Date: 20210611
Docket: CI 13-01-82597
(Winnipeg Centre)
Indexed as: Pisclevich v. The Government of Manitoba
Cited as: 2021 MBQB 141

BETWEEN:	)	
	)	
FRED PISCLEVICH, JOHN HOWDEN, STEPHEN MORAN, SHAUN MORAN, 5904511 MANITOBA LTD., ALEX McDERMID, KEITH McDERMID, and SUNSHINE RESORT LTD.	)	For the Plaintiffs: Brian J. Meronek, Q.C. William S. Klym Erin A. Lawlor Forsyth
	)	
Plaintiffs,	)	
-and-	)	
	)	
THE GOVERNMENT OF MANITOBA,	)	For the Crown: Alan J. Ladyka Jim R. Koch
	)	
Defendant.	)	
	)	
	)	JUDGMENT DELIVERED: JUNE 11, 2021

JUDGMENT

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COURT OF QUEEN'S BENCH OF MANITOBA

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MCKELVEY J.

I. BACKGROUND

[1] This action was certified on April 4, 2018, as a class proceeding under ***The Class Proceedings Act,*** C.C.S.M. c. C130. The certification order has been amended on two occasions. The first was on February 28, 2019 (Document No. 74), which changed the definition of the class ("Class") to:

> 2. ... all individuals, corporations, partnerships or other legal entities that own real property and/or have an interest in real property situated within 30 kilometers of Lake Manitoba:
>
> i) whose property, real or personal, was flooded in 2011 by Lake Manitoba, its tributaries or distributaries, or surrounding bodies of water affected by overland flooding emanating from any of the above; and
>
> ii) who suffered damages, including loss of income, as a result of the said flooding in 2011,
>
> including the estates of any persons how have died since March 1, 2011 who meet the preceding criteria.

[2] The second amendment of the certification order occurred during the course of this trial on March 4, 2021, to define the two common issues under consideration as:

1. Did the Defendant, Government of Manitoba ("Manitoba"), by its actions cause flooding to occur on off-reserve areas surrounding Lake Manitoba?
2. If Manitoba, by its actions, caused flooding to occur on off-reserve areas surrounding Lake Manitoba, did that flooding substantially interfere with the use and enjoyment of the real property interests of the Class?

The representative Plaintiffs are: John Howden, Stephen Moran, Shaun Moran, 5904511 Manitoba Ltd., Keith McDermid, and Sunshine Resort Ltd. These Plaintiffs are farmers, ranchers, cottagers, developers, and owners of recreational properties, in and around Lake Manitoba. They contend that damages were caused to the homes, cottages, businesses and farmlands of the Class as a

consequence of the 2011 flood and the Defendant's operation of the Portage Diversion. This action is based on the tort of private nuisance.

[3] Manitoba operates a number of water control works within the province for flood control purposes. The Portage Diversion (or "diversion") is a "water control work" under ***The Water Resources Administration Act***, C.C.S.M. c. W70 (the "***Act***"). It diverts water from the Assiniboine River into Lake Manitoba as part of the province's flood control system. This water control structure became operational in 1971 and was designed to divert up to 25,000 cubic feet per second (cfs) of water from the Assiniboine River in order to protect communities downstream from Portage la Prairie, including the City of Winnipeg. It also serves to reduce backwater on the Red River south of The Forks. During high water flows on the Assiniboine River with flood levels imminent, water is diverted through the Portage Diversion into Lake Manitoba. The Portage Diversion Operating Rules set out its operational objectives as follows (Supplementary Agreed Book of Documents, Exhibit 53, Tab No. 2):

> 1. To provide maximum benefits to the City of Winnipeg and areas along the Assiniboine River downstream of Portage la Prairie.
>
> 2. To minimize ice jams forming along the Assiniboine River.
>
> 3. Not to increase the water level in Lake Manitoba beyond the maximum regulated level of 812.87 feet (247.76 m), if possible.
>
> 4. Prevent overtopping of the failsafe section in the Portage Diversion, if possible.

[4] The diverted flows into Lake Manitoba serves to raise its water level. This effectively shifts flooding from one area of the province to another. There were three analyzed approaches to offset any effects caused by the Portage Diversion

on Lake Manitoba – negotiating easements on land around the lake, construction of dikes around the lake, or improvement of the Lake Manitoba outlet. It was determined that improvements to the Lake Manitoba outlet, being the Fairford River Water Control Structure and associated channel enhancements ("FRWCS"), was the superior option. The annual inflows into Lake Manitoba from both the Portage Diversion and natural inflows from 1924 to 2011 are as depicted in the Agreed Statement of Facts at para. 19 (Exhibit 1 and Appendix 1). The 2011 inflow caused by the diversion was significantly greater than ever before encountered.

[5] The FRWCS is a "water control work" under the ***Act***, and was completed in 1961, albeit it existed in a more simplistic form prior to that time. The 1961 enhancement resulted after a 1958 report evaluated water control measures for Lakes Winnipeg and Manitoba as a consequence of 1950s flooding (Book of Documents, Vol. 1, Tab 2, Exhibit 22). The Lake Manitoba outlet into the Fairford River is a relatively steep gradient and, consequently, the enlargement of that channel presented with no significant difficulties. The FRWCS consists of a concrete stop-log control structure which was accompanied by an excavation and enlargement of the natural river channel. The flows are controlled by the sequential installation or removal of stop-logs whose configuration affects the effective length and height of the structure over which water passes. The enhancement of the natural channel increased potential outflow capacity from Lake Manitoba by over three times the natural outlet capacity. The structure is also utilized to restrict outflow from Lake Manitoba during dry periods which

raises the lake level. The flows from the FRWCS go into Lake St. Martin and the Dauphin River.

[6] The Operating Guidelines for the FRWCS are based on the 2003 recommendations made to Manitoba by the Lake Manitoba Regulation Review Advisory Committee (Exhibit 54, Tab 3) ("Advisory Committee"). The Operating Guidelines are as follows (Agreed Statement of Facts, para. 24 (Exhibit 1)):

> 1) Lake Manitoba should be managed in a more natural fashion based on the Minimal Log Change Model (Appendix D) developed for the Committee by the Manitoba Water Branch. Utilizing this model, or a refined version, the following operating rules for the Fairford River Water Control Structure (FRWCS) should be applied:
>
> a) Water levels on Lake Manitoba should be permitted to fluctuate between 810.5 and 812.50 feet above sea level (ft asl) over a period of years, insofar as this may be reasonably possible, with the expectation that water levels on the lake may rise to 813.0 ft asl in some years and drop to 810.0 ft asl in others;
>
> b) Any variance in the lake levels outside of the range shall be shared between Lake Manitoba and Lake St. Martin, insofar as this may be reasonably possible;
>
> c) The level of Lake St. Martin should be maintained within a more natural range of 797.0 ft to 800.0 ft asl insofar as this may be reasonably possible, in order to reduce flooding, to provide better access for commercial fishing and recreational interests, to enhance the commercial and sport fisheries, to maintain marshlands in a natural state, to restore the natural aesthetics of the region and to provide for hayland for local ranchers;
>
> d) The minimum flow in the Fairford River should be 800 cubic feet per second (cfs) with a desirable minimum flow of 1,000 cfs insofar as the achievement of both of these flows may be reasonably possible, and
>
> e) An additional water level monitoring station should be installed on Lake St. Martin nearer the existing communities along the north shore.

[7] Commencing in 2005, the FRWCS has remained fully open on a near-continuous basis to allow for maximum outflow due to high water levels on Lake Manitoba. Its operation was reduced from November 2010 to February 2011 to account for frazil ice (ice crystals that can interfere with water control devices). Lake Manitoba has been regulated through the operation of the FRWCS in accordance with its Operating Guidelines until the events of 2011. The Agreed Statement of Facts (Document No. 86, Exhibit 1, para. 25, and Appendix 2) illustrated the water levels on Lake Manitoba and the operation of the FRWCS from 2005-2012. That figure shows that the FRWCS has remained fully open, almost continuously, to accommodate the maximum outflow of the high water levels on Lake Manitoba.

[8] A further water control structure on the Assiniboine River upstream of Portage la Prairie is the Shellmouth Dam and reservoir. This is both a "water control work" and a "designated water control work" under the ***Act***. The Shellmouth Dam came into full operation in 1971 and provides protection for communities such as Brandon, Portage la Prairie, and Winnipeg, as well as flood control protection for agricultural and residential properties in the Assiniboine River Valley. The reservoir created by the dam is known as Lake of the Prairies, which is drawn down in the fall and winter to create capacity for spring run-off.

[9] There exist other "water control works" such as diking along the Assiniboine River, especially downstream of Portage la Prairie. Also impacting the Lake Manitoba area is the surrounding watershed, including inflows from the Waterhen and Whitemud Rivers.

II. LEGISLATION

[10] The ***Act*** defines the following terms:

> **"artificial flooding"**, in relation to a given event, means flooding of a water body
>
> (a) that is caused by the operation of a designated water control work, or the operation of a designated water control work and one or more other water control works, and
>
> (b) whereby the water body exceeds its unregulated level at the time of the event.
>
> **"designated water control work"** means
>
> (a) the Shellmouth Dam, or
>
> (b) any other water control work designated in the regulations for the purpose of this definition, not including the "floodway" as defined in *The Red River Floodway Act* insofar as it relates to "spring flooding" as defined in that Act;
>
> **"unregulated level"**, in relation to artificial flooding, means the scientifically demonstrable level that would be expected in the water body at a given time
>
> (a) in the absence of the designated water control work, or
>
> (b) if specified by regulation in respect of the water body, in the absence of the designated water control work and one or more other specified water control works.
>
> **"water control works"** means works
>
> (a) for the conservation, control, disposal, protection, distribution, drainage, storage, or use, of water; or
>
> (b) for the protection of land or other property from damage by water,
>
> or for all or some of those purposes, and includes any other work necessary or convenient for the use, operation, or maintenance of a work to which sub-clause (a) or (b) applies or constructed or operated as a complement of such work.

A compensatory scheme was established by this legislation for artificial flooding caused by a designated water control work. The only water control work so designated by the ***Act*** or regulations is the Shellmouth Dam. It is agreed by the

parties that the Portage Diversion, FRWCS, and Shellmouth Dam are "water control works" as defined in the ***Act***.

[11] ***The Red River Floodway Act***, C.C.S.M. c. R32 ("***RRFA***") has set out similar definitions as those contained in the ***Act***, such as:

> **"artificial flooding"**, in relation to a given event, means flooding
>
> (a) caused by floodway operation during spring flooding; and
>
> (b) in which the Red River exceeds its natural level at the time of the event.
>
> .....
>
> **"natural level"** means the scientifically demonstrable water level that would be expected in the Red River at a given time during spring flooding in the absence of the floodway, the Assiniboine River Diversion, the Assiniboine River dykes, the Shellmouth Dam, the primary dykes in the City of Winnipeg, and urban development in the area protected by the floodway since its design was finalized.

[12] Manitoba submits that the definitions utilized in the ***Act*** and the ***RRFA*** for artificial flooding and unregulated water levels are applicable or offer guidance as to how to properly calculate the impact of the Portage Diversion on Lake Manitoba. (This will be more fully considered later in these reasons.)

III. THE 2011 FLOOD

[13] The fall of 2010 saw above-average precipitation levels in the Province which led to high water levels on Lake Manitoba. The water level of the lake was approximately 813.0 feet at the end of 2010 and, accordingly, beyond the optimal regulated level of 812.50. The acknowledged flood level is 814.0 feet. There was an unusually high water level and high soil moisture content before freeze-up in 2010. Additionally, elevated precipitation occurred during the winter

months resulting in a significant snow pack. Consequently, the water level in the Shellmouth Dam reservoir was drawn down by the end of March 2011 to a historically low pre-spring level. However, the volume of the spring run-off exceeded the spillway crest of the Shellmouth Dam.

[14] As earlier indicated, until November 16, 2010, the FRWCS had almost continuously operated at a maximum outflow in order to lower Lake Manitoba because of existing high water levels and the elevated potential for spring run-off. The outflow through the FRWCS was reduced in November 2010 to minimize the potential for frazil ice jams on the Dauphin River downstream of Lake St. Martin. The outflow was, again, increased in mid-February 2011 because a stable ice cover had been achieved.

[15] Manitoba began preparing for a flood event and, in February 2011, commenced reinforcement of the dikes along the Assiniboine River downstream of the Portage Diversion. The Portage Diversion was opened on April 1, 2011, and ran for 126 days until August 5, 2011. The measured inflow into Lake Manitoba from the diversion's operation was 4,733,937 acre-feet ("4.7 million acre-feet"). This was the largest influx of water ever recorded through the Portage Diversion. Previously, the largest inflow into the lake occurred in 1976, when 1.4 million acre-feet was diverted (Agreement Statement of Facts, para. 39, Exhibit 1 and Appendix 3).

[16] The spring and early summer of 2011 experienced continuing high levels of precipitation around Lake Manitoba and the surrounding watershed. In early May 2011, concerns arose that there would be uncontrolled breaches of the

Assiniboine River dikes and widespread flooding downstream from the Portage Diversion. As a consequence, Manitoba increased the flow through the Portage Diversion to approximately 34,000 cfs. This represented the most significant water diversion in the structure's operation (Appendix 4) Flows greater than 30,000 cfs were maintained until May 21, 2011 – a period of 31 days above the diversion's designed capacity of 25,000 cfs. A further method of flood control utilized was a controlled breach of the Assiniboine River dike downstream of Portage la Prairie at the Hoop and Holler Bend. That breach was opened on May 14, 2011, and closed on May 20, 2011.

[17] There are two gauges on Lake Manitoba which measure the water level on a daily basis. The Steep Rock gauge, located at the north end of Lake Manitoba, recorded a peak water level of 817.27 feet on July 21, 2011. The Westbourne gauge, located at the south west corner, recorded a peak level of 817.27 feet on July 11, 2011. These levels represented an average of the recorded levels at both gauge stations over a five-day period (Agreed Statement of Facts, para. 42, Exhibit 1 and Appendix 5) and were over 3.0 feet above the lake's 814.0 flood stage.

[18] On May 31, 2011, a severe storm hit Lake Manitoba and, particularly, the southern portion of the lake. That storm served to significantly increase water levels over the course of several hours because of wave uprush and wind setup. As a result, extensive property damage was occasioned to the surrounding area. Wave uprush is caused by high waves with uprush effects that often cause

considerable storm damage to shorelines, including erosion. Wind setup is the increase in water level from still conditions because of wind.

VI. THE REPORTS

[19] It is important to review a number of the reports, both preceding and subsequent to the 2011 flood, in order to appropriately evaluate the causation issue.

[20] The first report is the "Report of the Royal Commission on Flood Cost Benefit" (Exhibit 89). The Royal Commission report was published in 1958 as a consequence of the 1950 flood. That report primarily considered Winnipeg and the areas of the Red and Assiniboine Valleys. The recommendations of the Royal Commission included the need to construct the Greater Winnipeg floodway, a diversion of the Assiniboine River into Lake Manitoba, and a storage reservoir near Russell, Manitoba. These recommendations resulted in the Red River Floodway, the Portage Diversion and the Shellmouth Dam. The Royal Commission considered many issues, including the nature and frequency of flooding in the Red and Assiniboine Basins, flood controls and a cost benefit analysis of the flood control projects.

[21] An additional report was published in June 1958 by the Lakes Winnipeg and Manitoba Board (the "Board") (Exhibit 22) to specifically address measures for the control of Lakes Winnipeg and Manitoba. The Board considered issues such as crop loss and property damage that could occur when the lakes were at a high level, along with possible inconvenience to navigation, beach resorts and wildlife interests when the lakes were at a lower level. The Board was reacting to

a strong local demand for control of the lakes levels and the need for regulation. Lake Manitoba was described as "... a surface area of 1,200,000 acres, a mean outflow of 2,000 cfs and 450 miles of developed shoreline" (Exhibit 22, p. 4). It was determined that Lake Manitoba's natural outlet, being the Fairford River, was immediately downstream of Lake Manitoba and, because of a steep gradient, could readily be enlarged. It was determined that construction of a control dam, similar to the check dam then in existence, would not present with any unusual difficulties. Further, consideration was given to the fact that the proposed diversion of the Assiniboine River into Lake Manitoba would add to the lake's inflow – particularly when the lake was high. It was thought that Lake Manitoba regulation for flood control purposes should be set between the elevations of 811.0 and 813.0. This would lower the natural high stages of the lake by approximately 3.0 feet. Such a controlled level was considered desirable for the local interests and compatible with a scheme to divert Assiniboine River flood water into Lake Manitoba. The issues of agricultural interests, beach resorts and cottage owners were all outlined in the 1958 report, including consideration of wave actions and erosion. It was determined that with the FRWCS improvements, limits of 811.0 to 813.0 could be slightly exceeded for short periods of time because of evaporation. Further, wind setup and wave uprush were evaluated as being as much as 3.0 feet on rare occasions, but only for very short periods of duration. "The detrimental effects of such infrequent occurrences would also be very limited" (Exhibit 22, p. 27).

[22] The next report of significance was released in July 2003 by the Advisory Committee and again the regulation of water levels of Lake Manitoba and other closely clustered waterways was evaluated. The Advisory Committee was appointed in 2001 as a result of complaints to Manitoba about relatively high water levels on the lake. The Advisory Committee's task was to determine the most acceptable and practicable range of regulation for Lake Manitoba control, along with other issues. As was stated at p. i of the report (Exhibit 23):

> Attempts have been made to regulate Lake Manitoba water levels for about 100 years. In 1961, following a period of very high lake levels, the present Fairford River Water Control Structure (FRWCS) and associated channel improvements were constructed. Since then, Lake Manitoba has been regulated to a target level of 812.17 feet above sea level (ft asl) with a range from 810.87 to 812.87 ft asl. This is a much narrower variation than the historical range of approximately 810.0 to 816.0 ft asl recorded since water level recording began in 1913.

[23] The Advisory Committee considered the concerns raised by many of the stakeholders in the area, including cottagers, resort owners, First Nations, commercial fishers, ranchers and farmers. Interestingly (at p. i):

> Those in the south at Twin Lakes Beach and Delta Beach feel that the target level of 812.17 ft asl is too high and contributes to erosion, particularly during storms. These cottagers would prefer a level of 811.5 ft asl, particularly as fall approaches. Due to their location on the lake, these properties are affected by the highest potential wind setup (wind tide) and wave heights on the lake. This is because they are located at the receiving end of the longest fetch, or distance of open water, on the lake.

