Canadian Centre for Policy Alternatives | Manitoba
January 2023

THE BURDEN OF CONCERN

The Healthy Environment, Healthy Neighbourhood Project

Authors: Alexandra Caporale and Heather Fast

A Report by the Manitoba Eco-Network

ISBN 978-1-77125-631-5

This report is available free of charge from the CCPA website at **www.policyalternatives.ca**. Printed copies may be ordered through the Manitoba Office for a $10 fee.

Help us continue to offer our publications free online.

We make most of our publications available free on our website. Making a donation or taking out a membership will help us continue to provide people with access to our ideas and research free of charge. You can make a donation or become a supporter on-line at www.policyalternatives.ca. Or you can contact the Manitoba office at 204-927-3200 for more information. Suggested donation for this publication: $10 or what you can afford.

The opinions and recommendations in this report, and any errors, are those of the author, and do not necessarily reflect the views of the publishers or funders of this report.





CCPA
CANADIAN CENTRE
for POLICY ALTERNATIVES
MANITOBA OFFICE

Unit 301-583 Ellice Ave., Winnipeg, MB R3B 1Z7
tel 204-927-3200

email ccpamb@policyalternatives.ca

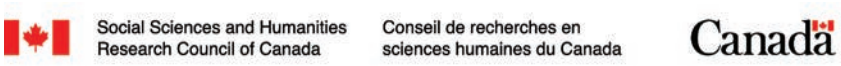












Land and Resource Acknowledgment

This research project was conducted on Treaty 1 territory, the traditional lands of the Cree, Anishinaabeg, Oji-Cree, Dakota, and Dene Peoples, and the homeland of the Métis Peoples. It is also important to acknowledge that the water we drink comes from Treaty 3 territory and the power we use comes from Treaty 5 territory and beyond.

In light of our subject matter in the report, we reflect on the reality that the consumer electronics we take for granted to assist all aspects of our work contain minerals and precious metals that have likely been mined from all over the world. We recognize that the lands that are mined and the people who do that labour may be facing environmental injustice as well. We acknowledge this common thread. Through this work, we envision a brighter, healthier future for the land and its people and an end to environmental injustice everywhere.

Acknowledgments

This project would not have been possible without the great insights, patience, and support of so many people in our community who are passionate about social justice and environmental health.

Glen Koroluk, for steering the Manitoba Eco-Network bravely forward.

Sarah Cooper, for their endless patience and support with getting the ethics protocol submitted, resubmitted, and approved, as well as providing calm support and great questions for the report production process.

Heather Fast, for her tireless enthusiasm and passion for using the law to protect the environment and shepherding student researchers.

Folarin Soladem, for writing a powerful thesis project about contamination in St. Boniface neighbourhoods and generously creating GIS maps to help us tell the story of our research.

Merci to Hélène Bilodeau for translating our Executive Summary.

Pro bono students Prachi Sanghavi, Alyssa Thomas, and Ryan Hall, Environmental Law Group students Julia Beal, Jenny Bi, Brenden Drews, Jenna Jeffrey, Nicholas Mark, Kerith Tung, and independent researcher Shaylyn Pelikys for giving their time to this project to learn how to do legal research. Thanks to Katrine Dilay and again to Heather Fast for providing student support.

The Advisory Committee, consisting of Michelle Berger, Jennifer Chen, Sarah Cooper, Catherine Flynn, Dr. Jon Gerrard, Sande Harlos, Guy Jourdain, Malaya Marcelino, Lea Mutch, Greg Selinger, Shirley Thompson, Christine Trickey, Byron Williams. We appreciate their time commitment and willingness to provide personal stories and guidance.

Finally, big thanks to the Manitoba Research Alliance (MRA) and the Manitoba Law Foundation (MLF) for their generous funding support. Without these resources, this project could not have happened.

We aspire for all environmental justice projects to be funded and supported as we have been, which will enable meaningful change and healing for all who share this land.

