

MUNICIPAL SILICA SAND ADVISORY COMMITTEE

The Municipal Silica Sand Advisory Committee is made up of the following municipalities: Rural Municipality of Tache, Rural Municipality of Ste. Anne, Rural Municipality of La Broquerie, Rural Municipality of Hanover, Rural Municipality of Brokenhead, Rural Municipality of Reynolds, Rural Municipality of St. Clements, City of Steinbach.

Its mandate is to serve as an advisory body to the Council of each participating Municipality regarding an independent review and obtaining of information to better understand the effects that may arise as a result of silica sand mining operations, and in particular the proposal for silica sand mining proposed by Sio Silica, specifically including, but not limited to:

- (a) any impact on municipal infrastructure;
- (b) any land use issues including undue contamination;
- (c) any water quality issues;
- (d) any possible environmental impacts or issues including effects on the aquifer; and
- (e) any impacts to municipal services.

MSSAC is coordinated through the Rural Municipality of Tache, the contact info of which is as follows:

28007 Municipal Road 52N
Dufresne MB R5K 0N7
Telephone: 204.878.3321

MSSAC WITNESS LIST

1. MSSAC Representative
2. Christine Hutlet
3. Doug McNeil
4. Jason Mann (expert witness)
5. Bert Smith (expert witness)

MSSAC EXPERT BIOGRAPHIES

1. Doug McNeil

EDUCATION: Master of Engineering, University of Manitoba, 1996.
Bachelor of Science in Civil Engineering, University of Manitoba, 1983.
Both with a focus on Water Resources Engineering.

EXPERIENCE:

Sep' 19 to present Engineer-in-Residence, University of Manitoba

This is a part-time position in the Price Faculty of Engineering, where I do casual lectures in both undergraduate and graduate courses. In addition, I mentor Co-op students in their work placements and I am involved in the new Leadership Development Program.

Jul '19 to Present McNeil Consulting Inc. - President

In July 2019, I was named Ontario's Special Advisor on Flooding. I undertook detailed investigations, tours of flooded areas and stakeholder engagements. I submitted a final report titled "An Independent Review of the 2019 Flood Events in Ontario: A Report to the Hon. John Yakabuski, Minister of Natural Resources and Forestry" on October 31, 2019. The Province publicly released the report on November 28, 2019.

In July 2020, I contracted with AECOM Canada Limited to undertake a "Peer Review of the Fall 2019 Red River Floodway Operation Report by Manitoba Infrastructure" to provide the overall peer review of the provincial report, including the AECOM technical review of the HEC-RAS modeling. The report was submitted in Fall 2020.

In January 2021, I was appointed by the Rural Municipality of Tache, Manitoba to provide engineering advisory services in relation to a silica sand extraction and processing proposal. This project is on-going.

In February 2021, I contracted with AECOM Canada Limited in a senior review capacity (hydraulic components) on the federal government's dam safety review of the St. Andrews Lock and Dam, in Lockport, Manitoba. My role on this project is complete.

In February 2021, I was contracted by the Canadian Water Resources Association to be the Canadian Member of an Independent Peer Review Group, to provide peer review of Phase 1 of the International Joint Commission's "Expedited Review of Plan 2014" (Lake Ontario outflow regulation). Our final report was submitted in November 2021 and has been publicly released.

In January 2023, I was contracted by the International Joint Commission to be the Canadian Member of an Independent Peer Review Group, to provide peer review of Phase 2 of the International Joint Commission's "Expedited Review of Plan 2014" (Lake Ontario outflow regulation).

Apr '15 to May '19 City of Winnipeg – Chief Administrative Officer

As the CAO, I was the administrative head of the Winnipeg Public Service with over 9,000 employees and an annual budget of approximately \$1.5 billion. I worked closely with Mayor, Council and the senior management team to ensure that the highest quality services were delivered to the citizens of Winnipeg, that service delivery was integrated and efficient in the use of resources, and that Council's policy direction was reflected in programs, services, initiatives and practices. The Mayor and Council held me responsible for ensuring that the City of Winnipeg was ready for flooding each Spring, and specifically the Spring of 2019, given the early forecast of a significant flood. In fact, I postponed my retirement for one month in case of significant flooding, which ultimately did not occur.

**Jun '09 to Mar '15 Province of Manitoba – Deputy Minister of
Manitoba Infrastructure and Transportation (MIT)**

As Deputy Minister, I was the administrative head of a large and complex organization with over 3,000 staff and an annual budget of \$1.6B, including over \$800M in capital projects. I was responsible for a vast infrastructure

network of roads, bridges, drains and culverts, multi-functional dams and reservoirs (e.g. Shellmouth Dam), diversion channels (e.g. Red River Floodway, Portage Diversion), pumping stations, remote northern airports and marine vessels, and government owned and leased buildings. I was also responsible for services such as hydrologic (flood) forecasting, motor carrier permits and enforcement, air ambulance flights, water bomber operations, government wide accommodations (including land and property purchases, sales and leases), mail management, procurement, and government security services. I oversaw three Special Operating Agencies: The Crown Lands and Property Agency (including land and property expropriations), the Material Distribution Agency and the Vehicle and Equipment Management Agency. Finally, I was the Deputy Minister responsible for the Emergency Measures Organization, which involved Business Continuity Planning, Critical Infrastructure and Cyber Security.