The interests of the stakeholders and their inputs were evaluated by the Advisory Committee along with a review of the previous studies. It was noteworthy that in 2003, the Portage Diversion had been used on 23 occasions and concerns had been expressed at many of the public meetings held about the perceived impact

of that structure on water quality and lake levels. The Advisory Committee stated (at p. 7):

> The largest impact of the Diversion on Lake Manitoba occurred in 1976 when 1,420,000 acre-feet (ac-ft) of flow was diverted into the lake... This volume would correspond to a 1.22 ft increase in the water level on Lake Manitoba if all of the water had been retained in the lake. However, as the lake level rises, the outflow through the FRWCS increases, thereby allowing some of this volume to flow out of the lake. The Water Branch estimates that the net impact of the Diversion in 1976 was to add about 10 inches to the lake level.

[24] The Advisory Committee reported that the majority of overland flow into Lake Manitoba was through the Waterhen River, as well as the Whitemud River. At that time, it also recognized that the 23 times that the Portage Diversion had been operational, it had contributed an average annual volume of 246,774 acre-feet to Lake Manitoba. This equated to 2.6 inches in the lake's water level. It was also noted that water leaves Lake Manitoba through evaporation, as well as through the FRWCS. The Advisory Committee recommended (at p. 23):

> The use of the Portage Diversion should be restricted to those periods of time and flows which are absolutely necessary to protect downstream interests along the Assiniboine River and in Winnipeg. The operating rules of the Portage Diversion should be re-examined, with the objective of asserting its primary function as a short-term flood protection work, and to minimizing its discharge of nutrients, sediments, debris, and other materials into Lake Manitoba.

One other of the recommendations of the Advisory Committee was that Lake Manitoba should be regulated and fluctuate at levels between 810.5 to 812.5 ft asl as was reasonably possible. The Advisory Committee's recommendations were accepted by Manitoba.

[25] In 2013, Manitoba released a report entitled the "2011 Flood: Technical Review of Lake Manitoba, Lake St. Martin and Assiniboine River Water Levels"

("Technical Review").[1] The introduction to the Technical Review reads (Exhibit 26, at p. 10):

> In the spring and summer of 2011, Manitoba experienced unprecedented flooding in many areas of the province. The Assiniboine River and Lake Manitoba were particularly affected, both enduring record high water levels for an extended duration. Lake Manitoba also experienced a significant wind event while water levels were high. The result of these two factors was that many residents, farmers, cottagers and businesses suffered losses either directly or indirectly, and a significant amount of local and provincial infrastructure was damaged by flooding.

The Technical Review considered the history of the water control structures involved, what transpired climatically, as well as the issue of causation. The Technical Review also considered issues such as the history of flood events in the region and the surficial geology. The various water control structures were discussed including sections on the Portage Diversion (pp. 49–51) and the FRWCS (pp. 52–55) (Exhibit 26). The water levels on Lake Manitoba and the operation of the FRWCS from 2005 to 2011 were illustrated in the Technical Review (Exhibit 26, Figure 34, page 55, and Appendix 2). This figure shows the 2011 Lake Manitoba level as being in excess of 817.0, while illustrating the FRWCS was operated on a 100 per cent basis with short-term fluctuations downward related to the existence of frazil ice on the Dauphin River.

[26] The Technical Review utilized the following definitions in coming to its causation conclusions (Exhibit 26 at p. 57):

> In this report, the **unregulated**, in relation to water levels, refers to the calculated levels that would have occurred in the absence of all flood control infrastructure, including the Portage Diversion, Fairford River water control structure, Assiniboine River dikes, Shellmouth Dam, and the dams on the

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[1] In 2013, Manitoba released a report entitled, the "2011 Flood: Technical Review of Lake Manitoba, Lake St. Martin and Assiniboine River Water Levels" ("Technical Review").

> Souris River located upstream in Saskatchewan and North Dakota. **Regulated** refers to the levels that occurred and were recorded and thus includes the operation of the aforementioned flood control infrastructure. Artificial flooding occurs when regulated water levels (recorded water levels) exceed unregulated water levels. In other words, artificial flooding occurs when operation of flood control infrastructure causes water levels on a body of water to be higher than they would have been if none of the flood control infrastructure was present.
>
> [Emphasis in original.]

[27] Manitoba, in an effort to calculate artificial flooding, evaluated the unregulated flows by removal of the effect/operation of all water control structures. The water level on Lake Manitoba is measured continuously at two locations, being Steep Rock near the north end of the lake and at Westbourne at the southwest corner of the lake. The recorded lake levels often differ between the two stations, and from day to day, because of wind effects. Consequently, the average lake level is computed by averaging the recorded levels at both monitoring stations over a five-day period. This procedure serves to smooth out most of the wind effects on the lake levels (Exhibit 26, Figure 36, p. 61). Other inflows into the lake, such as the Waterhen River, Whitemud River and overflow from the Assiniboine River were also considered in the Technical Review.

[28] The Technical Review outlined the modifications made to the Portage Diversion in order to increase capacity because of the anticipated 2011 forecasted peaks. The flows through the Portage Diversion channel were increased steadily until peaking at approximately 34,700 cfs on May 14, 2011. This inflow was approximately 10,000 cfs over design capacity. Flows above

30,000 cfs were maintained until May 21, 2011, but peaks above that level were experienced thereafter (Exhibit 26, Figure 46, p. 76, and Appendix 4).

[29] The Technical Review concluded that artificial flooding occurred on Lake Manitoba for a period from June 22 until August 30, 2011. "The incremental artificial flooding peaked in late July, when the regulated water levels were approximately 0.4 feet (12 cm) higher than the unregulated level would have been at the time, but only 0.3 feet (9 cm) above the peak unregulated level" (p. 107). It was determined that (p. 107):

> The actual effect of the artificial flooding, in terms of incremental damages caused in addition to the damages that would have been caused under unregulated conditions, is unclear. In compensation programs for artificial flooding, property damages or economic losses that are incurred at an elevation below the computed unregulated peak water level are deemed to be due to natural causes since, under unregulated conditions, the water level would have reached that level anyway. In other words, flood damages that occur below the unregulated peak water level were not made worse by artificial flooding. The only exception is if the timing of the artificial flooding is different from the recorded peak and is such that the shift in timing causes damages or economic loss. Further, the south basin of Lake Manitoba actually experienced wind affected water levels during the May 31 storm that were higher than the peak regulated water levels. Therefore, any damages in the south basin are attributable to this earlier, natural flood event.

It is noteworthy that the Technical Review provided a more extensive analysis of the causation issue and other circumstances involving the 2011 flood than normally had been undertaken by Manitoba in the past.

[30] The 2013 Finding the Right Balance Report (Exhibit 24) was prepared as a result of the unprecedented 2011 flood ("Finding the Right Balance: A Report to the Minister of Infrastructure and Transportation" by the Lake Manitoba/Lake St. Martin Regulation Review Committee). The purpose of this regulation review was to determine the need for additional water control works and to evaluate the best

and most practicable range of regulation for Lake Manitoba and Lake St. Martin. There were many meetings held with interested groups, including the Lake Manitoba/Lake St. Martin Committee which included a representative of Government along with the stakeholders of the Lake Manitoba/Lake St. Martin communities. It was recommended that the regulated range be lowered to 810.0–812.0 for a period of five years. This range would serve to maintain natural lake level fluctuations, while also keeping the levels lower. Further, it was recommended that a second channel be constructed between Lake Manitoba and Lake St. Martin that would provide the total outlet capacity to meet the original design criteria for the FRWCS (AECOM was involved in this project). This recommendation was based upon the fact that the diversion had sent significantly more inflows into Lake Manitoba than had been expected by the designers. In 12 of 43 years, the operation of the Portage Diversion had caused Lake Manitoba to exceed the maximum regulated level of 812.87 feet.

IV. THE EVIDENCE

A. Plaintiff's Evidence – Lay Witnesses

[31] There were nine lay witnesses called on behalf of the Plaintiffs. These witnesses included the representative Plaintiffs who, as indicated, are farmers, ranchers, cottagers, recreational property owners and developers. There was a commonality to much of their testimony, as well as differences that will be noted below.

[32] Many of the lay witnesses had long family histories in the area. All of them had paid attention to lake levels over the years, which was usually stable in

the regulated 810.5 to 812.5 range. It was acknowledged that wind could bring up water levels on this large body of water. The lay witnesses all described a wet fall in 2010 with Lake Manitoba rising to the 813.0 level. This was followed by the accumulation of a significant snow pack over the winter months. The only natural outlet from Lake Manitoba was the FRWCS whose operation was thought and expected to be for the benefit of the Lake Manitoba residents. These residents acknowledged that the FRWCS was opened at its maximum level in 2005 and remained wide open into 2011 with the exception of frazil ice concerns.

[33] The lay witnesses were aware that the Portage Diversion was built to accommodate a 25,000 cfs capacity, but was operated during 2011 at an enhanced level of up to 35,000 cfs. The structure was opened on April 1, 2011. The diversion was soon operating at capacity outflow, and, by May 14, 2011, its utilization had been extended to 34,000 cfs. The lake was said by the witnesses to be higher than ever before encountered. While the lake was observed to be rising, no warnings of an impending flood were issued until late April/early May 2011. After those warnings, cattle owners moved their herds, while cottagers and others erected dikes and gabions and did what they could to preserve their properties. The rural municipality provided both bags and sand for the utilization of the area residents. The lay witnesses all attested that there had been no prior flooding to their properties, with only Reginald Schwartz having experienced occassional minor flooding issues. There were repeated requests to close the diversion from the Lake Manitoba residents.

[34] The lay witnesses testified that there are usually spring and fall storms on Lake Manitoba of some severity. The May 31, 2011, storm was testified to have impacted the southern end of the lake, with the storm surge said to have been 5.0 to 6.0 feet higher than during previous storms. As a consequence of the high water level in 2011, significant devastation and extensive damage occurred. In particular, Delta Beach and Twin Lakes Beach were impacted as the wind raised water levels 4.0 to 5.0 feet (817.0 feet). The storm surges knocked down the sandbag dikes, while other utilized abutments were rendered useless. The flooding situation was worsened by the storm and resulted in extensive damage to buildings and dwellings, a loss of crops and fields for two to three years, ongoing soil salinity issues, a loss of trees, debris, erosion, and the compromising of beaches. Water marks on the walls of dwellings were between 12.0 inches and 6.0 feet high. The residents testified that the water continued to rise and advance on their properties all summer and was still on their lands into the fall season.

[35] The flood damage caused significant monetary and revenue loss. These Plaintiffs applied to Manitoba Agricultural Services Corporation ("MASC") for compensation. At the time of their applications, they were not asked whether their losses were occasioned through artificial or natural flooding (The Lake Manitoba Flood Assistance Program, Exhibit 98).

[36] All the lay witnesses testified that the cause of the flooding was Manitoba's prolonged and extensive operation of the Portage Diversion.

- **Bill Finney ("Finney")**

[37] Finney operates a 6,000 acre cow/calf operation on Lake Manitoba. He also grows oats and barley along with native hay for his herd. Finney was a member of the Advisory Committee which had recommended that the lake be regulated between 810.5 to 812.5 feet. That recommendation was accepted by Manitoba. Further, the Committee promoted that the operation of the diversion should be restricted to short term use unless absolutely necessary and not operated past May 31st in any given year.

[38] Finney testified that 50 per cent of his property flooded, and access was terminated to certain areas of his ranch. He said that the May 31, 2011, storm did not alter that situation to any great extent. He was required to relocate his cattle to various other pasture areas, with parts of the herd being one to two hours away from his home (photographs at Exhibit 2). The relocation advice was provided at a late April/early May 2011 meeting when those in attendance were told that the lake would rise to a 815.0 level.

- **Tom Teichroeb ("Teichroeb")**

[39] Teichroeb is a rancher on Lake Manitoba with 5,000 acres of property. He operates a cow calf operation along with crop growth for feeding purposes. Between the time of his year 2000 purchase of the property and 2011, flooding had never occurred on his land. Teichroeb had to move his cattle to six different pastures, with some up to 100 minutes away from his home. He lost approximately one per cent of his herd because of access issues. Fifty to 60 per cent of his property experienced flooding which resulted in a two-year

revenue loss (Exhibit 3, photographs). Further, storms, such as the May 31, 2011 event, were testified as not being an unusual occurrence.

[40] Teichroeb attended a meeting in Langruth, Manitoba, on June 1, 2011, where the then provincial Minister of Agriculture Stan Struthers and other government officials spoke. Minister Struthers advised those at the meeting that Manitoba would take responsibility for the consequences of the diversion's operation which had put "more water in your backyards" (Exhibit 17, Tab 2, p. 1, lines 18 and 19). Teichroeb understood from the meeting that Manitoba was taking responsibility and would afford compensation. In March 2012, Teichroeb and others became aware that Manitoba's position had been altered to reflect that the 2011 flooding was being regarded as a natural occurrence and not caused by the diversion's operation. This was referred to by Teichroeb and others as the "big lie".

- **Shaun Moran ("Moran")**

[41] Moran, along with his family, own 12,000 acres on Lake Manitoba – substantially in the Delta Marsh area. The Moran farm includes grain crops with two fields seeded right to the shore line. That area had never before experienced overland flooding. Moran testified that the Portage Diversion flowed over capacity for months and the flow would take three to four days to run out through the FRWCS. The fields of the Moran properties were covered 0.75 to 1.5 miles inland. Two to three years passed before these fields returned to normal productivity (Exhibit 4).

[42] The three Moran family cottages at Delta Beach had never before been damaged. However, one was demolished by water action in 2011, with two others experiencing flooding damage. The erected 3.0 feet high gabions and 5.0 feet of sandbags did not save the cottages. Storms were not uncommon in the area, albeit the water would rise only briefly and cause some erosion.

- **Reginald Schwartz ("Schwartz")**

[43] Schwartz operates a 1,000 acre crop, leaf cutter and bee operation on Silver Bay on Lake Manitoba. He testified that storms had never before caused significant flooding, with only 20–30 acres of his property occasionally being compromised in the past. In 2011, the water was said to have come up 1.5 miles inland in places and in areas never before experienced. This occurred throughout the summer as the waters continued to rise (photographs, Exhibit 6).

- **Scott Greenlay ("Greenlay")**

[44] Greenlay had previously been employed with Natural Resources (and had worked with Steven Topping ("Topping"), one of the defendant's witnesses in this action). Greenlay was aware of the history and utilization of the Portage Diversion. He owns a Delta Beach cottage and chaired the Delta Beach Association. It was his expectation that the diversion would be used in emergencies to protect Winnipeg, albeit he had observed that its use had been expanded over the years.

[45] Greenlay spoke with Topping regarding the high lake water levels in 2010 and says he was assured there was nothing to be worried about as the lake would be drawn down during the winter. (These assurances were denied by

Topping.) It was anticipated that the FRWCS would be fully open which would drop the lake level by approximately 1.0 foot. Greenlay took comfort in those assurances and reported them to the Delta Beach Association.

[46] Manitoba raised no alarms of possible flooding with the area residents until April 2011. Greenlay erected gabions in front of his cottage to a level of 818.0 feet. Others in the area constructed wooden or concrete barriers. He indicated that in May 2011, sandbags were provided and a ring dike was erected around his property to a height of 822.0 feet. The water remained outside the gabions at the time of the May long weekend. However, as of May 31, 2011, all area residents were evacuated until the fall. Storms such as occurred on May 31, 2011, were frequent in the past and as severe, albeit the lake levels had never been as high. Upon returning on June 1, 2011, to review the area, Greenlay noted devastation and extensive damage, including to his own cottage. He opined that Manitoba had undertaken few or no measures to protect those around Lake Manitoba, as the occupied territory was quite small. The damage was testified to have continued throughout the summer.

[47] Greenlay testified that in 2012, Manitoba's representations "changed in tone" as it began referring to the 2011 flooding as a natural occurrence. A presentation was made by Greenlay to the Lake Manitoba/Lake St. Martin Regulatory Review Commission on behalf of the Association of Lake Manitoba Stakeholders (Exhibit 7) on the flooding and the significant consequences experienced.

- **Keith McDermid ("McDermid")**

[48] McDermid's family owned the Sunshine Campground at Twin Lakes Beach. The property included trailer sites, a store, playgrounds, docks, and the family home (over 5.5 acres). As a consequence of the flooding and the May 31st storm, all that was left was a boat launch (Exhibit 8). He testified that the water rose by 3.0 feet. No flooding had occurred in the area before 2011, nor had damage been occasioned from storms. The elevation of the campground was 815.0–816.0 feet; however, the family was told by Manitoba in May 2011 to begin sandbagging the shoreline of the property. A further 2.0–4.0 feet was sandbagged, without avail, as extensive damage occurred with some water marks on buildings being 6.0 feet high. It was McDermid's view that if the lake had been at a regulated 812.0 feet level, the damage, because of the storm surge, would not have happened. The rural municipality bulldozed all structures on the property. The campground has never reopened because of a lack of funding (Exhibit 8).

- **Greg Hamilton ("Hamilton")**

[49] Hamilton owns a Lake Manitoba cottage and had two cottage developments on the lake (Exhibit 9). He purchased his cabin in 2005 and was 150.0 feet from the shore. His land extended for 2.7 acres. In the past, no damage had been occasioned to his property from flooding or storms. Sandbagging was undertaken to protect the cabin to a 817.0 level, with eight to 10 sump pumps operating on a constant basis. The cabin remained dry until the

third week of June 2011, when ground waters invaded. The water flow continued into August 2011 and was 18.0 inches high in the cabin.

[50] Hamilton's development properties had not previously experienced flooding; however, Hawthorn Beach was 80 per cent flooded and, consequently, garnered little or no interest from prospective purchasers. The same occurred at the Dockside Cove development which was abandoned (Exhibit 9).

- **David Metner ("Metner")**

[51] Metner has lived 1.5 miles from Lake Manitoba for his entire life. In 2011, the lake was higher than he had ever previously observed. He purchased property for a cottage development in 1978/79. The Dolly Bay Resort began in 2008/09 with 78 cottage lots advertised. Again, that area had never before flooded. Four lots had been sold by 2011 and one cottage built at an 816.6 feet level. In May 2011, MASC had called a meeting to advise that the water level was likely to rise above the 814.0 flood stage. His properties were flooded and the water continued to rise into early July 2011. The water stayed at the 816.0/817.0 level into August 2011, and it was not until 2013 that the area dried (Exhibits 10 and 11).