Table of Contents

7 **Executive Summary**

12 **Résumé**

17 **Introduction**

24 **Methodology**

32 **Contaminated Sites: An Overview**
- Sites of Concern
- Point Douglas
- Previous Studies
- Explosions and Fires
- Contaminating Substances

62 **Regulatory Overview**
- The Government of Manitoba: Provincial Responsibility and Regulation
- The City of Winnipeg: Municipal Powers and the Environment
- The Government of Canada: The Role of the Federal Government

91 **Research Findings**
- Emerging Topics In Interviews

134 **Analysis**
- Implications For Environmental Justice
- Recommendations

149 **Conclusion**

152 **Bibliography**

157 **References: Regulatory Overview**

163 **Appendix 1 – Other Type Of Heavy Metal Contaminants Common In Industrial Areas**

167 **Appendix 2 – Interview Questions**

171 **Appendix 3 – Interviewee Quotes Describing Environmental Justice**

174 **Appendix 4 – Bill S-5 Senate Submission**

180 **Appendix 5 – Bill C-226 Advocacy Letter**

185 **Endnotes**

Maps

All maps created by Folarin Solademi

34 **Map 1: Map of Designated Impacted and Contaminated Sites**

35 **Map 2: Map of the Study Area**

37 **Map 3: Map of Zoning Designations in Point Douglas**

43 **Map 4: Map of Zoning Designations in St. Boniface**

51 **Map 5: Explosions and Fire Sites, St. Boniface, Winnipeg**

52 **Map 6: Warehouse Fire in Point Douglas**

56 **Map 7: Map of Industrial Facilities of Concern, Playgrounds, Parks, and Tot Lots**

Photos

All photos taken by MbEN or contributed anonymously by project participants

38 **Photo 1: A Playground in Point Douglas**

43 **Photo 2: Happyland Park, a Popular Park in St. Boniface, has been Tested for High Levels of Lead**

51 **Photo 3: Site Cleanup after Warehouse Fire**

53 **Photo 4: Site Contaminated with Lead**

59 **Photo 5: Auto Shredder Residue**

60 **Photo 6: A Busy Scrap Yard**

93 **Photo 7: Tanker Cars Travelling Through a Residential Area**

94 **Photo 8: An Auto Recycling Yard**

95 **Photo 9: A Playing Field is Contaminated with Lead**

96 **Photo 10: Crushed Cars**

97 **Photo 11: A Shredder Fire**

103 **Photo 12: Shopping Cart with Garbage Near an Industrial Area**

104 **Photo 13: A Contrast of Green Space and Intensive Industrial Activity**

111 **Photo 14: Industrial Haze**

Tables

38 **Table 1: Point Douglas Youth Population by Age 2016**

39 **Table 2: Point Douglas Age Breakdowns by Household 2016**

39 **Table 3: Point Douglas English/French Speakers 2016**

40 **Table 4: Point Douglas Indigenous Identity 2016**

40 **Table 5: Point Douglas Visible Minorities 2016**

40 **Table 6: Point Douglas Residents Born Outside of Canada 2016**

41 **Table 7: Point Douglas Educational Attainment 2016**

41 **Table 8: Point Douglas Employment, Unemployment, Job Participation Rate 2016**

41 **Table 9 : Point Douglas Individual Average and Median Income 2016**

42 **Table 10: Point Douglas LIM-AT and LICO-AT 2016**

44 **Table 11: St. Boniface Youth Population by Age 2016**

44 **Table 12: St. Boniface Age Breakdowns by Household 2016**

45 **Table 13: St. Boniface English/French Speakers 2016**

45 **Table 14: St. Boniface Indigenous Identity 2016**

46 **Table 15: St. Boniface Visible Minorities 2016**

46 **Table 16: St. Boniface Residents Born outside of Canada 2016**

46 **Table 17: St. Boniface Educational Attainment 2016**

47 **Table 18: St. Boniface Employment, Unemployment, Job Participation Rate 2016**

