced approach which emphasizes no new net loss of wetlands and invests substantially in water storage.

Recommendation 8: Lessons from the South Tobacco Creek need to be implemented in many, many other areas of southern Manitoba.

Recommendation 9: An Ecological Goods and Services support program needs to be implemented province-wide using the Blanchard RM ALUS pilot program adjusted to take into account improvements suggested by the Manitoba Beef Producers.

³Gabor, Shane and Dr. Pascal Badiou. The Impacts of Wetland Loss in Manitoba; Fact Sheet. Ducks Unlimited Canada. 2008. <http://www.ducks.ca/conservation/research/projects/broughtons/index.html>.

⁴Manitoba Water Commission. 1998. An Independent Review of Actions Taken During the 1997 Red River Flood. A report to the Honourable J. Glen Cummings, Minister of Natural Resources, June 1998. pg. xvii.

The Portage Diversion:

In 2011, there were times when the Portage Diversion was operated beyond the design level, and there were places where the water was leaking and/or the banks had to be shored up. A full review of the status of the Portage Diversion is needed to plan for the future and ensure it is able to operate optimally with a flood like that in 2011, or at a level slightly higher. Concerns were also expressed about the operation of the gate which holds back water so that the water can flow into the Portage Diversion rather than down the Assiniboine River.

Recommendation 10: A review of the Portage Diversion is needed, together with a plan to address a flood the equivalent of 2011, or greater. A decision needs to be made as to the level to which the Portage Diversion/Assiniboine River needs to be planned to protect against a situation with a flow which is up to about 5,000 cfs more than in 2011. Where would the extra water go? Would the Hoop and Holler Cut be repeated? Would plans for a long term approach to handle this amount of water be made? Plans for handling a larger amount of water need to be in place to ensure decisions are well made in advance rather than last minute.

Recommendation 11: The full review of the Portage Diversion must include a review of the operation of the gate which holds back water for diversion into the Portage Diversion, and a review of the Diversion itself to ensure it is capable of handling well the 34,000 cfs without leaks should there be another flood like 2011 or of greater magnitude.

The Hoop and Holler Cut:

In 2011, the Hoop and Holler Cut was made to ensure safety and security of the flow along the Assiniboine River between Portage la Prairie and Winnipeg should the amount of water flowing down the Assiniboine River need to increase because the Portage Diversion had reached full capacity, and had the amount of water flow continued to increase. In the final analysis, the amount of water put through the Hoop and Holler Cut reached only about 500 cfs. However, there was a very large cost to the Hoop and Holler Cut in the extent of preparations that were needed in case more water had to be put through the Hoop and Holler Cut.

Flows through the Hoop and Holler Cut, quickly found their way to two small creeks south and east of the cut itself. This in fact was what, in part, contributed to only a small amount of land being inundated by the water flowing through the cut. In retrospect, improved planning might have allowed direct channels to be made to these two creeks reducing even further the impact on farmland.

The experience in building the Hoop and Holler Cut has allowed a better understanding of what can and should be done in the future if flows along the Assiniboine River were even to exceed the combined capacity of the Assiniboine River and the Portage Diversion. Planning needs now to occur to formally put in place a plan should this occur in the future, and preparations made for this should it happen.

Recommendation 12: A full analysis is needed of the costs and benefits of the Hoop and Holler Cut, its impact on handling the overcapacity, and risk of overcapacity, of the Assiniboine River and Portage Diversion.

Recommendation 13: A future plan is needed to address the situation should it arise in the future of flood waters exceeding the current capacity of the combined Assiniboine River and Portage Diversion. This plan may or may not use the Hoop and Holler Cut as the “safety valve,” but it does need to have a safety valve and the preparations need to be made in advance to optimize costs and benefits should this be necessary. The plan should look at whether permanent channels could or should be created from the Hoop and Holler Cut site to the two nearby creeks to minimize impact on farmlands, and to understand what is the maximum capacity of these two creeks, and the impact of this approach should another flood of the size of 2011 or greater occur.

The Assiniboine River from Portage la Prairie to Winnipeg:

The maximum amount of flow down the Assiniboine River between Portage and Winnipeg in 2011 was about 18,000 cfs. Even at this level there were many points of “leakage” where water was leaking through the dykes, and the Canadian Army had to be called in to provide the capacity to address these leaks because of the danger which could have occurred had the leaks become major breaks with widespread inundation of nearby lands.