[52] Metner testified that other storms had been as severe as that on May 31, 2011, but Lake Manitoba had never before been at the same high water level during these storm events. Consequently, little or no damage had previously been experienced.

- **John Howden ("Howden")**

[53] Howden owned a cottage at Twin Lakes Beach. He was a member of the Twin Lakes Beach Association, which had registered concerns over the lake level in late 2010 and in 2011. By February 11, 2011, he, along with his neighbours, had built a rock wall, which was 4.0 feet above the regulated Lake Manitoba level at 816.0 to protect his property. These were massive boulders, but, as May 2011 approached, a sandbag dike was also erected. Ultimately, his cottage was damaged and condemned with water coming in for the entirety of the summer (Exhibit 12).

B. Plaintiffs' Evidence – Expert Witnesses

- **Wim M. Veldman ("Veldman")**

[54] Veldman was qualified as an expert witness in the area of water resources dealing with hydrological issues. He is an accredited engineer with a specialty in water resources (Curriculum Vitae, Exhibit 14). Veldman authored a report dated May 22, 2020, and a reply report dated January 25, 2021 (Exhibit 13, Tabs 1 and 2), wherein an analysis of the 2011 operation of the Portage Diversion was undertaken. Veldman opined that the record high water levels on Lake Manitoba in 2011 were the result of:

1. high natural inflows from the Waterhen River in both 2010 and 2011;
2. Lake Manitoba water level in 2010 was already near the "Maximum Regulated Water Level" of 812.87 feet;
3. the high 2011 natural inflows from the Waterhen River, as well as other small tributaries. This was one of the causes of the Lake Manitoba

water levels being in excess of the "Maximum Regulated Water Level" of 812.87 feet and the Flood Stage of 814.0 feet;

4. the recorded Portage Diversion flows in 2011 increased the peak Lake Manitoba water level from 814.38 feet to 817.24 feet (May 22, 2020, report, pp. 1–2).

Consequently, the causes of the flooding were attributed by Veldman to high natural inflows into Lake Manitoba accompanied by the record high and long duration of Portage Diversion inflows into the lake.

[55] Veldman's testimony addressed one of the primary issues to be determined, being the divergence between the Plaintiffs' and Defendant's positions on artificial flooding as a consequence of the operation of the Portage Diversion. This issue involves the calculation of unregulated/regulated water levels on Lake Manitoba and whether certain water control works should be included in or excluded from those considerations. In Veldman's opinion, in order to determine whether the inflow through the Portage Diversion caused the Lake Manitoba flooding, the outflow operation of the FRWCS would not be removed from the calculations.

[56] Manitoba takes the position that the "unregulated" water level of Lake Manitoba is what would have occurred but for the presence and operation of all flood control infrastructure affecting the water level. This includes the Portage Diversion, FRWCS and channel enhancements, the Shellmouth Dam, the Assiniboine River dikes, and the Souris River Dams. Veldman (and the Plaintiffs) opine that the appropriate methodology of computing the unregulated water level

should reflect the subtraction of the amount of inflow solely attributable to the Portage Diversion from the Lake Manitoba water level. This, consequently, facilitates inclusion of the continuing outflows through the FRWCS. In Veldman's view, there is a need to account for the operation of the FRWCS as its existence goes back to the 1890s when a channel was dug to allow flow from Lake Manitoba through to the Fairford River. A structure was put in place in 1934 with its significant expansion transpiring in 1961. That expansion recognized the possibility of the construction of the Portage Diversion. The FRWCS was designed to account for the historic flows into Lake Manitoba from the Assiniboine River with the existence of the Portage Diversion and natural conditions in mind.

[57] Veldman opined that (Exhibit 13, Tab 2, p. 4):

> The Portage Diversion increased the peak Lake Manitoba water level, without wind effect, from 814.4 feet to 817.0 feet, an increase of 2.6 feet. For the period from April 15, 2011 to early 2012, the Portage Diversion caused artificial flooding on Lake Manitoba, that is above the Flood Stage.

Further, he testified that, without wind effect, 97 per cent of the flooding that occurred was attributable to the operation of the Portage Diversion (4.7 million acre-feet of inflow). Veldman asserted that wind setup affected water levels, particularly in the south west portion of the lake. At the time of the May 31, 2011, storm, the water level prior to and after the storm as measured by the Westbourne gauge, was 816.0 feet. The storm's affect was of short duration – a matter of hours. The peak water level at the gauge was 818.0 feet on May 31, 2011, indicating a wind setup of 2.0 feet, albeit those levels were highly variable

(60 km/hour to peak of 90 km/hour wind speeds). Utilizing a wind setup formula, Veldman calculated that wind setup of about 3.0 feet transpired in the southern beach areas. Veldman acknowledged that higher water levels had been reported by area residents. Those reports could be reflective of wave run-up rather than steady peak water levels caused by wind setup. The wind setup levels for the beaches in the south-east quadrant of the lake were 816.95 feet and 819.13 feet. The percentage of flooding attributable to the Portage Diversion as a result of the May 31, 2011, storm was calculated by Veldman to be the determination of the damages sustained to properties in the ranges of 816.9 feet to 818.4 feet. It was also noted that water levels continued to rise throughout the summer months in 2011. The lake was raised 2.6–2.8 feet as a consequence of the Portage Diversion's operations. This amount of inflow into Lake Manitoba was four times greater than had been experienced in 1976.

[58] Veldman opined that the FRWCS was never designed for the volume of flow experienced as a result of the 2011 diversion's operation. The detailed calculations of the Portage Diversion's impact, with and without the FRWCS, were analyzed in the 1958 Report. Veldman noted that the lake level had never exceeded 813.0 feet in the past, a very different scenario than that which had occurred in 2011. This analysis was well set out in a table in Veldman's reply report, dated January 25, 2021, at p. 3 (Exhibit 13 and Appendix 6). In the event the lake had stayed between a range of 811.0 and 813.0, the FRWCS could have handled the outflow for a short period of time.

[59] Veldman opined that the Lake Manitoba area experienced flooding (above 814.0 feet) for 260 days because of the operation of the Portage Diversion. Flooding conditions would have lasted 60 days without its operation. He also testified that Manitoba's position that the May 31, 2011, storm had caused the vast majority of the damage was not a valid or substantiated conclusion. The storm was of short duration with high water levels persisting thereafter because of the significant and continuing Portage Diversion inflows.

[60] Veldman also opined that Manitoba's decision to fund a one-half billion dollar project to enlarge the outflow from Lake St. Martin in an effort to minimize the impact of future flooding events demonstrated a belief that what had transpired was a man-made disaster.

- **Dr. Reinaldo Garcia ("Dr. Garcia")**

[61] Dr. Garcia was qualified as an expert in environmental water resources. He holds an engineering degree and is proficient in computer modelling, development and applications (Curriculum Vitae, Exhibit 16). Dr. Garcia's May 22, 2020 report and reply dated January 25, 2021 (Exhibit 15, Tabs 1 and 5), assessed causation for the 2011 Lake Manitoba flooding as being inflows through the Portage Diversion. In his opinion, Manitoba's position is in error when evaluating the effect of the inflow into Lake Manitoba using the Portage Diversion. Manitoba was said to have utilized a simulation model to evaluate two different scenarios: one being the operation of all existing control works, and the second being the removal of both the Portage Diversion and the FRWCS. In his view, excluding the FRWCS served to (Exhibit 15, p. 4):

... create a bias toward higher elevations on the lake. For instance, if we consider in Figure 1, the period from 2004 to 2010, we see that the observed levels are about 2 ft below the unregulated scenario. That indicates that the Fairford River Structure has a significant impact on reducing Lake Manitoba levels and should have been included in the analysis to assess the effect of the Portage Diversion. The effect of the Fairford Structure has been corroborated in several studies. For instance, Exhibit K indicates on page 6. *"Over the last few years, excluding the flood of 2011, Lake Manitoba would have been 1.5 to 2 feet higher on several occasions and would have flooded extensive areas were it not for the control structure."* All of this suggests that it does not make sense to exclude the Fairford Structure to analyze the effect of Portage diversion during the flood of 2011.

Although there is no universally accepted definition for the *Unregulated* term, it is generally interpreted as a condition where the system flows occur without man-made alterations nor hydraulic regulation structures. That is an unrealistic condition since it would involve removing all urban and man-interventions that have been made on the Lake Manitoba watershed, which govern runoff. The key point here is to understand if the Portage Diversion was or was not a determining factor in the flooding. Therefore, the issue is not to consider regulated vs. unregulated conditions, but to assess lake levels with the Portage Diversion vs. levels without the Portage Diversion. Scenarios removing the Fairford structure do not make sense since that will inevitably lead to increased water elevations in Lake Manitoba, and consequently would be biased. Also, from a purely logical point of view, to assess the effect of the Portage Diversion on the 2011 flooding, it is necessary to consider only one single factor and whether it leads to either true or false outcome. In other words:

1. Existing conditions at the time of the 2011 event WITH the Portage Diversion.

2. Existing conditions at the time of the 2011 event WITHOUT the Portage Diversion.

Since Lake Manitoba is a multiple dependent system, including other factors together with the Portage Diversion, would be misleading, because one would never know if the resulting lake elevations would be due to the other factors different from the Portage Diversion influence.

Comparing lake elevations from the two scenarios outlined above would help to estimate the real effect that the Portage Diversion had on the 2011 Manitoba flooding.

The Technical Report: *2011 Flood: Technical Review of Lake Manitoba, Lake St. Martin, and Assiniboine River Water Level*, states that "The total volume added to Lake Manitoba by the overflows from the Assiniboine River would have been approximately 402,000 acre-feet" (See MIT 2013

> report Reference 13, pag. 95) and that the actual volume diverted into Lake Manitoba through the Portage Diversion was 4.73 million acre-feet. This indicates that the actual diverted volume was indeed 11.77 times bigger than the unregulated overflow in 2011.
>
> [Emphasis in original.]

[62] Dr. Garcia calculated that the Portage Diversion's operation had raised the level of the lake by 3.34 feet to 817.34 feet. He also considered the effect of wind setup, particularly as experienced in the southern portion of Lake Manitoba. A wind setup calculation considers wind speed to be the distance along the lake surface over which the wind exerts a force on the water, and the minimum wind speed duration required to generate the setup. It is necessary to consider a sustained wind speed acting over a given fetch for a minimum time. Despite what transpired on May 31, 2011, Lake Manitoba water levels remained very high throughout 2011 with lake elevations exceeding those recorded on May 31, 2011, for more than three months. Indeed, the water level of Lake Manitoba continued to rise until the end of July 2011, and, by year end, remained close to flood stage. Dr. Garcia attributed the cause of flooding to be a combination of natural and man-made causes. However (Exhibit 15, p. 8):

> ... the effect of the Portage Diversion was overwhelming leading to an increase in the water level of 3.04 ft and an increment of the inundated area of 296,108.30 acres, which suggests that the diversion flow caused a significant percentage of the flooding.

Dr. Garcia opined that if the Portage Diversion had been closed, Lake Manitoba would have been 2.0 feet lower on May 31, 2011. Accordingly, the storm would not have impacted the area to the same degree. Further, the damage was not

isolated to the May 31, 2011 event, as the lake continued to rise (May 22, 2020, report, Exhibit 15, p. 7):

> ... the time extent of the 2011 Lake Manitoba event suggest that flooding remained at very high levels overwhelming the possible effect of May 31 -winds... It is clear that the lake elevations exceeded those recorded on May 31 for the complete period more than three months comprising June, July, August and part of September 2011.

Dr. Garcia took issue with Manitoba's method of calculation, which excluded the FRWCS structure. He considered that to be a "biased" opinion, as it served to increase water elevations on Lake Manitoba and distorted the effect of the Portage Diversion on 2011 flooding.

C. Defendant's Witnesses

- **Steven Topping ("Topping")**

[63] Topping's expertise is that of an engineer with a specialty in water resources (Curriculum Vitae, Exhibit 25). He was employed with Manitoba from 2006–2017, and was significantly involved in Manitoba's response to the 2011 flood. He was qualified as a participant expert. Topping's division/technical team were involved in authoring the Technical Review (Exhibit 26). Topping testified with respect to the flood control infrastructure in existence in southern Manitoba (p. 43). The gist of his explanation is largely covered at pp. 1 and 2 of the Technical Review as follows:

> Manitoba operates a number of flood control structures, which provide flood protection on the Assiniboine River and Lake Manitoba. The Shellmouth Dam on the Assiniboine River, along with dams on the Souris River, located upstream in North Dakota and Saskatchewan, serve to reduce peak flows on the Assiniboine River by holding back flows. The Portage Diversion diverts flows form the Assiniboine River to Lake Manitoba, lowering flows on the Assiniboine River but raising water levels on Lake Manitoba. Dikes and embankments on the Assiniboine River raise

> the channel capacity of the river, reducing overflows and consequently allowing for higher flows downstream on the river. Finally, enhancements to the outlet of Lake Manitoba constructed as part of the Fairford River water control structure allow higher than natural outflow from the lake, allowing artificial lowering of water levels on Lake Manitoba but artificially increasing inflows to Lake St. Martin.

The Portage Diversion was described by Topping as a 20 kilometre channel with a 25,000 cfs capacity to divert water from the Assiniboine River into Lake Manitoba. This diversion serves to protect Portage la Prairie and communities downstream, including the City of Winnipeg and is integrated with the Red River Floodway. The Assiniboine River dike system is approximately 100 kilometres in length commencing at Portage la Prairie and is a necessary flood control measure as the river is higher than the prairie in certain areas. The diking improved the capacity of the river to handle 22,500 cfs in 1976; however, a geotechnical issue in 2011 allowed only an 18,000 cfs capacity to flow without breaches occurring. Topping testified that in 2011, there was significant rainfall and three independent peaks of the river. It was determined by the Manitoba team that there were 18 sites along the Assiniboine River that were vulnerable to possible breach occurrences. Clearly, if the Assiniboine River had been able to facilitate a greater volume of water, the situation for Lake Manitoba would have been improved. Issues such as wind and wave action, along with topography also affected the water levels.

[64] The Advisory Committee reported on the regulation of water levels and related issues on Lake Manitoba and along the Fairford River, Lake Pineimuta, Lake St. Martin, and Dauphin River (Exhibit 23). In that report, the stakeholders

of the involved areas had indicated a desire for varied ranges of Lake Manitoba water level regulation. Those with interests in land, shoreline and marshes had different concerns from those of commercial fishers, ranchers and others. The cottagers were said by Topping to be divided on the issue of water levels, with those in the south at Twin Lakes Beach and Delta Beach feeling that the target level of 812.17 feet was too high and would contribute to erosion conditions, particularly during storms. Their preference was a level at 811.5 feet. In the end, the report recommended what was described as a more natural range of between 810.5 and 812.5 for regulation purposes. Topping attested that the levels of Lake Manitoba had been trending upward since 2005.

[65] Topping prepared a document referenced as "Background and Rationale for Emergency Measures Taken to Lower Water Levels on Lake Manitoba and Lake St. Martin" (undated) (Exhibit 27). This included an analysis of why water levels were so high in 2011, with the soil moisture conditions prior to the 2010 freeze-up being 205 per cent above average, along with an October 26, 2010, storm which was referenced as a "weather bomb". That storm had persistently strong winds from the north and north-west along with wide spread rains which continued over three days. The snow pack was deep in many areas during the winter months along with above-average precipitation in the spring of 2011. The provincial Cabinet was said to have authorized flood protection spending, which included dikes being raised, the Shellmouth water structure being drawn down to its lowest level ever, and the FRWCS being operated at its maximum capacity (with the noted exception that it was not at maximum from mid-November into

February because of frazil ice) (Technical Review, p. 55, Exhibit 26). At the beginning of 2011, Lake Manitoba levels were at 812.5 feet with the FRWCS operating at three times its natural capacity.

[66] Commencing January 24, 2011, the Hydrologic Forecast Centre commenced its spring flood outlook forecasts (Exhibits 29, 31 and 33). Those forecasts outlined matters such as climatic conditions, soil conditions, spring run-off, river forecasts and other issues. Topping testified that the flooding forecasts showed deteriorating conditions which appeared to be pointing towards a flood disaster for the City of Winnipeg. The Assiniboine River was already at a historically high level (Exhibit 30). As time progressed, daily flood sheets were generated with 130 observation points being followed. This information was provided by Manitoba to the rural municipalities and to the public at large. As a consequence of the conditions, ring dikes were closed and dikes were reinforced in an attempt to minimize damage.

[67] Topping testified that he determined, after consultations with his team and the Deputy Minister of Conservation and Water Stewardship ("the deputy minister"), how much water was to be diverted through the Portage Diversion into Lake Manitoba. AECOM, an engineering consulting firm, and its consultant Eric-Lorne Blais ("Blais"), was engaged to assist the Manitoba team. Topping described the work done in the spring of 2011, as including daily flood reports and the determination of methodologies to fight the mounting flood crisis. It was soon realized that water down the Assiniboine River could only be run at approximately 15,000 cfs, while the Portage Diversion was already close to its

maximum flow capacity on April 2, 2011 (a day after its opening). Further, four major storms had occurred, with an additional one on its way. All water control structures were fully operational, with the Portage Diversion flow increased to nearly 34,000 cfs.

[68] Topping and his team decided that a controlled breach was needed at the Hoop and Holler Bend of the Assiniboine River, just east of Portage la Prairie. The breach was required to thwart the threat of an uncontrolled breach downstream in the highly developed reaches of the Assiniboine River. A cut was made in the dike at the Hoop and Holler Bend, and kept open between May 14 and May 20, 2011. The controlled breach released 2,000–4,000 cfs of water onto adjoining lands. Those persons adversely impacted by this breach were fully compensated (Exhibit 49) – unlike the Lake Manitoba stakeholders. Topping acknowledged that the volume put through the Portage Diversion in May 2011 was greater than ever before accomplished, with significantly more to come. Further, Manitoba was aware in March 2011 that the flooding forecasts indicated a flood of historic proportions.

[69] Topping had continual communications with his team throughout these events, much of which was accomplished through e-mail exchanges. In and around May 17 and 18, 2011, communications took place on the need for flood protection measures for Lake Manitoba. Topping indicated, in an e-mail, that the wind setup levels around the lake were 817.0 to 818.0, which did not include wave uprush. In those circumstances, with a shore topography like Twin Lakes

Beach, a wave uprush could result in an additional 3.0–4.0 feet water height (Exhibits 35 and 36).