During my tenure, the Province experienced two significant floods – one in Spring through Summer 2011 and a summer flood in 2014. I was part of a small Deputy Minister team that led all efforts to deal with flooding on Red, Assiniboine, Souris and North Saskatchewan Rivers and Lake Manitoba and Lake St. Martin. We also dealt with flood recovery.

During the 2011 province-wide flood, as an experienced flood engineer, I oversaw the extensive emergency flood operations that included a temporary earth dike in The Pas, Manitoba, temporary sandbag and clay dikes in Brandon and Souris, Manitoba, diking operations around Lake Manitoba, emergency dike raisings along the Portage Diversion and the Assiniboine River, temporary electrical/mechanical upgrades to the Portage Diversion gate structure, the construction of the emergency diversion channel from Lake St. Martin to Lake Winnipeg, and the intentional dike breach along the Assiniboine River near Portage la Prairie.

Dec '03 to Jun '09 Manitoba Floodway Authority (MFA)

I held two consecutive positions – first as VP of Hydraulics and then as VP of Engineering & Construction. I was a member of the Executive Team and provided strategic advice and solutions to the Executive Team, the CEO and the Board of Directors that resulted in the successful undertaking of the

Floodway Expansion project (\$665M budget). The hydraulic capacity expansion of the new (from a 1:100 year Annual Exceedance Probability to a 1:700 year Annual Exceedance Probability) was achieved on schedule before spring 2009 and the project was completed in early 2014 at \$25M under budget.

I was involved in all facets of the management and operation of the Manitoba Floodway Authority, including: project management; public engagement; land acquisition; asset management; finance; insurance and risk management; Indigenous initiatives; intra-departmental liaison; human resources; reports to Committees, the Board of Directors, Treasury Board and Cabinet; briefing notes to the Minister; liaison with the federal government, including the Federal cost-sharing agreement; legal issues; communications, and; the Project Management (Labour) Agreement.

I led the MFA/Consultant team during the environmental impact assessment and Clean Environment Commission public hearing process and developed an on-going working relationship with senior officials of the regulatory agencies on various issues that arose during the design and construction phases.

I was responsible for the construction tendering strategy and construction phasing for the overall project, which was a challenge given that the federal share of the funding came in three tranches in the initial years of the project schedule.

I oversaw the contracts with consulting engineers, contractors, utility companies and railways and facilitated and resolved the significant issues.

I had direct dealings with and developed a good working relationship with many Provincial departments and with senior members of the Federal Departments of Infrastructure, Transport, Western Economic Diversification, Fisheries and Oceans, and Agriculture and Agri-Food.

Given that the Floodway exists to protect Winnipeg, I was responsible for ensuring that the Floodway was in a state of readiness each spring and that

construction did not prevent or interrupt the use of the Floodway. Floodway operation was required in the Springs of 2006 and 2009.

May '83 to Dec '03 City of Winnipeg, Water and Waste Department

Over the course of my career at the Department, I undertook and managed planning, design and construction projects in the water, wastewater, land drainage and flood protection branches. This included ensuring that new developments met or exceeded flood protection (including floodplain) legislation or by-law requirements. Further, I was responsible for ensuring that the existing flood protection works (dikes, flood pumping stations, operations manual) were maintained and appropriate budgets were established for upgrading these system components, and that an annual report was provided to the Province of Manitoba's Provincial Diking Commissioner, which was a watchdog role established under the *Diking Authority Act*.

In 1996, Winnipeg and the Red River valley in Manitoba experienced a flood with a 1:50 year Annual Exceedance Probability, the largest flood in 17 years (the 1979 flood was of similar magnitude). There was a lot of staff turnover over those 17 years and I was tasked with leading the efforts to ensure that the operations manuals were complete and that we had the staff, equipment and materials to fight the flood. This involved a significant education campaign for the residents that were affected in the low-lying areas. This experience provided valuable training and experience in managing a large-scale emergency situation, and prepared us for the following year.

During the "Flood of the Century" in 1997 (so named as it was a flood with a 1:100 year Annual Exceedance Probability), I was part of a three person team that led the City's flood fighting efforts over a period of several weeks. This effort repeated activities from the previous year but given that the flood was so much larger, the activities were exponentially increased and involved raising existing primary dikes with clay, importing thousands of sandbags and mobile pumps, evacuations of neighborhoods, and eventually bringing in the Canadian Armed Forces to assist.