One problem in 2011 was that the dykes between Portage la Prairie and Winnipeg had not been kept up to the necessary levels in the last 12 years. This caused a major problem. Hurried building of these dykes in the early spring did occur, but clearly left the situation at a tenuous level given the amount of leakage that occurred along the Assiniboine River.

Recommendation 14: A full review is needed of the dikes along the Assiniboine River between Portage la Prairie and Winnipeg with a view to ascertaining accurately the status of the dykes and to preparing a plan to ensure the dykes are built up to ensure safety of the flow along the Assiniboine River at 18,000 cfs, and to consider the possibility of being able to increase the flow along this stretch of the Assiniboine River during future floods.

Recommendation 15: Modeling studies are needed of the full Souris-Assiniboine watershed to provide for better flood management of this whole watershed in future years.

The Souris River:

The flood of 2011 resulted in a very high level of flood waters along the Souris River and the need for exceptional diking at and near Melita, Souris and Wawanesa. Consistent with what was done after the 1997 flood along the Red River, the situation of these communities needs to be reviewed with a view to putting in place permanent diking which will provide protection to a level of the 2011 flood plus two feet. This process should begin on an urgent basis. It has been suggested that part of the flooding problem in 2011 could have been lessened had water been let out during the fall of 2010 and during the winter from the Rafferty-Alameda Reservoir. This needs to be investigated and a plan put in place jointly with Saskatchewan for improving the approach in the future.

Recommendation 16: Assessment of the Souris River, particularly near Melita, Souris and Wawanesa should be completed with a view to recommendations to put in place flood protection for communities, and for homes and farm buildings to a level of 2011 plus two feet. In some instances it may be more cost effective and appropriate to buy out affected individuals.

Recommendation 17: Operation of the Rafferty-Alameda Dam should be reviewed jointly with the province of Saskatchewan to look at optimizing its operation in relation to circumstances where flood conditions are imminent.

Lake Manitoba:

Lake Manitoba was very severely impacted by the flood of 2011. In essence, Lake Manitoba was used as a water storage reservoir to protect people between Portage la Prairie and Winnipeg and in Winnipeg. Many residents around Lake Manitoba did not have adequate warning of the dramatic rise in water levels which was to occur this year. Indeed, in the first half of May, senior government officials were saying that the increased water flow through the Portage Diversion would not have much impact on Lake Manitoba water levels. Communities like St. Laurent and Delta Beach were devastated. Many other communities were very severely affected. While some communities built dykes that worked (as in Lundar Beach), much of the sandbagging at St. Laurent proved to be largely ineffective as six foot high sandbag dykes were overwhelmed by the surging waves and high waters. A very large impact also occurred on ranches surrounding Lake Manitoba. Many cattle producers were devastated by the situation. Developments at various places around Lake Manitoba, as at Lake Manitoba Narrows were severely impacted, and future development close to the lake will now be very much affected by the flood and the planning which occurs now in order to determine what the future levels of Lake Manitoba will be.

The government of Manitoba was caught with its pants down when it came to Lake Manitoba. When Jon Gerrard raised concerns in the Manitoba Legislature about Delta Beach on Lake Manitoba, senior staff in Minister Ashton's office said the problems on Lake Manitoba were not even on their radar. Why was the planning in terms of Lake Manitoba so inadequate? Why was Lake Manitoba not on the government's radar? Why was the channel from Lake Manitoba to Lake Winnipeg to increase the amount of flow possible from Lake Manitoba to Lake Winnipeg not constructed after having been recommended and seen as necessary going back to the 1970s? In the wake of the flood of 2011 and its impact on Lake Manitoba there remain many outstanding issues. For the long term, one of the most critical is to ensure a plan is in place to better accommodate large floods like 2011, or even larger, if they are to happen in the future. Long term planning around Lake Manitoba is vital to allow responsible planning for the future – in terms of what will be rebuilt, what will be bought out, and what future developments will be allowed around Lake Manitoba.