[70] The May 31, 2011, storm saw 60 kilometres winds, gusting up to 80–90 kilometres, being experienced over a 12 hour period. Topping testified that waves were 5.0 to 7.0 feet high with a 2.0 to 3.0 foot wind setup. It was determined that the wave uprush resulted in 822.0 to 824.0 feet water levels in certain areas on the southern part of the lake. Topping also testified that there were washed out roads, flooded areas, and devastation. The May 31, 2011, storm was not as significant in intensity as the October 26, 2010 "weather bomb", albeit Lake Manitoba was at a lower water level at that time.

[71] There were three independent peaks of Portage Diversion flows in 2011 with the volume of water diverted into the lake totalling 4.7 million acre-feet. This was well above design capacity (Exhibit 26, p. 76). That said, Topping testified that Lake Manitoba in the fall of 2010 was 2.0 feet below its natural state because of the FRWCS. He said that it was 1.0 foot below its natural state on May 31, 2011, because of the operation of that water structure. Further, the Waterhen watershed was opined to have contributed more water than the Portage Diversion to Lake Manitoba – being 4.0–6.0 million acre-feet.

[72] Topping testified that he and others received e-mail communications from the deputy minister on June 3 and 5, 2011, to explore whether the devastation caused by severe flooding on Lake Manitoba was a natural or man-made disaster (Exhibits 39 and 40). This was opined to be the most controversial issue arising from the 2011 flood season as home and cottage owners, farmers, and business

interests around the lake contended that the flooding was caused by the water inflow from the Portage Diversion and the failure to operate the FRWCS at a higher outflow throughout the winter. The controversial issue obviously related to compensation and/or the level of compensation that might be provided with respect to artificial flooding (the incremental difference between a regulated and unregulated state). Topping acknowledged during his testimony that he had received many communications from concerned property owners in the area and had afforded explanations as to what was transpiring in terms of the operation of the water control structures and the conditions on Lake Manitoba (Exhibits 56 and 57). He also indicated that he was never instructed by Manitoba on how to respond to the various constituents who made inquiries. Topping described what had occurred as a one-in-350 year flood event.

[73] The controversial issue of man-made versus natural disaster continued to be discussed with the deputy minister and Topping's team through e-mail exchanges (Exhibits 40, 42, 43, 44, 45, 46 and 47) commencing in early June 2011. These e-mails were concentrated on what Topping considered to be a need to be responsive to the Lake Manitoba stakeholders. This included the preparation in June 2011 of a document titled, "2011 Lake Manitoba Flooding: A Natural or Man-Made Disaster?". The issue under consideration was whether the flood control system operated to worsen the conditions for the Lake Manitoba interests. The determination reached by Topping and his team was that the diversion had not adversely impacted the Lake Manitoba property and business owners. Instead, the flooding was attributed to natural conditions. In part, this

communication was also authored to respond to an article written by Scott Forbes ("Forbes"), a behavioural ecologist and Twin Lakes Beach cottage owner, which was published in the Winnipeg Free Press (Exhibit 58). Forbes articulated the position that the causes of the flooding damage were extraordinarily high river levels and heavy rain fall, along with the operation of the Portage Diversion. Forbes stated that the diversion had functioned far in excess of its maximum capacity which overcame the ability of the FRWCS to handle the outflow. He indicated that the diversion's inflow of 4.0 million acre-feet of water doubled the normal annual input into the lake in just four months. Forbes attributed a 2.0 feet rise in the level of Lake Manitoba as being the result of the Portage Diversion's operation. Richard Bowering, a member of Topping's team, authored the response to the Forbes's article.

[74] Topping prepared a PowerPoint report entitled, "Background and Rationale for Emergency Measures Taken to Lower Water Levels on Lake Manitoba and Lake St. Martin" (Exhibit 27), which mirrored aspects of the Technical Review (Exhibit 26). The purpose of the PowerPoint report was to provide information on the unregulated water levels on the identified waterways and to determine if artificial flooding had transpired. (It is noteworthy that the PowerPoint report inaccurately stated that 3.0 million acre-feet had flowed through the Portage Diversion instead of 4.7 million acre-feet.)

[75] Topping testified with respect to the conclusions of the Technical Review. That review had found that the greatest damage to the south basin of Lake Manitoba had been caused by the May 31, 2011 wind storm. He testified that the

lake remained 0.50 feet below the unregulated water level and that minimal artificial flooding had transpired, being 0.30 feet between June 20 and September 1, 2011. He accepted, however, that in January 2012, the lake had remained over flood level. Topping conceded the following inflows had gone through the Portage Diversion at his direction:

- April 30, 2011 – 753,000 acre-feet;
- May 31, 2011 – 2,223,000 acre-feet;
- June 30, 2011 – 3,852,927 acre-feet;
- In Total – 4,733,937 acre-feet.

The May 2011 figure alone represented the largest amount ever put through the diversion, well exceeding the 1976 total inflow of 1.4 acre-feet.

[76] Topping acknowledged that 2011 was challenging and choices had to be made. There was simply too much water and, accordingly, the diversion needed to be operated in the manner undertaken.

- **Richard J. Bowering ("Bowering")**

[77] Bowering was qualified as a participant expert with expertise in engineering, including a specialty in water resources (Curriculum Vitae, Exhibit 60). He was employed by Manitoba from 1969 until his retirement in 2005. He had been involved in the Advisory Committee report (Exhibit 52). At the request of Manitoba, he returned in 2010 to assist with advice, flow modelling and forecasts in anticipation of the flood event. He was performing many of the same tasks as the AECOM consultant, Blais. In 2012, both individuals were consulted as to whether the Lake Manitoba experience was a natural versus man-made

situation. As part of Bowering's forecasting function, it was necessary to determine perspective flows, dike capacity, the amount of water to send down the Assiniboine River, as well as the volume through the Portage Diversion. The forecasts were undertaken every few days. It was determined that 18,000 cfs would be sent down the lower Assiniboine River. The more substantive volume was to be diverted into Lake Manitoba.

[78] Bowering was part of a group seconded by the deputy minister to deal with the controversial flooding issue of man-made versus natural disaster initially raised on June 3 and 5, 2011 (Exhibits 39 and 40). The issue was evaluated by Manitoba in the absence of the operations of all water control structures in order to access the impact of the Portage Diversion inflows on Lake Manitoba flooding. Further, the May 31, 2011, storm required consideration in evaluating the flooding impact. In those circumstances where artificial flooding transpires, 100 per cent compensation must be afforded. The impact of water control structures was said to be a water management tool.

[79] Bowering undertook a historical review as to whether the impact of the Portage Diversion was considered when the 1961 FRWCS enhancements were designed (Exhibit 41). He testified that, in his opinion, the original purpose of the FRWCS was to prevent flooding of area farmlands. However, the design took into account volumes that might, from a historical perspective, be expected through the Portage Diversion. Further, during the course of his testimony, Bowering acknowledged that the flow into Lake Manitoba of 4.7 million acre-feet in 2011 was almost 10 times the volume previously put through the diversion

(Exhibit 67). The water was diverted to preserve properties east of Portage la Prairie with the Lake Manitoba property owners being sacrificed, and particularly those surrounding Lake St. Martin. Bowering was aware that Lake Manitoba residents felt unfairly treated, albeit in his view they failed to acknowledge that Lake Manitoba was said to be 1.8 feet below its natural level. He did not accept the argument that they, like those impacted by the Hoop and Holler Bend breach, should receive 100 per cent compensation. Bowering opined that the FRWCS operation should not be included in the calculation of the natural/unregulated lake level. He acknowledged that on June 12, 2011, artificial flooding had commenced at 0.15 feet above the unregulated water level. Bowering had prepared a response to the Forbes article for publication in the newspaper, which substantially reflected the position taken by Manitoba. (Exhibit 45)

[80] Bowering testified that the Portage Diversion ceased operation on August 5, 2011. Further, the FRWCS was noted to have been wide open since 2007, with the exception of short-term reductions because of frazil ice issues. Bowering was involved in the Technical Review and the consideration of what the unregulated level of Lake Manitoba would have been without the water control structures in place. This included a consideration of whether or how much Lake Manitoba was artificially high as a result of the operation of the Portage Diversion. Bowering testified that, prior to the Technical Review, no calculations had been done as to how much inflow would have occurred into Lake Manitoba without the operation of the Portage Diversion. Bowering's testimony was that

artificial flooding had occurred, and was 3.0–3.5 inches with the water staying up until the end of August 2011 (Exhibit 26, pp. 101–102). He also made a presentation to, and was involved in, the Lake Manitoba/Lake St. Martin Regulation Review Committee which authored a report in February 2013 titled, "Finding the Right Balance: A Report to the Minister of Infrastructure and Transportation" (Exhibit 24).

[81] Bowering articulated that without the utilization of the Portage Diversion and FRWCS in the years 2006–2010, there would have been flooding occasioned on Lake Manitoba. In the past, those water control works had prevented flood damage. Bowering recognized that the residents had requested the closing of the diversion; however, the volume of water was simply too great, and the impact on those communities east of Portage la Prairie would have been too severe to permit closure.

[82] Bowering's position was that the Lake Manitoba area would have flooded in any event with or without the operation of the flood control structures. The decision made with respect to the operation of the Portage Diversion was for the benefit of all Manitobans. He acknowledged that the inclusion of the 4.7 million acre-feet of water into Lake Manitoba was the most significant volume ever diverted. In 1976, the volume diverted was 1.42 million acre-feet which served to raise the lake level by 10.0 inches. Bowering testified that a similar calculation for 2011 at 4.7 million acre-feet resulted in raising the lake level 3.3 feet. Bowering was unaware of whether there was any political interference on the

issue of whether the flooding should be evaluated as a man-made or a natural disaster.

- **Christian Propp ("Propp")**

[83] Propp is a hydrologic services engineer who has been employed by Manitoba since August 2015 (Curriculum Vitae, Exhibit 95). He was asked to review Veldman's report and, again, was qualified as a participant expert in these proceedings. Issues such as wind setup were also evaluated in his report. It was concluded that Veldman's results without the Portage Diversion at 816.71 feet were in conflict with the observed wind setup of 818.46 and as set out in the Technical Review at 819.09 for Twin Lakes Beach.

[84] Propp had retained Blais to prepare an expert report to respond to those authored by the Plaintiffs' experts Dr. Garcia and Veldman. The creation of that responding report had been publicly tendered without any results. It was not until an invitational tender was extended to Blais in his personal capacity that a responding report was undertaken (retained on November 25, 2020). AECOM had been retained by Manitoba to consult with respect to the flooding event in 2011, with Blais heading that team. Propp and Blais had worked together in the past and it was recognized that AECOM had also been awarded two significant contracts with respect to the Lake St. Martin project, as well as undertaking other government projects (Exhibits 78, 81, 82, 83.

- **Eric-Lorne Blais ("Blais")**

[85] Blais's expertise was attacked by the Plaintiffs on the basis of an absence of impartiality and bias (Curriculum Vitae, Exhibit 95). There was no concern

expressed as to his professional qualifications. He and his report were challenged as a consequence of his 10-year employment with Manitoba from 1981–1991 in the area of water resources, flood forecasting, and as a hydrologist. Further, while employed in the private sector as a consultant with AECOM from 1998-2013, it was noted that many contracts had been awarded to that company and, particularly, a number involving the 2011 flood. These were of some monetary significance. It was noteworthy that 12 of the 15 consulting projects Blais undertook with AECOM were on behalf of Manitoba. Further, he had worked with a number of individuals within the Manitoba staff, or was known to them, such as Bowering and Propp. There was concern raised as regards his impartiality based on certain of the actions taken by him, including an unasked-for April 2012 simulation of regulated versus unregulated conditions on Lake Manitoba.

[86] After a consideration of the case law, and in particular ***White Burgess Langille Inman v. Abbott and Haliburton***, 2015 SCC 23, [2015] 2 SCR 182, and ***Alfano v. Piersanti***, 2012 ONCA 297 (CanLII), Blais was permitted to testify at trial as an expert witness in hydrology, water resources and modelling. The issue of independence and impartiality was found to be a factor to be considered in terms of what weight would be attributed to his evidence. I was not satisfied that his evidence should be rendered inadmissible on a preliminary basis after exercising a cost-benefit gatekeeping function related to reliability. Blais has never previously been qualified by any court as an expert witness, nor has he ever authored an expert report.

[87] As with all the expert witnesses, the issue of artificial flooding, unregulated/regulated water levels and the inclusion or exclusion of certain water control works in calculations was addressed by Blais. He stated that the Plaintiffs' experts' opinions were flawed because of their failure to remove the FRWCS outflows when calculating the water level on Lake Manitoba as caused by the Portage Diversion. This position was based on the premise that when the FRWCS was designed, it considered the impact of Portage Diversion inflows by utilizing historic natural flow data. This was acknowledged by the 1958 report which had reviewed the 1950's flooding impact and need to improve the hydrologic capacity out of the Fairford River structure, which had resulted in the 1961 enhancements. The historical review in 1958 did not anticipate the type of flows that transpired in 2011 – a one-in-400-year event. Blais's conclusion was that the unregulated calculation for the lake would be based on affording no consideration of the operations of the Portage Diversion, FRWCS, or any other water control structures, albeit the Fairford River's natural capacity should have been included as opposed to what was stated in the Technical Review.

[88] Blais had undertaken a simulation of the unregulated level of Lake Manitoba with Assiniboine River overflow as being 816.3 and with no Assiniboine River overflow at 816.1. At the peak, the Assiniboine River overflow was calculated at 816.8 and with no overflow at 816.2, being a small difference from what had been calculated by Veldman. Dr. Garcia had utilized the Westbourne gauge for wind setup calculations, which was said by Blais not to be representative of the area. The St. Laurent gauge was preferable, albeit that

gauge went out of commission early in the day on May 31, 2011. The wind was said to have affected the water level to an extent of 818.5 with uprush to 821.6.

[89] Blais acknowledged that the 2003 Review Report recommended regulated Lake Manitoba levels at 810.5–812.5, after consulting with stakeholders. This was the decided range to protect and consider all interests on the lake. Blais also accepted that the 2003 Review Report indicated that the Portage Diversion utilization should be restricted to those periods that flows rendered it absolutely necessary to protect downstream interests along the Assiniboine River and Winnipeg (p. 23). The primary function of the diversion was to be a short-term flood protection work which minimized discharge of nutrients, sediments, debris and other materials into Lake Manitoba. Blais acknowledged it was known that the diversion would be occasionally activated above its capacity as this event illustrated – utilization of over 126 days with 4.7 million acre-feet of water being flowed into the lake.

[90] Blais authored, along with others, a 2015 journal article titled, "The 2011 flood event in the Assiniboine River Basin: causes, assessment and damages"[2] (Exhibit 86). He testified that he endeavoured to be as accurate and as objective as possible in the article. The 2011 flood was described as (at p. 74):

> ... the Assiniboine River and its tributaries underwent a flood of unprecedented proportions. It was, by several measures, including the computed return period and duration of flooding, a more extreme event than the 1997 Red River "Flood of the Century", and may have been the most severe flood experience in the history of Canada. The 2011 flood was the

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2 Eric-Lorne Blais, Jeremy Greshuk & Tricia Stadnyk (2016) The 2011 flood event in the Assiniboine River Basin: causes, assessment and damages, Canadian Water Resources Journal 41:1-2, 74-84, DOI: 10.1080/07011784.2015.1046139

> largest recorded in the over 100 years that flow records have been kept on the Assiniboine River.

Blais acknowledged that the Lake Manitoba level was 3.2 feet higher than the flood stage and 5.0 feet higher than the upper end of the desired regulated range of 812.5. The flows through the FRWCS were said to be almost two times historic proportions. With respect to the Portage Diversion, the article said (at p. 77):

> The capacity of the flood protection infrastructure was severely tested in 2011, as peak flow rates nearly exceeded the combined capacity of the Assiniboine River downstream of Portage la Prairie and a Portage Diversion channel that had been reinforced to allow flows 40% larger than the design flow.
>
> The operation of the diversion makes Lake Manitoba and its outlet part of the Assiniboine River Basin, acting as a secondary outlet. Lake Manitoba is Canada's 13th largest lake and the world's 33rd largest freshwater lake... The Fairford River is the only outlet from the lake, and it is controlled by the Fairford River Water Control Structure (FRWCS). The control structure and associated channel enhancement works were completed in the early 1960s, and significantly increased the ability to regulate lake levels as they provided more than twice the outflow capacity... at the flood stage elevation of 248.1 m...

[91] The natural causes of the flood and operation of the Portage Diversion were reviewed in the Blais article (at p. 80):

> Prior to the 2011 flood, the annual diversion volumes ranged from zero (diversion not operated) to a high of 1,760,000 dam^3 in 1976, with an average annual volume of 325,000 dam^3, as shown in Figure 9. During the operating period in 2011, the Portage Diversion flow averaged 710 m^3/s over a period of 130 days, peaking at 980 m^3/s in the middle of May. The diversion discharged approximately 5,900,000 dam^3 into Lake Manitoba, accounting for about 50% of the total inflow into Lake Manitoba. This volume was more than 3 times the next highest diverted volume, which had occurred in 1976, and is roughly equivalent to 1.2 m of water over the normal surface area of the lake.

This was calculated to result in the lake being 4.0 feet over normal.

[92] The article indicated that the lake level did not drop below flood level until January 2012. Further, it did not recede to the top of the desired regulated range (812.5 feet) until September 2012. The FRWCS could not keep up with the rapidly rising inflows commencing in April 2011 from natural sources and the Portage Diversion. Blais acknowledged that it was not mentioned in the article that the 2011 flood was naturally caused. Indeed, he testified it was not a natural flood alone and did not agree with the Technical Review on that issue.

[93] Blais gave a presentation in June 2020 to the Canadian Water Resources Association with respect to "The Legacy of Lake Manitoba Regulation on Downstream First Nation Communities: The Failure of Manitoba and Canada to Protect First Nation Interests" (Exhibits 87 and 88). The presentation included comments such as the Portage Diversion diverted water during high flow periods into Lake Manitoba to protect the City of Winnipeg and communities and farmlands east of Portage la Prairie. Further, he acknowledged stating during a question/answer period the following (Exhibit 88, p. 30, lines 22–25; p. 31, line 1):

> When we look at the natural sort of inflows or look at the inflows, what caused this? The Portage Diversion is the main culprit. And it is the main culprit because we had unprecedented flooding on the Assiniboine River.

It was acknowledged by Blais that the Portage Diversion inflow overwhelmed the capacity/outflow while accepting the watershed contributions. Further, in those circumstances where the substantial inflow from the Portage Diversion was removed, the FRWCS could have handled the flows. He accepted that anything above the natural lake level in terms of flooding should be "owned" by Manitoba.