47 **Table 19: St. Boniface Individual Average and Median Income 2016**

47 **Table 20: St. Boniface LIM-AT and LICO-AT 2016**

77 **Table 21: What Can a Zoning By-law Include in The City of Winnipeg?**

Figures

58 **Figure 1: Understanding Microns**

79 **Figure 2: Authority of Plans Guiding City of Winnipeg Activities**

171 **Figure 3: Emerging Themes from Community Interviews**

Disclaimer

This report provides information about laws and policies related to toxic substances and their impacts in Winnipeg, Manitoba. This data and corresponding recommendations are intended to provide policy makers in Winnipeg, Manitoba, and at the federal level with information about potential solutions that could be implemented to improve access to environmental justice for impacted community members.

You must not rely on the information in this report as an alternative to legal advice from an appropriately qualified professional. If you have any specific questions about any such matter, you should consult an appropriately qualified professional. You should never delay seeking legal advice, disregard legal advice, or commence or discontinue any legal action because of information in this report.

We do not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report.

Executive Summary

THE *HEALTHY ENVIRONMENT, Healthy Neighbourhood* (HEHN) project was developed to explore the first-hand experiences of Winnipeg's residents in the inner city and mature neighbourhoods who live near industrial and contaminated sites. For decades, residents in our project area have sought help from all levels of government to help stop the negative impacts they have experienced due to toxic chemicals in their neighbourhoods.

Inspired by these efforts, this project was intended to support the actions of community advocates and build on the advocacy work they have already accomplished. Through interviews, literature reviews, and regulatory research, we have sought to:

- gather data directly from community members living in the project area;
- examine government responses to land-use conflicts between industrial and residential zones; and
- explore the policy and legal options available to community members seeking environmental justice and better protection of the environment.

Background:

A small team of researchers from the Manitoba Eco-Network undertook the HEHN project with an environmental justice lens and a community-based

research approach. With financial support from the Manitoba Research Alliance and the Manitoba Law Foundation, project activities took place between 2021–2023.

This project was inspired by the community members in Winnipeg who have, for many years, unsuccessfully sought assistance from government to protect themselves and their families from the negative consequences of nearby industrial activity (such as noise, odors, explosions, and unusual particulate matter observable in the air). While they have waited for a solution, community members have faced health and safety hazards from sources seemingly beyond their control, such as high levels of contaminants in the air and soil. Residents feel powerless and have been unable to find effective tools to compel government and industry officials to address concerns and solve environmental problems in their neighborhoods.

One of the main goals of this project was to generate information that community members can use to support ongoing efforts to understand, control, or cease the pollution that may be harming their neighbourhoods. This includes developing recommendations for policy and legal changes to improve Manitobans' access to environmental justice and strengthen environmental protections. We view this endeavour as the first in a series of projects and advocacy efforts seeking to assist community members in Manitoba seeking policy and legal change.

Process:

The work of MbEN's project team was supported by a range of community members and pro bono legal researchers from the University of Manitoba. We began this project by reviewing scientific and legal publications addressing industrial pollution, land use, and available recourse to hold polluters accountable. We also examined the current policy and legal landscape at the provincial, municipal, and federal levels. Through confidential community interviews, we identified the daily difficulties of living near industrial sites, as well as the gaps in knowledge about the long term effects of living and working in the project area. Finally, we used the data we collected to develop recommendations for legal and policy solutions with potential to improve living conditions in our study area, better empower impacted community members, and improve access to environmental justice in Manitoba.

We also enlisted the guidance of an Advisory Committee, which was made up of community members, academics, and community leaders

with ties to the affected areas. The Advisory Committee met periodically throughout the project and provided insight and advice about the research process. The insights from interview participants and the Advisory Committee played a major role in helping us identify a broader range of potential solutions for ensuring better environmental safety and community access to environmental justice.

Key challenges faced during this project include delays in the ethics approval process, discovery of significant information gaps in scientific and legal literature, and a lack of resources that limited the number of researchers and community members that could be involved. MbEN has learned a lot from this project and will apply this knowledge to future work in this area.