Delta Beach: It was problematic that people at Delta Beach felt that the government response was very slow initially in comparison to other areas. Indeed, local residents have indicated they believe \$50,000 spent on a dike at Delta Beach in early May could have protected the community and saved hundreds of thousands or millions of dollars in damage. [The \$50,000 likely underestimates the cost of the dike, but even if it were \$300,000, the savings would have still been substantial.] The severity of the impact at Delta Beach, and the potential for early intervention to prevent the devastation, means this area needs particular attention in a review and recommendations.

St. Laurent: A very large response was undertaken to the flood at St. Laurent with approximately 1,000,000 sandbags used in the early phase of the flood protection response. There were issues initially as few in the community had training building sandbag dikes. But under the leadership of individuals like Louis Allain, this was overcome and an amazing effort was put into building sandbag dikes up to six feet in height. However, the sandbag dikes were largely overwhelmed by the large storm at the end of May, 2011. The review should look at the situation of St. Laurent with particular attention to properties which survived the storm of May 2011 due to the nature of the diking provided. There is a clear need to develop improved approaches to protecting homes along the shore in St. Laurent, and to provide a clear plan for the future.

After the storm of late May, a dike was built internally in the community to protect the bulk of homes which had not been damaged in the storm. However, this should have been followed by greater effort to protect homes along the immediate shore of Lake Manitoba which had survived. An analysis is needed here of what could have been done better to protect homes in St. Laurent and what measures will be put in place for the future.

Recommendation 18: A complete review is needed of all aspects of the management of the flood on Lake Manitoba during 2011, from preparation, warning alerts, inspection, compensation, future planning etc.

Recommendation 19: Special attention needs to be made to the flow of water from Lake Manitoba to Lake Winnipeg. The capacity of the flow from Lake Manitoba to Lake Winnipeg needs to be increased so that larger flows are possible from Lake Manitoba to Lake Winnipeg without adversely impacting communities around Lake St. Martin or along the Dauphin River.

Recommendation 20: A long term plan needs to be put in place to regulate the level of water on Lake Manitoba, to minimize damage to those around Lake Manitoba while ensuring those downstream are not adversely impacted. This plan is vital to those living around Lake Manitoba being able to plan their lives moving forward. Regulations need to be put in place, for example, in relation to development around the Lake in the years ahead in light of what can be achieved in terms of assured flood protection in the future.

Recommendation 21: The review of the approach to the flood as it affected people around Lake Manitoba needs to use a "fairness" lens which looks at the fact that people on Lake Manitoba and Lake St. Martin took the "bullet" to save many others in Manitoba. It needs to look at the fair treatment of farmers and businesses which were affected, as well as home and cottage owners.

Lake St. Martin:

The communities of Little Saskatchewan and Lake St. Martin were very severely affected by the flood of 2011. As this report is being written there are still many residents of Lake St. Martin in hotels and temporary living arrangements as they are unable to return to their homes in Lake St. Martin and plans for an alternative temporary or permanent community site have been slow in coming together. There are many issues surrounding the situation on Lake St. Martin which need attention. The community of Lake St. Martin has seen higher water levels on a regular basis in the years since the Fairford Dam and since the operation of the Portage Diversion has put more water through Lake St. Martin. These changes and their impact on the community were never adequately addressed. The amount of water in Lake St. Martin has also been affected by the Fairford Dam which in many years holds back water in the summer, and then releases it in the fall in a way that has a severe adverse impact on muskrats and other wildlife on Lake St. Martin. This aspect has also not been addressed. Overall, the results of the situation on Lake St. Martin in the last thirty years, have had severe economic impact on the community of Lake St. Martin and their local cattle producers. To read more about these impacts, see: <http://manitobaliberals.blogspot.com/2011/05/flooding-along-assiniboine-river-in.html>

Recommendation 22: A full review of the impact of the flood on Lake St. Martin and the communities of Little Saskatchewan and Lake St. Martin is needed, along with the development of a plan and recommendations for the long term situation of Lake St. Martin. With the channel from Lake St. Martin to Big Buffalo Lake now operational, and with additional channel plans being contemplated, it will be possible in the future to have much better planning for the level of water on Lake St. Martin.

Recommendation 23: A report is needed on why the initial dike at Lake St. Martin was built so poorly that it was ineffective and contributed to more flooding instead of saving the community from being inundated.