That said, the regulation of Lake Manitoba has saved the area from numerous flooding events over the years. The noted presentation had been posted on the Association's website; however, Blais asked that it be taken down after it was learned that the Plaintiffs' counsel had gained access to it. He also acknowledged that the removal of all water control structures when evaluating lake levels is a water control management tool.

VII. POSITIONS OF THE PARTIES

[94] The positions taken by the parties are (Agreed Statement of Facts, Exhibit 1):

> 8. The parties disagree as to the methodology to be used to answer the common issue of whether Manitoba, by its actions, caused flooding on off-reserve areas surrounding Lake Manitoba in 2011.
>
> 9. The Plaintiffs take the position that:
>
> (1) in order to determine the cause of the flooding, the appropriate methodology to be used is to subtract from the Lake Manitoba water level in 2011, the amount of inflow attributable to the Portage Diversion; and
>
> (2) that the use of the Portage Diversion contributed to an increase in the peak level of Lake Manitoba of between 2.6 and 2.8 feet.
>
> 10. Manitoba takes the position that:
>
> (1) in order to determine whether Manitoba by its actions caused flooding to occur on off reserve areas surrounding Lake Manitoba, the appropriate methodology to consider if and when the regulated water levels of Lake Manitoba exceeded the unregulated water levels;
>
> (2) for the purpose of Manitoba's position, the regulated level of Lake Manitoba is synonymous with the recorded level;
>
> (3) the unregulated water level is defined as the estimated water level of Lake Manitoba that would have occurred but for the presence and operation of all flood control infrastructure affecting the water level. This includes the Portage Diversion,

the Fairford River Water Control Structure ("FRWCS") and channel enhancements, the Shellmouth Dame, the dikes along the Assiniboine River, and the Souris River Dams;

(4) Manitoba's actions caused the regulated water level of Lake Manitoba to exceed the unregulated water level for the period from approximately June 22 to August 30, 2011;

(5) the peak regulated water level exceeded the peak unregulated water level by 0.3 feet on July 23, 2011;

(6) at all times other than the period from June 22 to August 30, 2011, the regulated water level was lower than the unregulated water level.

V. THE LAW OF PRIVATE NUISANCE

[95] The elements of private nuisance were set out by the Supreme Court of Canada in ***Antrim Truck Centre Ltd. v. Ontario (Transportation),*** 2013 SCC 13, [2013] 1 SCR 594, where Justice Cromwell stated:

> [19] The elements of a claim in private nuisance have often been expressed in terms of a two-part test of this nature: to support a claim in private nuisance the interference with the owner's use or enjoyment of land must be both *substantial* and *unreasonable*. A substantial interference with property is one that is non-trivial. Where this threshold is met, the inquiry proceeds to the reasonableness analysis, which is concerned with whether the non-trivial interference was also unreasonable in all of the circumstances...
>
> [Emphasis in original.]

[96] Further, as was said in ***Nerbas v. Manitoba***, 2017 MBQB 206 (CanLII):

> [21] A private nuisance occurs when a person's interest in the integrity, security, enjoyment and use of land is affected. This includes any direct physical intrusion on land that is in the possession of a plaintiff. A private nuisance also includes indirect physical or intangible interference with property and all direct interference that is not physical...
>
> [22] In order to determine whether a substantial interference with land exists, it is necessary to consider whether what has transpired has substantially altered the nature of a plaintiff's property itself or interfered to a significant extent with the actual use that is being made of the property. The interference cannot be minor, trifling or transitory in order to base a claim.

[97] By agreement, the parties restricted their evidence and arguments to the two common issues being causation and substantial interference. The reasonableness analysis will later be addressed by the parties and, hence, that issue will not be dealt with in this decision. What is required is a determination of whether Manitoba, by its actions, caused flooding to those identified interests around Lake Manitoba in 2011 and whether the flooding substantially interfered with the use and enjoyment of the real property interests of the Class.

VIII. CASE LAW

- ***Nerbas v. Manitoba***, 2017 MBQB 206 (CanLII)

[98] This action was brought by farmers and ranchers with lands located in the Assiniboine River Valley, downstream of the Shellmouth Dam and Shellmouth Reservoir. Those plaintiffs were seeking compensation for flood damage occasioned over a number of years, including 2011. The plaintiffs' properties were adjacent to the lowest channel capacity area of the Assiniboine River. They contended that since the construction of the dam and reservoir, their properties had been habitually inundated. It was argued that the duration and magnitude of flooding as a consequence of the operation of the dam was greatly in excess of any natural or unregulated flooding that would have occurred because of spring run-off or unseasonably wet climatic conditions.

[99] The dam was a "designated water control work" pursuant to the ***Act***. The ***Act*** had been amended to include a compensatory scheme with respect to those impacted by the Shellmouth Dam and reservoir's operation. The dam was the subject of consultation with stakeholders who represented many interests relating

to its operational decisions. The Shellmouth Reservoir Regulation Liaison Committee considered issues such as flood control initiatives and the interests of those impacted by the operation of the dam. The claim in question was considered with an appreciation of the statutory authority which functions to protect legislatively approved public activities that are in the public interest and for the public good (the ***Act***, s. 5).

[100] An analysis of what had transpired led to the conclusion that the operation of the dam constituted both a substantial and unreasonable interference with the plaintiff's lands. Artificial flooding was found to have occurred. A private nuisance was proven, albeit with recognition that the dam's operation likely served to lessen the unregulated flood effects in the area.

- ***Henderson v. Canada***, [2008] O.J. 1538 (QL)

[101] Henderson was a cottage owner with frontage on Gull River in Ontario. The Gull River is a reservoir to the Trent-Severn Waterway which was managed by the defendant Parks Canada. Henderson had a dock extending from his property into the river with watercraft attached thereto. In June 2005, a heavy rainstorm struck the area resulting in a significant accumulation of water in the lakes at the upper part of the waterway system. As a consequence, Parks Canada released water from the lakes and allowed it to run downstream through the waterway, including into the Gull River. This increased the water levels in the river, and resulted in flooding to many properties, including that of Henderson. Further, there was an increased velocity of the water flow that served to wash away the Henderson dock and two moored Sea-Doos. The court held:

> 20 **...** Nevertheless, in my view, it is apparent from the trial judge's factual findings that he accepted that the release of water from the upper lakes by Parks Canada caused the increase in water flow and increase in velocity of the water in the Gull River and therefore caused the damage to the plaintiff's property. For example, the trial judge held that "any change in the flow for the plaintiff was the result of the additional rainwater in the larger reservoir lakes north of the plaintiff being released" and that "the additional flow of water to the plaintiff ... was the consequence of the defendant needing to discharge the rainwater that fell in order to prevent damage to the residents further north". The application of common sense leads to the inevitable conclusion that the release of a large volume of water into the river will not only increase the volume of water in the river, but also the velocity at which that water moves...

Further, Justice Molloy stated:

> 22 ... In other words, Parks Canada recognized that the water flow would be increased downstream and that properties might be flooded. However, they had an even bigger problem upstream in the lakes and they chose the lesser of the two evils, in balancing their responsibilities to everyone. That may not make them negligent, as was determined by the trial judge, but it does not change causation. There is a direct causal relationship between Parks Canada releasing water from the upper lakes and the damage to Mr. Henderson's property downstream.

Henderson was successful with respect to his nuisance claim.

- ***Rideau Falls Generating Partnership v. Ottawa (City)***, [1997] O.J. No. 2794 (QL)

[102] The plaintiff sought damages sustained by flooding of its premises in 1992 and 1996 alleging that the defendant's operation of certain flood control structures was negligent and/or created a nuisance. The defendant, each spring, implemented procedures to control Rideau River flooding through a series of dams and channels. The plaintiff owned and operated an electrical power generating plant located immediately below the falls. The defendant undertook an annual spring ice management program which included dynamite blasting in order to avoid the natural sequence of break up and ice jamming at problem points in the river. The evidence demonstrated that the annual ice flush

conducted by the defendant was necessary for the purposes of protecting from serious flood damage approximately 900 residences lying in the flood plain of the Rideau River upstream from the Rideau Falls. This procedure had been adopted in 1887 and was refined from that point to ensure the necessary avoidance of damages to utility lines, bridges, homes and buildings across and along the banks of the Rideau River. Justice Morin held:

> 47 It is clear on the evidence that the defendant deliberately set about on a course of conduct which altered the state of nature which conduct resulted in the flooding of the plaintiff's plant in 1992 and 1996. The flooding caused significant physical damage to the equipment located in the plant. The flooding, on the evidence, was exceptional and would not have been expected had the defendant not deliberately advanced the movement of large quantities of ice to a point where it collected at the base of the Rideau Falls. On all of the evidence there was a substantial and unreasonable interference with the plaintiff's enjoyment of its property. That is not to say that in the overall scheme of things the city acted unreasonably initiating and maintaining the ice flushing program for the greater good of the upstream owners and occupiers of land and the various companies with utilities crossing the Rideau River. However, a reasonable view of the circumstances of this case must dictate that the plaintiff be compensated for the damages suffered in consequence of the defendant's program which was designed to protect others. The plaintiff should not be put in the position of having its rights sacrificed for the benefit of other upstream interests in Ottawa and Vanier.

This decision was affirmed by the Ontario Court of Appeal (1999 O.J. No. 1066 (QL)).

- ***Kerlenmar Holdings Ltd. v. Matsqui (District)***, [1989] B.C.J. 1601 (QL)

[103] The plaintiff sought compensation by way of a nuisance claim for loss of farm income which had resulted from increased volumes of water flowing from the defendant's municipal storm drain systems. The plaintiff's land was part of an area reclaimed from the Fraser River through a system of dikes which were

the defendant's responsibility. As a consequence of urbanization in the area upstream from the plaintiff's land, increased volumes were discharged through the storm drain system into a creek on the plaintiff's property. This resulted in the significant deterioration of the agricultural capacity of that land as a consequence of flooding. Justice Toy found that there had been a substantial increase in the volume of run-off and increased peak flows during spring and summer rainstorms that had caused more frequent flooding on the plaintiff's property. Justice Toy stated (para. 67):

> In my opinion the principles expressed in the Ontario Court of Appeal's judgment in the Scarborough case correctly interpret the law that should applied in the case at bar. Matsqui has known that urbanization in the lands upstream from Kerlenmar's has been causing flooding since the late 1960s, but its efforts to effect major remedial work have been unsuccessful. Since Kerlenmar acquired the lands in 1971, due to the increased frequency of flooding, the agricultural capacity of its lands have been seriously diminished. I am, accordingly, of the view that Kerlenmar has established a cause of action in nuisance against Matsqui.

- ***Bjarnarson v. Manitoba***, [1984] M.J. No. 486 (QL)

[104] In this case, the plaintiff's properties in an area known as the Whitemud River Watershed district, located between the escarpment of Riding Mountain and the western shores of Lake Manitoba, had experienced severe flooding in the springs of 1976 and 1979. The plaintiff sought damages from the defendant alleging both nuisance and negligence as the flooding was claimed to have been the result of the defendant constructing and/or supervising the construction and maintenance of a system of trunk drains through an entire area in order to reclaim farmlands. The plaintiff contended that before this construction transpired, the lands had flooded more easily and more frequently, but the flood

waters ran off within a reasonable period of time so as to permit cropping.

Justice Hewak (as he then was) considered many factors (para. 25):

> 30 Also of significant importance is the fact that the surrounding lands, in their natural state, provided some storage for, or at least retarded, the spring water flow over land or through natural water courses towards the reservoir. That is, grass lands, forest, uncultivated land or natural land surface depressions acted as water storage areas and as a retardant to the surface water flow. This resulted in a reduction of the volume and speed of the arrival of the water at the reservoir. However, once the land was broken and cleared, or ditched for drainage, etc., then natural spring waterflow retardation was lost. The various trunk drains acted to marshall efficiently the run-off waters and direct them in a larger volume and at a greater velocity toward the reservoir. Without a balancing increase in reservoir capacity or overflow from the reservoir to the lake, the water had no other course to follow but to spill over the banks of the reservoir and cover the adjoining lands. That water would then remain on the land until appropriate water adjustment levels were reached.
>
> 44 Obviously the defendant has no control over precipitation, snow fall, temperature or snow melt. If the combination of those phenomenon is such that inordinately high volumes of water are produced in a short period of time, then the resultant damaging effects on the lands cannot be attributed to the defendant. However, if these same volumes of water are supplemented by water drained from surface storage areas, or from reclaimed land, and that combined volume is then directed toward the natural storage reservoir (in this case, the Big Grass Marsh and the Westbourne Bog) through an unimpeded and efficient network of man-made drains so that the arrival speed and volume of the water at the reservoir entrance causes overflow of its banks and flooding of the adjoining lands, then while the contribution to this result cannot be apportioned with any precision, there is contribution nevertheless to the flooding and to the lingering wet. That being the case, the defendant attracts liability in nuisance.
>
> 45 Liability of the defendant to the [*page171] plaintiff can be demonstrated if it can be established that the plaintiff sustained damage from the acts of the defendant, even though the damage may have been shared by other contributing defendants or factors...
>
> 46 In a situation where the defendant is shown to have contributed by his actions to the damages sustained by the plaintiff, the onus shifts to the defendant to prove what portion of the damage should be attributable to his actions as distinct from such other contributing defendants or factors. In some instances this cannot be done with any precision. That is, it may be impossible to define or apportion liability precisely among several contributing sources.

Manitoba appealed the decision without success (1985, M.J. No. 170 (CA) (QL)).

- ***Penno v. Government of Manitoba,*** [1974] M.J. No. 193 (QL)

[105] The plaintiff's property was located near the Souris River, in Manitoba. He was in the cattle raising business and used all of his land for that purpose. He also cultivated grasses for feeding the herd. Manitoba constructed a drainage ditch approximately 16.0 feet wide which ranged in depth from 3.0 feet at the mouth of Maple Lake to 8.0 feet at the Souris River. There were controls at the mouth of the ditch on Maple Lake which maintained that basin between certain stipulated levels. Once waters reached a designated level, the controls would be opened to permit the flow of water through the drain instead of spilling over and flooding farm lands around Maple Lake. This construction was completed in 1968. In 1969, Manitoba discharged water through the drain that badly flooded the plaintiff's property. The plaintiff contended that the heavy spring run-offs into Maple Lake had never before entered the Souris River prior to the 1968 drain construction. Justice Solomon determined, "I am satisfied that his land lost considerable value as a result of the drop in the water table. A nuisance was proven in the circumstances" (p.7).

- ***Brown et al v. The Town of Morden,*** [1958] M.J. No. 37 (QL)

[106] In ***Brown et al,*** 10 plaintiffs commenced a cause of action alleging that the defendant had released large volumes of contaminated water from its sewage disposal plant into a depression which ran across their properties. They claimed damages with respect to crops and cattle from the effluent. The defendant denied its actions caused water pollution or materially increased the water flow

into the depression. This case also involved evidence of flooding and precipitation in the area.

[107] The defendant had created an artificial ditch by means of a pipe extending underground for a distance of at least 500.0 feet and then an open ditch which crossed the plaintiffs' properties until it reached the depression area. The court found liability for all proven damages as the flooding was as a result of the defendant's nuisance, along with excessive precipitation. Justice A. Monnin (as he then was) found that the large amount of water directed into the depression was in excess of its natural capacity. He stated (at para. 31): "There does not seem to be a shadow of doubt but that the combination of the above-average precipitation during the last 3 years with the artificial flow of extra water discharged by the defendant caused the flooding complained of by the 10 plaintiffs."

- ***High Country Outfitters Inc. v. Pitt Meadows (City)***, [2012] B.C.J. No. 1859 (QL)

[108] The plaintiff brought an action primarily in negligence because of losses resulting from the flow and seepage of water onto rural property situated on flat lands which constituted a flood plain. As a consequence of watercourses, such as the Pitt and Alouette Rivers, both of which are tributaries to the Fraser River, the flatlands were considered to be highly vulnerable to flooding. The city maintained a network of dikes that prevented this area from being flooded from the adjacent Pitt River. Without those dikes, the property would have experienced repeated flooding. In 2007, the city undertook improvements to the

dike which the claimant alleged caused or enabled the flow and seepage of water onto its property to have increased. This was argued to have caused damage to the septic system and excessive saturation of the soil. A claim in nuisance failed for the following reasons:

> 87 ... I would first observe that it is difficult to characterise the parties, on the facts here, as having "conflicting uses" of their respective lands. The City has, on its lands, watercourses, including the Pitt River, that it seeks to control so as to prevent HCO and other landowners in the Pitt Polder region of the City from having their properties rendered uninhabitable or unusable due to the flooding that would otherwise inevitably result from tidal and seasonal fluctuations in the water levels within those watercourses. The infrastructure by which the City controls those watercourses includes the Dike System. The interests of both the City and HCO in keeping HCO's land free of unwanted water are thus not conflicting. They are wholly aligned.
>
> 88 I note as well that the utility of the City's conduct in maintaining the Dike System generally, and the Subject Dike particularly, is both incontestable and admitted. HCO could make no use at all of the McQuarrie Road Property without that infrastructure to protect it from the waters of the Pitt River.
>
> 89 But, to pick up on a recurring theme yet again, to the extent that the analysis concerning the tort of nuisance entails consideration of the "harm" caused by the defendant to the claimant, on the facts as found here *HCO has not suffered harm attributable to runoff from, or seepage through, the Subject Dike*. Its enjoyment of the use of the McQuarrie Road Property has not been compromised in the way identified in its Notice of Claim by runoff or seepage. HCO has failed to prove any causal connection between those phenomena attributable to the 2007 Subject Dike Improvements and the failure of the Subject Septic System. That by itself forecloses recovery by HCO against the City for nuisance on the facts of this case.
>
> [Emphasis in original.]

- ***Lynds v. Runge***, [2002] B.C.J. No. 2565 (QL)

[109] The plaintiffs had purchased a 40 acre parcel of land in 1993 in order to develop a portion for commercial vegetable and hay crops. The defendants also purchased an adjoining 160 acres of property in the same year for recreational

purposes. The portion of land that the plaintiffs wished to cultivate was near a section of the defendants' property where a naturally formed pond or lake was situated. Beavers on the defendants' property created dams which the plaintiffs contended caused flooding to portions of their property and adversely impacted their ability to grow potatoes and hay. The court held that there was no obligation on the defendants to alter a longstanding watercourse in order that an adjacent landholder could utilize land that was subject to historical seasonal flooding (para. 52).