Following the Flood of 1997, I was named as the City's representative on various technical, steering and advisory committees that led to the Floodway Expansion project, including the 1998 Manitoba Water Commission's review of actions taken during the 1997 Flood, the 1999 Review of the Floodway Operating Rules, the 2001 International Red River Basin's Task Force reports to the International Joint Commission, and the 2002 Flood Protection Studies of mitigation measures for Winnipeg.

Federal and Provincial funding programs were provided after the 1997 Flood and I was project manager for the design and construction of secondary dikes throughout the City of Winnipeg from 1998 to 2003.

AWARDS:

The 2012 Leadership Award from the Association of Professional Engineers and Geoscientists of the Province of Manitoba for my leadership role during the 2011 flood in Manitoba.

AFFILIATIONS:

- Member in good standing with Engineers Geoscientists Manitoba
- Canadian Water Resources Association, Manitoba Chapter Board member

PROFESSIONAL PRESENTATIONS:

Over the years, I have presented at numerous conferences and workshops on various water resources/flooding topics, such as for the following:

- Institute for Catastrophic Loss Reduction;
- Canadian Society for Civil Engineering;
- Association for the Advancement of Cost Engineering International;
- Committee on River Ice Processes and the Environment;
- Federal Emergency Preparedness Coordination Committee (Manitoba);
- 4th International Symposium on Flood Defence;
- Canadian Public Works Association;
- Canadian Risk & Hazards Network;

- Canadian Water Resources Association.

2. Jason Mann

SEE ATTACHED DOCUMENT

3. Bert Smith

SEE ATTACHED DOCUMENT

MSSAC SUBMISSION OUTLINE

A. Role and Mandate of MSSAC

- MSSAC members
- MSSAC terms of reference

B. Legislation Governing the CEC Review

- *The Environment Act* and the Licensing Procedures Regulation
- *The Water Protection Act*
- Sustainable Development Guidelines
- CEC terms of reference
- the standards that need to be met by the applicant for the license application to be approved

C. Deficiencies

D. Concerns

E. Geotechnical - Overall Geotechnical Voidspace Stability with Extraction of the Sands

- a. Recommendations

F. Groundwater - Well Extraction Operations

- a. Recommendations

G. Groundwater – Water Quality and Water Levels

- a. Recommendations

H. Groundwater – Water Treatment Prior to Re-Injection

- a. Recommendations

I. Groundwater Monitoring and Impact Mitigation Plan

- a. Recommendations

J. Progressive Well Abandonment Plan

a. Recommendations

K. Waste Characterization and Management Plan

a. Recommendations

MSSAC DOCUMENTS TO BE RELIED UPON

1. *Regional Cumulative Effects Assessment*, Manitoba Clean Environment Commission, May 2018, available at http://www.cecmanitoba.ca/hearings/regional-cumulative-effects-assesment/doc/FinalReport/RCEA_Design_Web_Accessible_May24.pdf
2. *Red River Floodway Expansion*, Manitoba Clean Environment Commission, June 2005, available at http://www.cecmanitoba.ca/doc/commission_reports/Commissioned-Reports-2004-2005-Red_River_Floodway_Expansion.pdf
3. *Pembina Valley Water Cooperative Supplemental Groundwater Supply*, Manitoba Clean Environment Commission, February 2007, available at http://www.cecmanitoba.ca/doc/commission_reports/Commissioned-Reports-2006-2007-Pembina_Valley_Water_Cooperative1.pdf
4. MSSAC Terms of Reference
5. *Vivian Silica Project website extracts*, Sio Silica, available at <https://viviansilicaproject.com/facts-matter>
6. *Manitoba Water Quality Standards, Objectives, and Guidelines*, Manitoba Water Stewardship, November 28, 2011, available at https://www.gov.mb.ca/sd/pubs/water/lakes-beaches-rivers/mb_water_quality_standard_final.pdf
7. *RM of Springfield Well Survey Results*, October 1998
8. *Principles and Guidelines of Sustainable Development*, Manitoba Round Table on Environment and Economy, available at https://www.gov.mb.ca/mr/land_use_dev/pubs/pgsd.pdf
9. *Springfield Mayor notes "significant concerns" with CanWhite proposal*, Steinbach Online, October 1, 2021, available at: <https://steinbachonline.com/articles/springfield-mayor-notes-significant-concerns-with-canwhite-proposal>
10. *Projects' effect on water supply questioned*, Winnipeg Free Press, December 6, 2022, available at <https://www.winnipegfreepress.com/breakingnews/2022/12/06/projects-effect-on-water-supply-questioned>

11. *Former CanWhite employee alleges well contamination, lax site safety*, The Carillon, November 16, 2021, available at <https://www.winnipegfreepress.com/the-carillon/local/2021/11/16/former-canwhite-employee-alleges-well-contamination-lax-site-safety>
12. “Sio Silica – MSSAC Expert Review Report on Items for Discussion”, KGS Group, February 13, 2023