Recommendation 24: An evaluation is needed of the poor planning which occurred when the channel from Lake St. Martin to Big Buffalo Lake was opened which resulted in the stranding of a great deal of equipment. There was a lot of extra unnecessary cost incurred because the channel was opened prematurely. A report needs to be made to detail what happened and why the costly mistake was made.

Recommendation 25: A plan needs to be implemented for the long term level of Lake St. Martin and for the long term situation of the communities of Little Saskatchewan and Lake St. Martin. This plan must extend to which communities will be moved or rebuilt on the existing sites, the extent to which permanent dikes are needed. As with Lake Manitoba, a fairness lens needs to be used because residents around Lake St. Martin suffered greatly so that many others in Manitoba could be spared.

Peguis and Fisher River:

The communities along the Fisher River, including Peguis and Fisher River, have experienced a great deal of flooding in recent years, particularly Peguis. In spite of much rhetoric, a robust long term plan has not yet been implemented.

Recommendation 26: An effective, long term flood protection plan for Peguis and Fisher River needs to be implemented expeditiously.

Lake Winnipeg:

Lake Winnipeg saw very high water levels starting in 2010 and continuing for much of the 2011 year. There was serious erosion in some areas, and it could have been much worse. Individuals in a number of communities where there has been substantial erosion including Lester Beach, Victoria Beach and Sagkeeng among others have felt there has been difficulty in getting a prompt, effective and consistent response to prevent continuing erosion. Liberals have advocated for a Lake Winnipeg Authority which would ensure the right balance is achieved in protecting cottages and in protecting beaches along Lake Winnipeg's shoreline. The authority will also serve to monitor marshland on the shores and provide protection for and support for restoration of marshes like the Netley-Libau marsh which are essential to the health of the lake.

Some of the suggested powers of the authority as envisaged would include:

- Full authority to regulate and manage shorelines on Crown land
- The authority to work with individuals around Lake Winnipeg to set "best practices" guidelines for shoreline management.
- A special focus on erosion and how it can be handled to better protect property owners
- A mandate to work with individuals, with municipalities as well as with First Nation and Métis communities around the lake
- A mandate to provide regulations with regard to lake levels within parameters to be established by legislation

Recommendation 27: It is recommended that a Lake Winnipeg Authority be established to help in managing the situation of those living around Lake Winnipeg to enable a consistent, effective and prompt response where there are concerns about erosion and other shoreline issues surrounding Lake Winnipeg.

Lake Dauphin:

Lake Dauphin suffered severely flooding in 2011. A full review of the situation on the lake is needed and a long term plan must be implemented for Lake Dauphin.

Recommendation 28: A review of Lake Dauphin and the flood of 2011 is needed and implementation of a plan to reduce future flood risks.

Shoal Lakes:

The Shoal Lakes in the Interlake region of Manitoba have seen a very large rise in the water level in recent years to the point where the lakes are now one lake. The situation continues to have a major impact on individuals and farms in the areas. A plan needs to be implemented expeditiously to address this issue.

Recommendation 29: A plan must be put in place expeditiously to deal with the very high water level in the Shoal Lakes and provide those in the area with the ability to plan for their future knowing what the future will hold in terms of water levels for the Shoal Lakes.

North Salt Lake and Salt Lake near Strathclair:

Near Strathclair, the situation of the North Salt lake and the Salt Lake has created problems for local landowners and for their farms. Many feel neglected by the government. A clear plan is needed to address this issue. See this blog post for a detailed analysis:

http://manitobaliberals.blogspot.com/2011/07/manitoba-liberals-have-very-different_07.html

Recommendation 30: A long term plan must be implemented to deal in a much better way with the Salt Lakes and with people in the region around Strathclair who are affected.

Support for Flood Affected Manitobans (Compensation, Buyouts, and Temporary Lodging for those Evacuated):

While problems arose in many areas of Manitoba with flood compensation, those around Lake Manitoba and Lake St. Martin have been the most severe. Gerrard has talked with many who feel the flood compensation issues around Lake Manitoba could have been much better handled. A family, whose St. Laurent homewasravaged in the large storm at the end of May that they could no longer live in it, still had not received any compensation by November. Many farmers were frustrated by the nature of the supports and dealing with programs which did not always adapt to the local needs on the ground. Business people often felt left out, whereas in the 1997 flood there was a program to help non-farm businesses deal with disruptions and lack of income due to flood related factors.