- ***Waterway Houseboats Ltd. v. British Columbia***, [2019] BCSC No. 662 (QL)

[110] The plaintiffs contended that a 2012 debris flood caused significant damage to their property and houseboat business on Mara Lake, in the District of Sicamous. The plaintiffs submitted that the 2012 flood was caused by improper actions taken by the defendants. A similar occurrence had taken place in 1997. They argued that the defendants implemented several flood recovery projects, including creek bed dredging and the reconstruction of a private bridge. The issue was whether those actions played a role in causing the flood damage or whether that consequent damage would have happened in any event.

[111] Justice Weatherill dismissed the plaintiffs' claim in private nuisance based upon the fact that the defendants had merely granted approvals for the McLaughlin Bridge replacement and channel restoration, but did not undertake the actual construction of those projects. Those projects were found to be the responsibility of other defendants, even though the plaintiffs asserted that by

issuing the approvals British Columbia had enabled the creation of a nuisance. The court was unable to accede to that position (paras. 379 and 380). The court held, "... I agree with the Province that it had no obligation to do so considering the nuisance existed by virtue of a natural hazard resulting from a naturally occurring watercourse". In this case, liability was found pursuant to the tort of negligence.

- ***Jorgensen v. Kamloops (City)***, [2020] B.C.J. No. 944 (QL)

[112] This case was relied upon principally with respect to the fact that causation must be proven in cases of this nature. That proof is based on the "but for" test where, "[t]he plaintiffs must prove that but for the alleged tortious event, they would not have suffered the damages alleged. This test ensures there is a substantial connection between the alleged tortious event and the damages suffered" (para 79). Further (para. 80):

> ... the cases highlight that "but for" causation does not require scientific certainty. Inferences of causation can be drawn on the basis of common sense. As well, the trier of fact can take into account the relative positions of the parties to adduce evidence on causation. However, the burden remains on the plaintiff to prove causation throughout.

IX. ANALYSIS

1. Did Manitoba, by its actions, cause flooding to occur on off-reserve areas surrounding Lake Manitoba?

[113] As was stated by Pfuetzner J.A. in ***Anderson et al v. Manitoba***, 2017 MBCA 14 (CanLII), "[t]he focus of the question is to identify any causal connection between the actions of Manitoba regarding the water-control

structures and the flooding rather than to determine the impact of the flooding on any particular plaintiff's property" (para. 40). Further:

> [48] It is a fundamental question of fact in the litigation to determine whether the actions of Manitoba in operating the water-control structures caused the flooding. These are general causation issues that are common to each individual class member's claim and can be determined independently of the evidence of individual class members. The evidence relevant to this issue will likely entail the opinions of experts and the evidence of decisions made and actions taken by Manitoba in the operation of the water-control structures. In order to be successful in nuisance, each of the class members would need to prove this basic fact–that the actions of Manitoba caused the flooding on their reserve. It is an issue that is common to each class member and its resolution will move the litigation forward for each class member or, if causation cannot be established, end the litigation for each class member.

[114] The lay witnesses all opined that the operation of the Portage Diversion caused flooding to occur on off-reserve areas surrounding Lake Manitoba. Their opinions, without exception, were that the high inflow put through the Portage Diversion created a situation where dangerously high volumes of water were diverted into the lake in order to save those downstream on the Assiniboine River, including the City of Winnipeg.

[115] The Technical Review concluded, in accord with the position of Manitoba, that what transpired in 2011 was substantially a natural occurrence on Lake Manitoba. While the Portage Diversion caused significant inflows into the lake, it was submitted that those water levels would have transpired naturally because of the high water volumes being experienced as a consequence of 2010/11 climatic conditions. Manitoba acknowledges that the regulated water level exceeded the peak of unregulated water by 0.3 feet on July 23, 2011, while artificial flooding occurred for the period of June 22 to August 30, 2011. That said, any damages

occasioned were argued not to be of significance and did not constitute a substantial interference.

[116] It is necessary to carefully review the position adopted by Manitoba in 2012 and, thereafter, in contrast with the very simple fact that the Portage Diversion's operation facilitated an unprecedented flow of 4.7 million acre-feet of water into Lake Manitoba. Indeed, from May 6, 2011, to the end of 2011, the water level on Lake Manitoba was in excess of the 814.0 feet flood stage. There is no doubt that natural climatic conditions converged to create exceptional volumes of water in the fall of 2010 and spring of 2011. That said, how does the decision by Manitoba to flow 4.7 million acre-feet of water through the Portage Diversion impact the causation issue?

[117] Climatic conditions in the fall of 2010 resulted in high water levels on Lake Manitoba approaching the maximum regulated level of 812.50 feet. Additionally, there were high natural inflows from the Waterhen River in both 2010 and 2011, as well as from smaller local tributaries such as the Whitemud River. The water levels were a cause for concern to the Lake Manitoba property owners and stakeholders, as evidenced by the testimony of the lay witnesses. Concern was expressed by individuals such as Greenlay to Topping with regard to the rising lake waters. Further, the lay witnesses, for the most part, had never experienced flooding to their properties, had long family histories in the area, and were attuned to the regulated levels of Lake Manitoba. The testimony of the lay witnesses was clear as to what they viewed to be the cause of the 2011 flooding – the Portage Diversion. Further, they were provided assurances as to fair

compensation through comments made by then Minister Struthers on May 30 and June 1, 2011. That compensation was promised by a minister of the Crown to those who were negatively impacted through the Portage Diversion inflows into Lake Manitoba. The lay witnesses all claimed compensation through MASC and were never asked as to whether the flooding on their properties was natural or artificial. They provided both testimony and photographic evidence of the damages and devastation to their properties, particularly after the May 31, 2011, storm. Several of the referenced reports also described the damages caused. That storm was much like others experienced on the lake, occurring usually during the spring and fall of any given year. However, the inflows from the Portage Diversion had cultivated a situation where the lake was higher than ever before seen. This created the scenario for the damage that occurred when that storm hit. By May 31, 2011, 2.3 million acre-feet had been diverted into the lake. Lake Manitoba was 3.5 feet above the highest regulated range level. It stands to reason that the May 31, 2011, storm would have dramatic consequences in the area. These witnesses also indicated that the flood waters continued to rise on their properties well into the summer of 2011.

[118] The evaluation of lay witness testimony constitutes an important consideration, particularly when it relates to the ultimate question to be determined by the trier of fact. In this case, the lay witnesses' evidence was based on their experiences with respect to the circumstances of what was transpiring in 2010 and 2011 on Lake Manitoba. These witnesses provided testimony as to the facts as they perceived them and stated their opinions based

upon their observations living around Lake Manitoba. The weight of that evidence is a matter for the trier of fact in the context of all the circumstances of the case. That, of course, acknowledges that a non-expert witness cannot give opinion evidence on a legal issue. These matters have been considered in cases such as ***Graat v. The Queen***, [1982] 2 SCR 819; ***Jorna & Craig Inc. v. Chiasson***, 2020 NSCA 42 (CanLII); and ***Ganges Kangro Properties Ltd. v. Shepard,*** 2015 BCCA 522 (CanLII).

[119] In ***Jorna & Craig Inc. v. Chiasson,*** the Nova Scotia Court of Appeal considered the admissibility and/or weight of a report calculating Jorna & Craig Inc.'s loss of business revenue. It was alleged that the court did not undertake the necessary analysis regarding admissibility of expert evidence as was set out in ***R. v. Mohan,*** [1994] 2 SCR 9. Further, it was argued that the hearing judge erred by accepting inadmissible evidence of a non-expert witness or lay opinion evidence. Justice Oland held on behalf of the court:

> [64] Opinion evidence of non-expert witnesses is generally inadmissible. In *R. v. D.D.*, 2000 SCC 43 the Supreme Court of Canada summarized this exclusionary rule and its rationale:
>
> > 49 A basic tenet of our law is that the usual witness may not give opinion evidence, but testify only to facts within his knowledge, observation and experience. This is a commendable principle since it is the task of the fact finder, whether a jury or judge alone, to decide what secondary inferences are to be drawn from the facts proved.
>
> [65] Opinion evidence of non-expert witnesses can be admitted under the compendious statement of facts exception. Sopinka, Lederman& Bryant, *The Law of Evidence in Canada*, 4th ed., 2014 at p. 774 summarized the factors relevant to that exception as set out in *Graat v. R.* 1982 CanLII 33 (SCC), [1982] S.C.J. No. 102 as follows:
>
> > 12.14 Courts now have greater freedom to receive lay witnesses' opinions if: (1) the witness has personal knowledge

> of observed facts; (2) the witness is in a better position than the trier of fact to draw the inference; (3) the witness has the necessary experiential capacity to draw the inference, that is, form the opinion; and (4) the opinion is a compendious mode of speaking and the witness could not as accurately, adequately and with reasonable facility describe the facts she or he is testifying about. [21] But as such evidence approaches the central issues that the courts must decide, one can still expect an insistence that the witnesses stick to the primary facts and refrain from giving their inferences. It is always a matter of degree. As the testimony shades towards a legal conclusion, resistance to admissibility develops.[22]

[120] The ***Ganges*** decision involved issues surrounding a dam and a contract of purchase and sale of residential property. The court considered whether the defendant had failed to disclose latent defects about a residential lot and its propensity to flood, along with other issues. The defendant argued that the trial judge relied on inadmissible lay opinion evidence from the plaintiff's witnesses who had not personally observed the temporal sequence of events that had produced the flooding. Justice Kirkpatrick reviewed this area and considered the evidence provided by non-expert witnesses who had personally observed the facts from which their inferences were drawn. The issue was determined to be one of weight and not admissibility. Those witnesses gave evidence and drew inferences in relation to what they concluded had caused the flooding and excessive water in the area of Lot A. The British Columbia Court of Appeal did not accept the appellant's submission that the trial judge erred in relying on the lay opinion evidence.

[121] In this case, the lay witnesses testified to facts within their knowledge, observations and experiences. The issue is the assessment and weight of their

evidence in these proceedings. The experiences and testimony of those who have lived in the affected area and whose livelihoods and/or recreational use are dependant on those areas, must be afforded considerable weight. They lived the water levels, the variations in levels, and the occurrence and impact of storms on an ongoing basis. As indicated, there was an expectation that the regulated lake range would be maintained by Manitoba. I have, after a review of all of the evidence, placed some weight on the relevant lay witnesses' testimonies with respect to their observations of what was transpiring in 2010 and 2011 in terms of the climatic conditions and the ever-increasing water levels on Lake Manitoba. Many of these individuals testified as to their long experiences living along the lake and how the events of 2011 were different, particularly with respect to the volume of water that was inflowed by virtue of the Portage Diversion. They also were able to testify as to their experiences in terms of the absence of flooding on their properties in prior years, the effect of storms in the past and, of course, the damage occasioned in 2011. As indicated, I have placed some weight on their evidence, particularly with respect to their testimonies as to the 2010/2011 conditions on the lake as contrasted with previous years. However, the substantive issue will largely be determined by conclusions reached through an analysis of the expert evidence as regards causation. I acknowledge the inference drawn by the lay witnesses that the Portage Diversion was the primary cause of the 2011 Lake Manitoba flooding. That is a legal conclusion and that inference cannot be regarded or accepted as determinative of this action.

[122] The flooding forecasts were grave in the early months of 2011. Certainly, by February 2011, Manitoba was aware that extreme flooding could well transpire in the province. It is unfortunate that, in particular, Lake Manitoba residents were not advised of this until late April 2011. That said, certain individuals, such as Howden, based on his observations of the lake, had acted to build rock barriers to protect his property, albeit those were destroyed in the May 31, 2011, storm. The evidence demonstrates that by mid-May 2011, Lake Manitoba was at a level of 816.0 feet with residents being warned with respect to high water levels. Ranchers, like Finney, Teichroeb, Schwartz and Moran, acted to move cattle or protect their properties and other operations. As previously indicated, on May 30, 2011, then Minister of Agriculture Stan Struthers appeared on CBC radio discussing issues such as compensation and stated (Exhibit 18, Tab 21, p. 3, lines 2–23):

> Well, this is a very special, extraordinary spring. There was high levels naturally on Lake Winnipeg - - sorry, Lake Manitoba to begin with. You know, the Waterhen and [Whitemud] Rivers have been flowing in excess of 150 per cent.
>
> And then we decided on top of that to flow even more water through the Portage Diversion. We made that decision for all the right reasons. It was a decision that we needed to make.
>
> But I think there has to be a realization that there was a lot of people around Lake Manitoba that were really negatively impacted. And it was combination of natural levels and some decisions made to flow more water in there.
>
> There is farmers, there is residents, there is cottagers all working to, first and foremost to mitigate, to protect their properties and their livestock, and we want to work with all of them.

The Minister also went on to say (p. 4, lines 3–11):

> MR. STRUTHERS: Well, we accept responsibility, that's for sure. I mean the infrastructure that we put in place is designed to minimize the impact on Manitobans. But we need to recognize that some Manitobans pay the price to protect the rest of us. That means compensation. That means fair compensation, and we are determined to get that cash in the hands of people who need it without delay.

Minister Struthers said that this flood was different from those that had previously transpired with unprecedented levels of water being flowed into Lake Manitoba. The compensation program was described as special as a consequence of special circumstances not seen elsewhere in the province, "... because of decisions to take the, you know, the Portage Diversion from 25,000 cfs up to 33,000 cfs. That's a very significant increase" (p. 5, lines 18–21). It is important to remember that those comments were made before the May 31, 2011, storm.

[123] At the June 1, 2011 meeting held at Langruth, Manitoba, Minister Struthers again indicated responsibility for the decision to put, "... more water in your backyards" by virtue of the diversion (Exhibit 17, Tab 2, p. 1, lines 18 and 19). The Minister also stated that he was not going to sit back and endeavour to explain natural and artificial lake levels. Interestingly, 2.3 million additional acre-feet of water was diverted into Lake Manitoba in the weeks after this meeting.

[124] The transcribed statements of then Agricultural Minister Struthers are hearsay and presumptively inadmissible evidence. He did not testify during the course of these proceedings. However, hearsay exceptions exist, in part, to facilitate the truth-seeking function by admitting into evidence statements that are reliably made and can be adequately tested. These statements were publicly

stated, recorded and transcribed by a certified court reporter. There was no issue raised with respect to their completeness or authenticity. These statements are regarded as an admission against interest by a party to these proceedings: ***Cambie Surgeries Corporation v. British Columbia (Medical Services Commission***), 2016 BCSC 1390 (CanLII). The statements were made by a minister of the Crown and he did not limit his pronouncements to be an expression of his personal view or opinion. These were statements made in late May and early June 2011 and reflect what was known at that time, and, arguably, not what came to be known. The statements have been accorded some weight, acknowledging the circumstances of how they transpired and when.

[125] The evidence, substantially through e-mail communications, demonstrated that, in early June 2011, Manitoba was contemplating various scenarios and interpretations of the 2011 flood. Compensation levels would ultimately rest on whether the flood was considered as a natural or man-made disaster. Many of the communications involved the deputy minister, Bowering and Topping, as well as others who were part of the team charting the decisions with respect to the 2011 flood. The deputy minister on June 3, 2011, in an e-mail to Topping, Bowering and others, said:

> Whether the devastation caused by severe flooding on Lake Manitoba this year is a natural or a man-made disaster is the most controversial issue arising from the 2011 flood season. Home and cottage owners, farmers, and business owners around the Lake claim that the flooding is caused by the volume of water that has flowed into the Lake from the Portage Diversion, and the failure to operate the Fairford River Water Control structure at higher flows through the winter. They do not accept that,

> before this spring, the Fairford structure had taken more water out of the Lake than had flowed into it, so that before this spring's runoff it was 1.8 feet below natural. Nor do they accept that the Lake is still below natural levels.
>
> These citizens argue that there is no difference between the cutting of the Assiniboine dikes to protect others downstream of Portage, and the artificial diversion of Assiniboine River into Lake Manitoba to protect everyone in the same area, so they should receive the same 100% compensation being provided under the Hoop and Holler Controlled Release Area Program.
>
> Even if they accept the "natural" vs "artificial" water level calculations as valid, they argue that "natural" should include the flood protection that the Fairford structure is capable of providing them. They believe that because they made their investments based on regulated water levels, with the virtual elimination of the benefits of the Fairford structure by Portage Diversion flows, it would be unfair if they do not receive 100% compensation.
>
> It may become necessary to counter the affected citizens' arguments, not only with the calculations of natural and artificial levels, but also with the following historical information on natural breakout flows from the Assiniboine River into Lake Manitoba.
>
> In the Portage la Prairie area, the Assiniboine River transitions from a river at the bottom of a broad valley, to a "perched" river, above the surrounding landscape. In this area, before flood protection works were constructed, when the channel capacity of the river was exceeded, floodwaters broke out from the riverbanks and flowed overland, downhill, toward existing and historical channels.

[126] It is noteworthy that the peak forecasts continued to rise as the summer months approached and continued thereafter. In June 2011, the deputy minister signalled the beginnings of a change as to how Manitoba was approaching possible compensation for the affected Lake Manitoba residents. In an e-mail to team members, he stated (Exhibit 40):

> While I am reluctant to burden you all with this, I do think that it could turn out to be quite important for us to be in a position to adequately defend the Lake Manitoba compensation program against the argument that it is unfair as it does not provide compensation for all property owners and economic losses as is prescribed for those caused by artificial flooding

> arising from the operation of the Red River Floodway and the Shellmouth Dam.

In essence, Manitoba was laying the groundwork for the evaluation of the 2011 flood through the lens of what would have occurred without consideration of the water control structures and likely overflows from the Assiniboine River.

[127] The paper entitled, "2011 Lake Manitoba Flooding: A Natural or Man-Made Disaster?" (Exhibit 40) was created by Manitoba in June 2011 to address that issue. That paper included consideration as to what would have occurred under natural conditions without flood protection works in place, including the possibility of natural overflows from the Assiniboine River into Lake Manitoba. In the document, Manitoba acknowledged:

> Based on the fact that flows in excess of the Portage Diversion's capacity were unexpectedly diverted into Lake Manitoba, the Province has provided a special compensation program for owners of homes, cottages, farms and businesses on the Lake that is more generous [than] the standard disaster financial assistance program. However, while property owners around Lake Manitoba can accept the need to compromise their flood protection to protect others, they believe it would be unfair if they do not receive 100% compensation for all resulting property damages and economic losses. They assert that full compensation is warranted because they made their investments with the expectation that regulation of lake levels by the Fairford structure would protect them from extreme floods, and the excessive Portage Diversion flows have virtually eliminated the benefits provided by the regulated outflows through the Fairford structure.

The paper further outlined that the flood was considered to be the worst in 300 years and would have occurred naturally. Manitoba had expanded the extensive integrated flood protection system which served to prevent damages and this, along with the fact that substantial flooding would have occurred naturally, was a necessary component in any determination of natural conditions and the fairness

of the special compensation program. The document further states that (Exhibit 40, pp. 3–4):

> ... Even with very conservative estimates of the volume of Assiniboine River natural overflow to Lake Manitoba, such an analysis shows that, while the flood protection provided to properties around Lake Manitoba was indeed compromised by higher than natural flows through the Portage Diversion, the property owners were still provided with the benefit of marginally lower water levels by Fairford operations than would have occurred under natural conditions. Manitoba's flood protection system has not made Lake Manitoba property owners worse off.
>
> The flooding and resulting damages around Lake Manitoba are the result of extraordinarily high natural water flows and total natural flood volumes throughout western, south western and south central Manitoba this spring, beyond the design capacity of the components of Manitoba's flood protection system that are intended to mitigate Assiniboine River and Lake Manitoba flooding. These damages were made much more severe and extensive by the effects of rare spring windstorm. The experience of this flood indicates the need to assess the value of increasing the capacity of these flood protection works to mitigate damages from future natural disasters. However, it does not warrant the 100% compensation for all property damages and economic losses as if it were a government-caused event.

[128] The document, "2011 Lake Manitoba Flooding: A Natural or Man-Made Disaster?" went through a number of drafts and, ultimately, became the position of Manitoba. It included the finding that flooding and damages occasioned as a consequence of the May 31, 2011, storm were more severe and needed to be assessed; however, did not warrant 100 per cent compensation as if it were a "government-caused event" (Exhibit 43, p. 4).

[129] Bowering, as previously indicated, had prepared a response to the Forbes article in the Winnipeg Free Press for publication on June 16, 2011, entitled "Why the Disaster on Lake Manitoba?" (Exhibit 45). Interestingly, Bowering stipulated in that article that he was in no position to comment on government policies or what should have been done to alleviate the concerns of the Lake Manitoba

residents and stakeholders. This was said despite the fact that he was employed at the relevant time by Manitoba and was an integral member of the team responding to the 2011 flood. He acknowledged in the response that he had, "... temporarily gone back to work with Water Stewardship this spring to help where I can". That said, he could not be considered as an average community member responding to the Forbes's article. His analysis was that there was simply too much water flowing because of climatic and natural conditions. Indeed, this article, despite what was said by Bowering, reflected or buttressed government policy. Further, he had been asked by the deputy minister to respond to the Forbes article (Exhibits 92 and 93) and was authorized to utilize any necessary information to craft the response (Exhibit 44).

[130] As time progressed, and the dissatisfaction of the Lake Manitoba residents became increasingly apparent, these issues found their way into the provincial legislature in the spring of 2012 (Exhibit 69). The issue involved whether appropriate compensation had been afforded to the Lake Manitoba stakeholders, as approximately 400 had met to discuss the issue. A lawsuit was contemplated at that time. This ultimately resulted in an e-mail from Topping to others on his team stating, "Justification why we need a scientifically defensible, timely report on Lake Manitoba regulated vs unregulated" (Exhibit 69, p. 1). This proved to be the genesis of the Technical Review.

[131] Manitoba submits that the causation factor very much relates to the conclusion that more water existed than could be handled and it had to be inflowed through the existing water controlled structures. What transpired was a

natural occurrence, with the exception of the acknowledged short-term artificial flooding to the Lake Manitoba area that transpired between June 22 and August 30, 2011 (Exhibit 26, p. 107). Further, the artificial flooding that occurred was contended to be incremental and not substantial in nature. The incremental level of artificial flooding that would be attributable to Manitoba was when the Lake Manitoba level rose above 814.4 feet. It is also the position of Manitoba that any damage/flooding that was occasioned as a consequence of the May 31, 2011, storm would have happened in any event, and, again, was a natural occurrence. There was argued to be no obligation on Manitoba to prevent a naturally occurring interference with property interests.

[132] In considering the issues, I found the testimony and reports of Veldman and Dr. Garcia to be of significant assistance. Their testimony and reports were persuasive in the determination of this matter. Further, they presented with greater independence than those who testified on behalf of Manitoba. Their evaluations were based upon a consideration of what occurred on a common-sense basis. Additionally, their credentials, expertise and acceptance by this and other courts as experts on many occasions served to bolster the credence of their testimony. This issue is one that cannot be determined on the basis of definitions utilized in analogous legislation that does not apply in the circumstances of the Portage Diversion, but must reflect logic and fairness.

[133] The experts relied upon by the defence were primarily participant witnesses who endeavoured to give their testimony in justification of their actions in managing the 2011 flood and the evaluation of whether it was a man-made or

natural disaster. Coincidentally, their positon was consistent with Manitoba's political position on the cause and, hence, compensation.

[134] Blais, a hydrologist, had never before prepared an expert report, nor had he testified in that capacity. As indicated previously in this decision, I permitted him to testify as an expert witness in hydrology, water resources and modelling. After hearing his testimony and his manner of presentation, I have concerns with respect to his impartiality in these circumstances, particularly given his previous role as a consultant for Manitoba during the flood event. I found him to be an assertive advocate for the position he adopted and one who did not display the hallmarks and role of an independent expert witness. Blais was not a disinterested expert in this matter. Previously, as an employee of Manitoba and more recently as an engaged consultant, he was part of the decision-making process with respect to the events of 2011 and thereafter. I have considered the evidence of all of the expert witnesses in deciding this case and have placed weight on their testimony – albeit considerably less so on the report of Blais. Further, Blais made certain contrary assertions to what was contained in his report through his 2015 journal article (Exhibit 86) and the 2020 presentation to the Canadian Water Resources Association (Exhibits 87 and 88).

[135] Unquestionably, late 2010 and 2011 presented with climatic challenges in the Province of Manitoba. There were appreciable natural inflows from the Waterhen and Whitemud River watersheds along with significant precipitation both in the fall and winter months of 2010 and in the spring of 2011. That said, 4.7 million acre-feet was flowed through the Portage Diversion which served to

increase the peak water level from 814.38 to 817.24 feet. The flood level was 814.0. A number of the discussed Lake Manitoba water levels are set out as follows:

822.0–824.0 feet	Wave uprush levels in the southern area of Lake Manitoba due to May 31, 2011, storm per Topping
819.09 feet	Wind setup at Twin Lakes Beach, per Technical Review
818.46 feet	Observed wind setup, per Propp
817.0–818.0 feet	Wind setup levels, per Topping
817.34 feet	Peak levels due to operation of the Portage Diversion, per Dr. Garcia
817.27 feet	Steep Rock and Westbourne gauges in July 2011
817.24 feet	Peak level due to operation of Portage Diversion, per Veldman
817.2–817.5 feet	Range of levels acknowledged by Blais
817.0 feet	Storm levels at Delta Marsh and Twin lakes Beach
814.0 feet	**Acknowledged flood level**
813.0 feet	Level at end of 2010
812.87 feet	Maximum regulated level
810.0–812.50 feet	Recommended regulated range, per 2003 Advisory Committee

[136] Both Dr. Garcia and Veldman approached the determination of the effect of the Portage Diversion on the Lake Manitoba flooding from the perspective of endeavouring to ascertain its effect on the lake level and consequent flooding. The contrary position adopted by Manitoba was to simulate and calculate if and when the regulated water levels of Lake Manitoba exceeded the unregulated levels. In doing so, the unregulated water level would have been the estimation calculated but for the presence and operation of all flood control infrastructures

affecting Lake Manitoba, including the FRWCS. Dr. Garcia well outlined this contrast in positions in his report as follows (Exhibit 15, pp. 3-4):

> However, excluding the Fairford River Structure from the *unregulated* scenario, does create a bias toward higher elevations on the lake. For instance, if we consider in Figure 1, the period from 2004 to 2010, we see that the observed levels are about 2 ft below the unregulated scenario. That indicates that the Fairford River Structure has a significant impact on reducing Lake Manitoba levels and should have been included in the analysis to assess the effect of the Portage Diversion. The effect of the Fairford Structure has been corroborated in several studies. For instance, Exhibit K indicates on Page 6. *"Over the last few years, excluding the flood of 2011, Lake Manitoba would have been 1.5 to 2 feet higher on several occasions and would have flooded extensive areas were it not for the control structure."* All of this suggests that it does not make sense to exclude the Fairford Structure to analyze the effect of Portage diversion during the flood of 2011.
>
> Although there is no universally accepted definition for the *Unregulated* term, It is generally interpreted as a condition where the system flows occur without man-made alterations nor hydraulic regulation structures. That is an unrealistic condition since it would involve removing all urban and man-interventions that have been made on the Lake Manitoba watershed, which govern runoff. The key point here is to understand if the Portage Diversion was or was not a determining factor in the flooding. Therefore, the issue is not to consider regulated vs. unregulated conditions, but to assess the effect of the Portage Diversion on the 2011 flooding, it is necessary to consider only one single factor and whether it leads to either true or false outcome. In other words:
>
> 1. Existing conditions at the time of the 2011 event WITH the Portage Diversion.
>
> 2. Existing conditions at the time of the 2011 event WITHOUT the Portage Diversion.
>
> Since Lake Manitoba is a multiple dependent system, including other factors together with the Portage Diversion, would be misleading, because one would never know if the resulting lake elevations from the two scenarios outlined above would help to estimate the real effect that the Portage Diversion had on the 2011 Lake Manitoba flooding.
>
> [Emphasis in original.]

[137] Dr. Garcia went on to say (at p. 5):

> ... Considering the Portage Diversion inflow, and assuming that all other inflows and outflows did not exist serves to assess the potential impact of the diversion inflow on lake elevations and inundated areas. With these assumptions, the resulting level increment was 3.34 ft reaching a level of 817.34 ft, which suggests that regardless of other factors, the Portage Diversion on its own had the potential to increase the lake level 3 ft. In other words, if the Portage Diversion flow had not occurred during the 2011 flood, the Lake Manitoba levels would have been 3.34 ft below the recorded level.

[138] Dr. Garcia opined that the diversion flow caused a significant percentage of the flooding. He found that the volume diverted was 11.73 times larger than the volume that would have resulted under unregulated overflow conditions. He also stated (at p. 9):

> .....
>
> - Some statements indicate that in the absence of the Portage Diversion and the Fairford River Water Control structure, the 2011 flood on Lake Manitoba would still have been the worst flood since water levels were recorded. However, since the Fairford Structure contributes to reducing Lake Manitoba water levels, such analysis does not allow isolating the effect of the Portage Diversion, nor proves that the flooding was not caused by the diversion of large volumes of water to the Lake.
>
> - Only comparing two scenarios, one including the Portage Diversion and the other ignoring it, and considering all the other conditions and structures that existed at the time of the 2011 event, including the Fairford Structure, would result in a realistic estimate of the effect that the Portage Diversion had on the 2011 Lake Manitoba flooding.

[139] Veldman, as previously indicated, opined that the record high water levels on Lake Manitoba were due to high natural inflows, climatic conditions and the Portage Diversion, which served to increase the peak 2011 Lake Manitoba water level from 814.38 feet to 817.24 feet – an increase of 2.6 feet. In his view, from April 15, 2011 to early 2012, the Portage Diversion caused artificial flooding on Lake Manitoba above the flood stage. He was also of the view, which I accept, that in determining the effect of the Portage Diversion, the impact of the FRWCS

must be included in the calculation. Veldman reviewed the issue of inclusion of the FRWCS on a historical basis, as had been done in the 1958 report. He concluded (Exhibit 13, Tab 6, p. 3):

> ... the design of the FRWCS and its resultant impact on Lake Manitoba water levels was checked for the pre 1958 historic Assiniboine River flows, not for the extreme flow and volume diverted by the Portage Diversion in 2011.
>
> The extreme and sustained runoff in 2011 and Manitoba's operation of the Portage Diversion, well beyond its Operational Guidelines, were the causes of the flooding experienced on Lake Manitoba in 2011 and in fact into 2012.
>
> Additionally, "the poor quality of the dikes on the lower Assiniboine River became very apparent during the course of the flood. The role that these dikes played in reducing the capacity of the river necessitated in conveying greater volumes of water through the diversion into Lake Manitoba so as not to compromise the dikes." ("Manitoba 2011 Flood Review Task Force Report" to MIT, Page 43, see Topping Exhibit H).
>
> In summary with respect to Blais' contention that my calculations were "systematically flawed" I conclude that:
>
> - Manitoba's determination of "natural" (or unregulated) and "artificial flooding" appears, from my review and knowledge, to be different for the Assiniboine/Lake Manitoba system, compared to that applied to the Red River Floodway especially for certain flow conditions,
>
> - the FRWCS was designed independent of the Portage Diversion conditions and then checked for pre 1958 diversion volumes from the Assiniboine River. It was not designed for the volumes diverted via the Portage Diversion in 2011 and the resultant extreme and sustained Lake Manitoba water levels,
>
> - the operation of the Portage Diversion, during the 2011 flood, was well in excess of its Operation Rules due to the magnitude of the flood, the poor condition of the Assiniboine River dikes, and the operational choices made by Manitoba re: flow in the Diversion versus that in the lower Assiniboine River,
>
> - it is reasonable and valid to determine the effect of the Portage Diversion on Lake Manitoba water levels with the FRWCS in place, as done for the 1958 studies.

[140] I have concluded that logic and common sense dictate that the effect of the Portage Diversion on Lake Manitoba should be considered with the inclusion of the FRWCS's operation. This methodology provides a fair and reasonable representation of the effect caused by the 4.7 million acre-feet flow from the Portage Diversion into Lake Manitoba. Certainly, the existence of the FRWCS and its extended capacity to provide outflow from Lake Manitoba benefitted the area residents and limited what could have been more extensive damages. The exclusion of the operation of the FRWCS does not make sense in ~~the~~ context of this matter. It operates to reduce the level of Lake Manitoba and must be included in order to assess the effect of the Portage Diversion on the lake. I accept the conclusions of Dr. Garcia and Veldman in this regard. I am satisfied that the use of the Portage Diversion contributed to an increase in the level of Lake Manitoba of between 2.6 and 2.8 feet, as calculated by Veldman on a conservative basis. It may well have been higher, as testified by Dr. Garcia, at 3.34 feet. Additionally, when wind setup and wave uprush are considered, the lake level was substantially increased. The Technical Review acknowledged that the Portage Diversion contributed to raising the level of Lake Manitoba as it was operated to shift flooding from one area of Manitoba to another. Stepping back from the various technical reports, common sense dictates that 4.7 million acre-feet of water cannot be flowed into a lake without a very significant impact on water levels. The operational decision to protect properties and residents downstream of Portage la Prairie was deliberate. This decision was made with the knowledge that the diversion was being operated in excess of its capacity and

would impact the ability of the FRWCS to handle the outflow with consequences for the Lake Manitoba residents. The removal of the FRWCS from consideration in the 2011 Lake Manitoba level acts to raise the water level and, thereby, affects the ability to evaluate the actual operation of the Portage Diversion on lake levels and the flooding issue.

[141] It is apparent that the May 31, 2011, storm was the cause of significant damage around the lake. However, according to the evidence of the lay witnesses, similar storms were experienced several times each year, without significant damage beyond some erosion to beach fronts. The reason the May 31, 2011, storm caused such extensive damage through both wave uprush and wind setup was because the lake was approximately 3.0 feet higher than would normally would have been the case. That additional volume of water caused by the operation of the Portage Diversion placed Lake Manitoba interests in great peril on May 31, 2011. It should also be remembered that the May 31, 2011, storm was of short duration – a number of hours; however, the water level continued to rise as did the damages well into the summer of 2011. This is because an additional 2.3 million acre-feet was flowed into Lake Manitoba from the Portage Diversion after May 31, 2011.

[142] It is also noteworthy that no alarms were raised for these Lake Manitoba residents until late April 2011, even though in February it was known to Manitoba that this was to be an extreme flooding event. The decision was made relatively early in the flood forecasts and consultations that substantial amounts of water would be flowed through the Portage Diversion in order to save downstream

interests. There is no question that the events of 2011 in and around Lake Manitoba were caused not only by the Portage Diversion, but by above-average precipitation in the fall of 2010 and in 2011. It is very possible that some flooding and damage would have transpired to this area. The question is how much, but that is for another day.

[143] I understand the evidence of Manitoba, and particularly the report of Blais (Exhibit 97). As previously indicated, Manitoba's evidence was supplied by participant experts employed by it, who came to the conclusion that the 2011 flooding into Lake Manitoba was primarily a natural disaster with some artificial flooding transpiring between June 22 to August 30, 2011. The approach of Manitoba was to remove the operation of all major flood control works when calculating the regulated and unregulated water levels for Lake Manitoba. The utilization of definitions of "artificial flooding", and "unregulated level" in the ***Act*** was not of significant assistance in the determination of this case. This is particularly so as these are water management tools and do not apply by statute to the situation before the court with respect to the Portage Diversion or the FRWCS, with the exception of those structures being referenced as water control works in s. 5 of the ***Act***.

[144] The same conclusion is appropriate as regards the application of the ***RRFA***. The definitions in the ***Act*** and ***RRFA*** are consistent with the approach adopted by Manitoba and as relied upon in the Technical Review. However, that approach does not apply by analogy to direct the appropriate legal determinations to be made in this case. Further, neither the ***Act*** nor the ***RRFA***

have been categorized as presenting a statutorily defined method to determine what water control structures would be legislatively included or excluded to find or dismiss the existence of a nuisance or how to calculate it. This case should be based on common sense and logic with respect to flowing 4.7 million acre-feet of water into a lake and expecting that it will be determined to be a natural consequence. That said, it is possible that lake levels above the 814.0 flooding level may have occurred in any event given the high water volumes present, including 4.0–6.0 million acre-feet that entered through the Waterhen watershed.

[145] I have reviewed the relevant case law with respect to this matter. Certain of those cases relied upon by the Plaintiffs involve situations where an authority took steps to release water through water control structures into rivers and lakes which resulted in flooding to a plaintiff's property and a finding of nuisance. Interestingly, with the exception of ***Nerbas***, those cases do not involve the utilization of statutory definitions such as regulated, unregulated, and artificial flooding levels to evaluate whether a nuisance claim was proven. The statutory definitions were discussed in ***Nerbas*** because of the Shellmouth Dam being a designated water control structure and were necessary for the defined compensatory scheme.