Overall, there have been many complaints raised of unfair or inadequate compensation. One particular area of contention has been the appraisal of property after the flood. Following the flood, there was a dramatic drop in the assessed value of many homes and properties around Lake Manitoba. While the drop may well represent the current purchase price if these properties could be sold, and may be helpful to individuals along the lake in dealing with school and municipal taxes in the next year or two, it is very problematic to apply the reduced value of property after the flood to determine compensation to be paid. Compensation should be paid on the basis of the pre-flood value of the land and property, not on the basis of the post-flood much reduced value.

Had a recommendation from the independent review of the 1997 flood, calling for a complete disaster assistance program using a “one-window approach” been developed in advance of the need and been administered through local flood recovery centres, communities all over the province would have been better able to cope with the trying situation while being informed.⁵

Recommendation 31: The use of a “one-window approach” would have helped with various aspects of the delivery of support to those who were affected by the flood. Particularly problematic was the separation of farm-related compensation and support and other flood related supports. It should be reviewed as to why this was not achieved in 2011, and it should be implemented in the future.

Recommendation 32:When determining compensation for loss of value of land and property, the determination should start with the pre-flood assessed values.

⁵Ibid. pg. xv.

An Independent Review of the Flood of 2011:

While the present report may be the first overall report on the Flood of 2011 presented publicly, it certainly will not be the last. Indeed an important aspect of this report is that it is a chance to review the need for a thorough independent report as was done in 1997. In this review, we found that the independent review of 1997 was extraordinarily helpful in presenting and advancing plans for future flood protection in Manitoba. Indeed, the review of 1997 can be credited with being a critical step in the protection of the Red River Valley subsequent to 1997. The increased protection in the Red River Valley has been very successful in the years since in decreasing the risk of floods to residents of the Red River Valley.

A thorough independent review of the flood of 2011 could lay the same groundwork for measures to be taken along the Souris and Assiniboine Rivers, around Lake Manitoba and Lake St. Martin and in other areas of Manitoba which have been flood affected in the last few years including Shoal Lakes (the Interlake region), the Salt Lakes, Lake Dauphin, Fisher River as examples. Thus the establishment of an independent review as soon as possible is needed. Indeed, it is urgent. In 1997, the independent review was established in August of 1997, and reported in June 1998. We are already very late in establishing an independent review of the 2011 flood per these standards.

Part of the urgency of the review is the need to be prepared for 2012 and what it may bring. As we are now in December, we have already lost time in the fall of 2011 that could have been used in preparation. Liberals believe there is a major urgency to establish this independent review by the end of 2011, so that the recommendations can be ready as soon as possible.

An additional reason for the urgency of this independent review is the prediction of climate change models which suggest that Manitoba will have increased wet weather in spring and early summer in southern Manitoba. While in previous decades, we may have seen alternating wet and dry cycles, in the world of global warming we may see a consistent pattern of wetter years as we have seen in the last 15 years. While the models of climate change were predicting this change to a wetter climate in spring in southern Manitoba, this has not been adequately taken into account in the planning undertaken in the last decade. It now must be considered in our provincial preparations that we may have to be much better prepared for future floods as they may be more common than in the last 15 years.

Recommendation 33: An independent review of the flood of 2011 needs to be established as soon as possible, but not later than the end of December 2011.

Main Conclusions:

- 1) The primary causes of the flood were a) very high soil moisture, b) much higher than normal precipitation during the winter and spring in western Manitoba, c) a drain-only policy for water management for the last 40 years and d) failure to implement sufficient channel outlet capacity for water from Lake Manitoba to Lake Winnipeg within a reasonable time after the Portage Diversion was built.
- 2) There was a lot of room for improved performance by the provincial government, and identifying the shortcomings can help in better flood preparedness in the future.
- 3) Lake Manitoba was used as a water storage reservoir when large volumes of water were channeled through the Portage Diversion into Lake Manitoba to save people between Portage la Prairie and Winnipeg and in Winnipeg.
- 4) People around Lake Manitoba were not given sufficient warning of the large rise in water level which occurred on Lake Manitoba and to date have not been adequately compensated.
- 5) The problem of regulating water levels on Lake Manitoba is not yet fully resolved as the water release capacity from Lake Manitoba to Lake Winnipeg is still not sufficient to ensure the outflow can match flood inflows when the Portage Diversion is operating at full (or above) capacity.
- 6) The independent review of the flood of 1997 contributed in a major way to improvements in subsequent flood management, in particular to protection of the region along the Red River including Winnipeg and south of Winnipeg.
- 7) An independent review of the flood of 2011 is urgently needed for optimum flood protection for Manitobans in the years ahead.