[146] The case law focuses on those situations where the actions of defendants released large or increased volumes of water onto a plaintiff's properties. Indeed, that is what transpired here – acknowledging that the existence of the FRWCS served to offset or reduce a portion of the ramifications of the volume of diverted water and limited, to an extent, the interference that transpired. The

case law presents with similarities with respect to the situation before the court which are favourable to the plaintiff, and yet there are differences. In the end, after reviewing the case law and considering the evidence in this case, I have concluded that the combination of climatic conditions which created above-average precipitation, natural inflows, along with the inflows from the Portage Diversion into Lake Manitoba acted to cause the Lake Manitoba flooding.

[147] As indicated, the case law served to assist in the determination of causation. Many of the cases related to a defendant's conduct in facilitating the release of water in such a manner so as to cause a nuisance to a plaintiff's property. This was often accompanied by adverse climactic and natural conditions. Such is the determination in this matter as there is more than one cause for the flooding that occurred on Lake Manitoba. That said, a combination of causes does not negate a finding of causation and substantial interference.

[148] I am not satisfied that the methodology adopted by Manitoba as outlined in the Blais report and through the evidence of the participant expert witnesses was appropriate. I am satisfied that the unregulated level of Lake Manitoba must be calculated to include the operation of the FRWCS. Accordingly, the peak water level would have been at least 2.6–2.8 feet lower without the Portage Diversion flow. The calculations of all the experts are quite similar with the principal difference being the inclusion or exclusion of the FRWCS. Further, Blais acknowledged in his testimony that the diversion was the main culprit in the Lake Manitoba flooding scenario when participating in the 2020 presentation for the Canadian Water Resources Association.

[149] I am satisfied that Manitoba, by its actions, caused flooding to occur on off-reserve areas surrounding Lake Manitoba. Its actions placed 4.7 million acre-feet of water volume into Lake Manitoba through the operation of the Portage Diversion. This served to increase the peak level of Lake Manitoba on a conservative evaluation of between 2.6 and 2.8 feet, and likely higher. The raising of the lake level caused extensive and continuing flooding and damage throughout the summer of 2011. Further, the high lake level was a precipitating cause of the damages sustained as a consequence of the May 31, 2011, storm when wave uprush and wind setup created water levels in the area of 820.0 feet and higher. The existence of such storms, including the consequences of wave uprush, are known to be common occurrences on Lake Manitoba. Further, the knowledge about such storm events should or could have been factored into evaluations of flood control capacity. The operation of the Portage Diversion is a direct and substantial cause of the flooding conditions and consequent flooding and property damage on Lake Manitoba.

2. Did the flooding caused by Manitoba's actions in the operation of the Portage Diversion substantially interfere with the use and enjoyment of the real property interests of the class?

[150] The lay witnesses' evidence well demonstrated through their testimony the damages on their respective properties supplemented by photographs filed in Exhibits 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11. The damages included a loss of crops and fields, soil salinity issues, the compromising of beaches, erosion, debris, a loss of trees, a loss of businesses and developments, as well as devastation to buildings, dwellings and cottages. That said, not all damage is necessarily

attributable to only the Portage Diversion inflows, as there were natural/climactic causes that were operative in these circumstances. Further, the May 31, 2011, storm worsened the flooding and damage conditions. However, the significant consequences of that storm were experienced as a result of the high level of Lake Manitoba caused by the operation of the Portage Diversion. I remain of the view that a substantial amount of that damage on May 31, 2011, would not have occurred but for the high level of the lake. Additionally, the Lake Manitoba water level continued to rise, flood and cause damage well after May 31, 2011, as the Portage Diversion continued to flow waters into it.

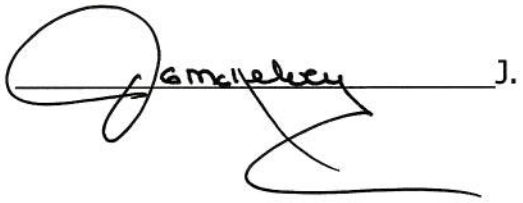
[151] In all the circumstances, and particularly with a careful consideration of the evidence of the lay witnesses as to the devastation occasioned with each of their properties, I am satisfied that substantial interference has transpired. It is only reasonable to conclude that the inflow of 4.7 million acre-feet of water into Lake Manitoba, which significantly raised the lake level, served to create the scenario of destruction that transpired. The raising of Lake Manitoba was not incremental in nature.

X. CONCLUSION

[152] The two common issues under consideration for this class action are answered as follows:

1. Manitoba, by its actions, caused flooding to occur on off-reserve areas surrounding Lake Manitoba;
2. the flooding substantially interfered with the use and enjoyment of the real property interests of the class.

[153] Costs may be spoken to if not agreed.



J.

Appendix 1

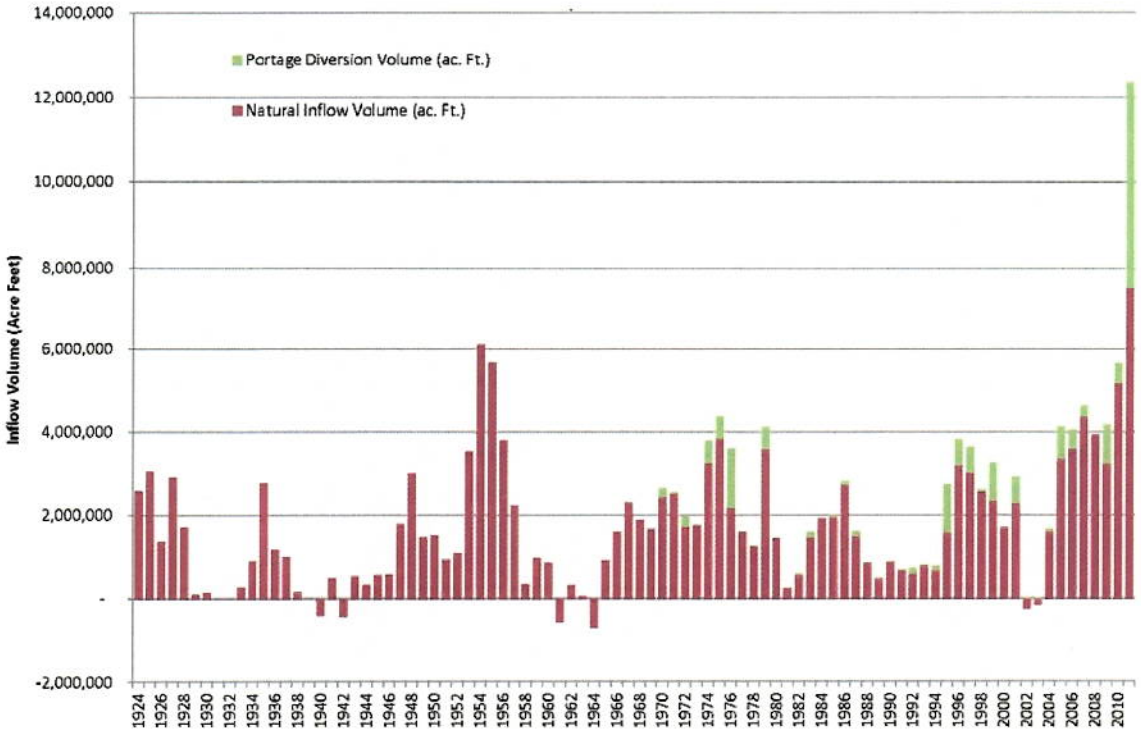


Figure 53: Annual inflows to Lake Manitoba, 1924-2011. Note that the natural inflow volume includes Waterhen River flows, all tributary inflows, plus the net difference in precipitation minus evaporation over the lake surface. Negative natural inflow values on the graph indicate that evaporation from the lake in that year exceeded all inflows to the lake including Waterhen flows, tributary inflows, and precipitation over the lake surface.

APPENDIX 2

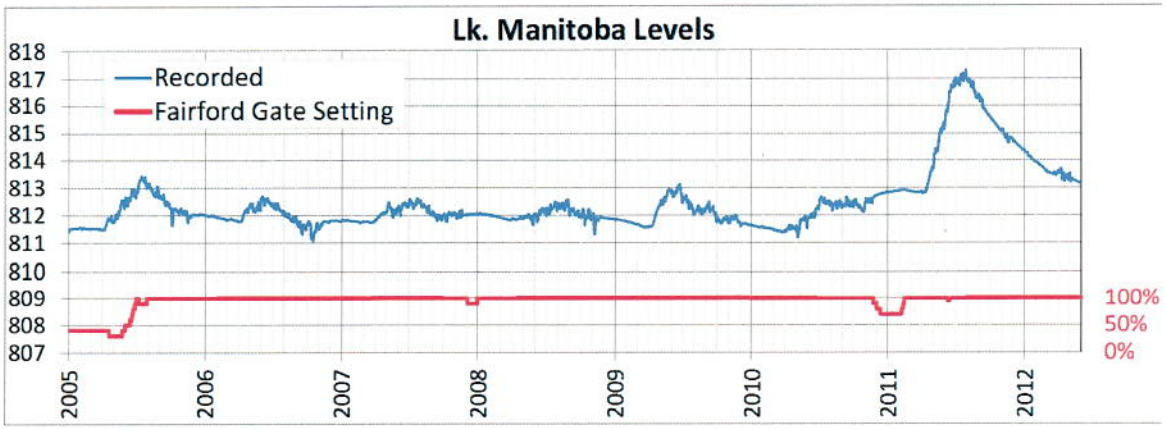


Figure 34: Recorded Lake Manitoba levels and Fairford River water control structure gate settings

APPENDIX 3

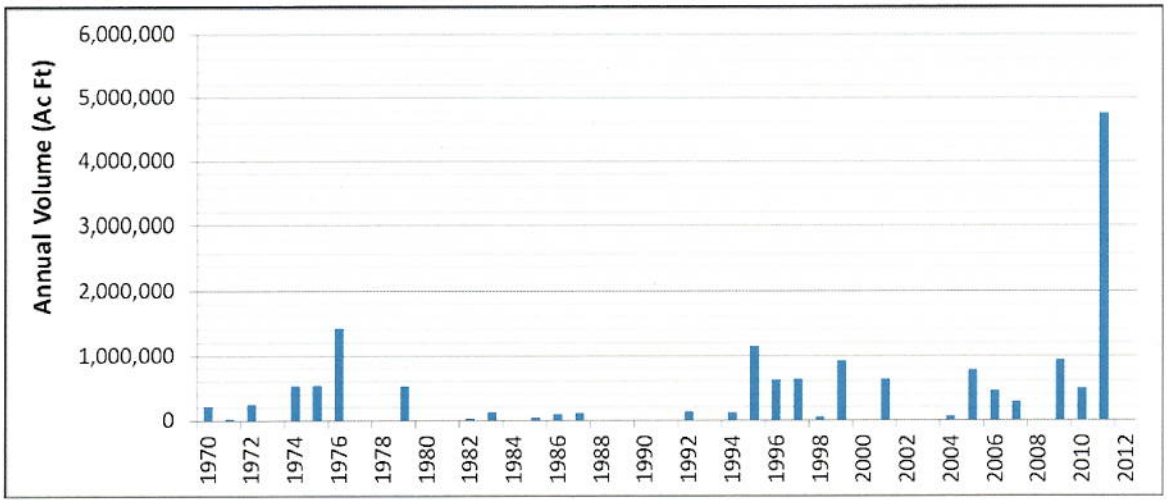


Figure 48: Annual volume of water diverted to Lake Manitoba by the Portage Diversion, 1970-2012.

APPENDIX 4

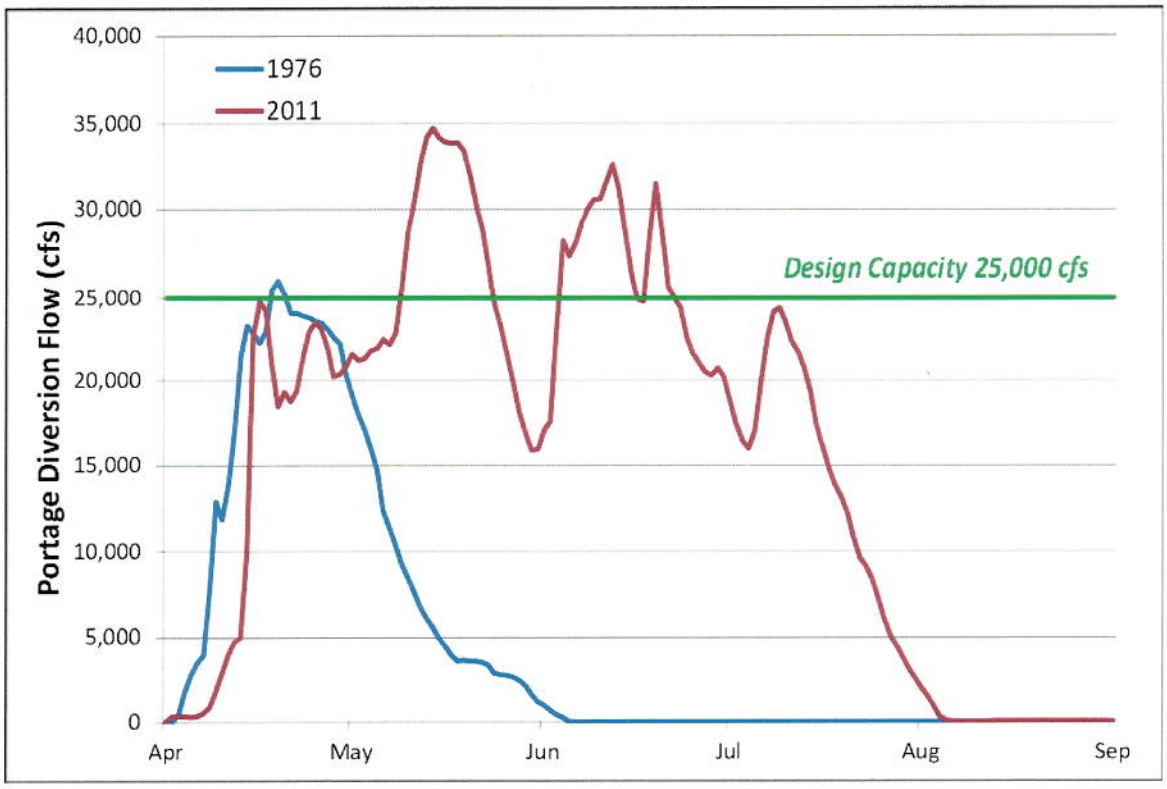


Figure 46: Recorded Portage Diversion flows in 1976 and 2011.

APPENDIX 5

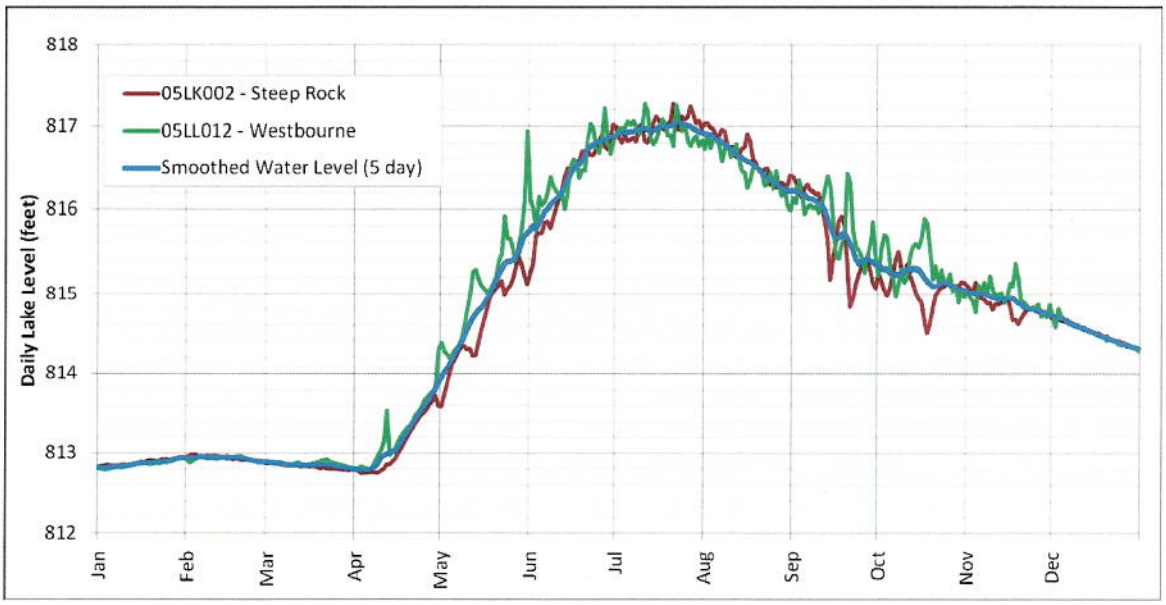


Figure 36: Daily water levels on Lake Manitoba in 2011.

APPENDIX 6

MAXIMUM MEAN MONTHLY STAGE OF LAKE MANITOBA UNDER ASSUMED DIVERSON CONDITIONS

MAXIMUM MEAN MONTHLY STAGE OF LAKE MANITOBA, UNDER ASSUMED DIVERSION CONDITIONS						
		Lake Manitoba Uncontrolled		Lake Manitoba Controlled (as shown in Appendix 5)		Increase in Water Level
Year	Assinib Div 1n Ac Ft	Without Diversion (recorded)	With Diversion (computed)	Without Diversion (computed	With Diversion (computed)	
1916	530,000	812 8[1]	813 1	812 7	813 0	0.3
1923	630,000	812 2[1]	814 6	811 8	812 2	0.4
1948	710,000	813 3	813 5	811 5	812 0	0.5
1950	630,000	815 9	816 0	812 7	812 8	0.1
1955	150,000	814 9	815 4	812 8	812 9	0.1
1956	865,000			811 5	712 1	0.6
*Stages at Delta, others at Steeprock						
Source : Report on Measures for the Control of the Waters of Lakes Winnipeg and Manitoba, 1958, Appendix 7, p. 9.						
1976	1,400,000	814.5[1]	N.C.	N.C.	813.4	
2011	4,739,000	816.8[1]	N.C.	814.4[2]	817.1	2.7
		← No Fairford →		← **With Fairford** →		
		← With or without Portage Diversion →		←With or without Portage Diversion→		

As added by Wim Veldman

[1] As per Manitoba's computation [2] As per Veldman's computation

N.C. = Not computed