Acknowledgements:

The kind help and assistance of many, many people is recognized. Thousands of volunteers worked very hard to deal with the flood of 2011. Many people working on the staff of municipal and provincial governments contributed an enormous effort with an incredible amount of overtime hours. The Canadian Armed Forces played a critical role in helping to deal with the flood of 2011. I had the opportunity to talk and meet with an extraordinary number of people during the 2011 flood. This report is a tribute to the many hard working Manitobans who contributed in one way or another to helping with the flood effort.

It is dedicated to the memory of Ed Connery who died recently. Ed Connery's farm was affected by the Hoop and Holler Cut. Ed Connery had a home at Delta Beach and he was affected also by the flood on Lake Manitoba. He was one among many, many people who were severely impacted by the flood of 2011.

Summary of Recommendations:

Recommendation 1: A solution to the closure of Highway 75 at Morris needs to be found. The engineering and financing of a solution needs to be part of the plan developed in response to the 2011 flood.

Recommendation 2: The section of the Red River north of Lockport needs to be studied and appropriate actions taken.

Recommendation 3: A full review of flood forecasting in the Assiniboine Basin is needed to ensure future forecasts provide adequate warning of conditions to people in the basin and in Lake Manitoba and Lake St. Martin.

Recommendation 4: An enhanced partnership is needed among Manitoba, Saskatchewan and North Dakota to provide improved flood modeling, flood forecasting and flood mitigation for the Souris and Assiniboine River watersheds.

Recommendation 5: A full investigation is needed into why the primary dike was not built as promised, and the extent of extra costs resulting from this mistake.

Recommendation 6: The primary dike is still not fully completed to provide protection to 1181.6 feet. Indeed, consideration must be given to putting the primary dike up to 1184.9 feet (the maximum height of the flood of 2011 plus two feet). This needs to be done on an urgent basis.

Recommendation 7: The government must immediately change to a balanced approach which emphasizes no new net loss of wetlands and invests substantially in water storage.

Recommendation 8: Lessons from the South Tobacco Creek need to be implemented in many, many other areas of southern Manitoba.

Recommendation 9: An Ecological Goods and Services support program needs to be implemented province-wide using the Blanchard RM ALUS pilot program adjusted to take into account improvements suggested by the Manitoba Beef Producers.

Recommendation 10: A review of the Portage Diversion is needed, together with a plan to address a flood the equivalent of 2011, or greater. A decision needs to be made as to the level to which the Portage Diversion/Assiniboine River needs to be planned to protect against a situation with a flow which is up to about 5,000 cfs more than in 2011. Where would the extra water go? Would the Hoop and Holler Cut be repeated? Would plans for a long term approach to handle this amount of water be made? Plans for handling a larger amount of water need to be in place to ensure decisions are well made in advance rather than last minute.

Recommendation 11: The full review of the Portage Diversion must include a review of the operation of the gate which holds back water for diversion into the Portage Diversion, and a review of the Diversion itself to ensure it is capable of handling well the 34,000 cfs without leaks should there be another flood like 2011 or of greater magnitude.

Recommendation 12: A full analysis is needed of the costs and benefits of the Hoop and Holler Cut, its impact on handling the overcapacity, and risk of overcapacity, of the Assiniboine River and Portage Diversion.

Recommendation 13: A future plan is needed to address the situation should it arise in the future of flood waters exceeding the current capacity of the combined Assiniboine River and Portage Diversion. This plan may or may not use the Hoop and Holler Cut as the “safety valve,” but it does need to have a safety valve and the preparations need to be made in advance to optimize costs and benefits should this be necessary. The plan should look at whether permanent channels could or should be created from the Hoop and Holler Cut site to the two nearby creeks to minimize impact on farmlands, and to understand what is the maximum capacity of these two creeks, and the impact of this approach should another flood of the size of 2011 or greater occur.

Recommendation 14: A full review is needed of the dikes along the Assiniboine River between Portage la Prairie and Winnipeg with a view to ascertaining accurately the status of the dykes and to preparing a plan to ensure the dykes are built up to ensure safety of the flow along the Assiniboine River at 18,000 cfs, and to consider the possibility of being able to increase the flow along this stretch of the Assiniboine River during future floods.

Recommendation 15: Modeling studies are needed of the full Souris-Assiniboine watershed to provide for better flood management of this whole watershed in future years.

Recommendation 16: Assessment of the Souris River, particularly near Melita, Souris and Wawanesa should be completed with a view to recommendations to put in place flood protection for communities, and for homes and farm buildings to a level of 2011 plus two feet. In some instances it may be more cost effective and appropriate to buy out affected individuals.

Recommendation 17: Operation of the Rafferty-Alameda Dam should be reviewed jointly with the province of Saskatchewan to look at optimizing its operation in relation to circumstances where flood conditions are imminent.

Recommendation 18: A complete review is needed of all aspects of the management of the flood on Lake Manitoba during 2011, from preparation, warning alerts, inspection, compensation, future planning etc.

Recommendation 19: Special attention needs to be made to the flow of water from Lake Manitoba to Lake Winnipeg. The capacity of the flow from Lake Manitoba to Lake Winnipeg needs to be increased so that larger flows are possible from Lake Manitoba to Lake Winnipeg without adversely impacting communities around Lake St. Martin or along the Dauphin River.

Recommendation 20: A long term plan needs to be put in place to regulate the level of water on Lake Manitoba, to minimize damage to those around Lake Manitoba while ensuring those downstream are not adversely impacted.

Recommendation 21: The review of the approach to the flood as it affected people around Lake Manitoba needs to use a “fairness” lens which looks at the fact that people on Lake Manitoba and Lake

St. Martin took the "bullet" to save many others in Manitoba. It needs to look at the fair treatment of farmers and businesses which were affected, as well as home and cottage owners.

Recommendation 22: A full review of the impact of the flood on Lake St. Martin and the communities of Little Saskatchewan and Lake St. Martin is needed, along with the development of a plan and recommendations for the long term situation of Lake St. Martin. With the channel from Lake St. Martin to Big Buffalo Lake now operational, and with additional channel plans being contemplated, it will be possible in the future to have much better planning for the level of water on Lake St. Martin.

Recommendation 23: A report is needed on why the initial dike at Lake St. Martin was built so poorly that it was initially very ineffective and contributed to more flooding instead of saving the community from being inundated.

Recommendation 24: An evaluation of the poor planning which occurred when the channel from Lake St. Martin to Big Buffalo Lake was opened which resulted in the stranding of a great deal of equipment. There was a lot of extra unnecessary cost incurred because the channel was opened prematurely. A report needs to be made to detail what happened and why the costly mistake was made.

Recommendation 25: A plan needs to be implemented for the long term level of Lake St. Martin and for the communities of Little Saskatchewan and Lake St. Martin, the extent to which communities will be moved or rebuilt on the existing sites, the extent to which permanent dikes are needed, etc.

Recommendation 26: An effective, long term flood protection plan for Peguis and Fisher River needs to be implemented expeditiously.

Recommendation 27: It is recommended that a Lake Winnipeg Authority be established to help in managing the situation of those living around Lake Winnipeg to enable a consistent, effective and prompt response where there are concerns about erosion and other shoreline issues surrounding Lake Winnipeg.

Recommendation 28: A review of Lake Dauphin and the flood of 2011 is needed and implementation of a plan to reduce future flood risks.

Recommendation 29: A plan must be put in place expeditiously to deal with the very high water level in the Shoal Lakes and provide those in the area with the ability to plan for their future knowing what the future will hold in terms of water levels for the Shoal Lakes.

Recommendation 30: A long term plan must be implemented to deal in a much better way with the Salt Lakes and with people in the region around Strathclair who are affected.

Recommendation 31: The use of a "one-window approach" would have helped with various aspects of the delivery of support to those who were affected by the flood. Particularly problematic was the separation of farm-related compensation and support and other flood related supports. It should be reviewed as to why this was not achieved in 2011, and it should be implemented in the future.

Recommendation 32: When determining compensation for loss of value of land and property, the determination should start with the pre-flood assessed values.

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