Results:

Through the HEHN project we have documented the concerns of community members living and working in our project area. Our interviews showed that residents near industrial sites feel that they are ignored by the government when they try to seek remedies for the negative impacts they live with. They report uncomfortable mental and physical symptoms and contend with many types of pollution, including metal dust, visible air pollution, and noise. They worry about their present and future health and struggle with unresolved questions about potential risks. Overall, project participants identified the need for significant policy and legal changes to improve their access to environmental justice and ability to hold government and industry accountable for the negative environmental and health impacts they experience.

The scientific, legal and policy research undertaken as part of this project has yielded more in-depth information about the potential dangers of lead and other heavy metals, particulate matter, volatile organic compounds, auto shredder residue, and noise. Our policy and legal research has better evidenced that community members in our study area have limited access to environmental justice in the context of toxic substance regulation, clean-up of contaminated sites, and enforcement of existing environmental and health requirements. Although there is more work to be done in this area, this project has started to fill existing information gaps and identify opportunities for future research.

Recommendations:

The recommendations we developed based on our research and feedback from community members identify a range of potential options that could relieve the environmental injustices pervasive in our research area. Recommendations include the recognition of environmental human rights, reform of land-use planning requirements, greater data transparency for the public, and sufficient funding for future community-based research and advocacy. We also recommend more consistent enforcement and publication of enforcement data.

The team behind the HEHN project hopes this work will enable meaningful and effective changes for the residents and workers who confided in us and shared their fears about nearby industrial activities. We hope this work will pave a clear path toward strong environmental protections and better public access to environmental justice. Moving forward, we will continue to amplify community voices in ongoing conversations about environmental justice and seek to empower all Manitobans to better protect themselves and their neighbourhoods.

Summary of Regulatory and Policy Recommendations

Commitment To Environmental Justice

1. Recognize the environmental rights of Manitobans.
2. Adopt a comprehensive environmental justice lens when reforming law and policy.
3. Adopt policies and laws that better protect community advocates.
4. Undertake more research into the relationship between area incomes, levels of pollution, and ability to effectively ask for environmental intervention in Winnipeg.

Land Use Planning

5. Develop a more inclusive and comprehensive regulatory approach to the redevelopment of brownfield and contaminated/remediated sites in Winnipeg.
6. Relocate the freight trains away from residential zoned areas.

Improving Accountability and Enforcement

7. Adopt new legal tools and amend existing laws to improve enforcement of existing regulatory requirements and government accountability.

8. Publish more enforcement data at both the municipal and provincial levels.

Independent Health and Environmental Research

9. Undertake more independent, community-based public health and environmental research. This includes, but is not limited to, collection of more information regarding:

    a. Blood Lead Levels,

    b. Contamination of precipitation (e.g. rain, snow) and groundwater, and

    c. Urban wildlife and ecosystem impacts.

Résumé

LE PROJET ENVIRONNEMENT sain, quartier sain (ESQS) a été élaboré en vue d'évaluer l'impact de la proximité de sites industriels et contaminés sur les résidents du centre-ville et des vieux quartiers de Winnipeg. Pendant des décennies, les résidents de la zone visée par le projet ont cherché à obtenir l'appui de tous les niveaux de gouvernement pour mettre fin aux effets négatifs de l'exposition à des produits chimiques toxiques dans leur environnement immédiat.

Le projet ESQS a pour but de soutenir les actions des défenseurs communautaires et à d'utiliser le travail de plaidoyer déjà accompli comme tremplin pour assurer leur essor. À partir d'entretiens, de revues de littérature et d'études normatives, nous avons cherché à recueillir des données directement des membres de la communauté vivant dans la zone en question, à examiner les réponses des gouvernements aux conflits liés à l'utilisation du territoire entre les zones industrielles et résidentielles et à explorer les options en matière de politiques et de lois et règlements qui s'offrent aux membres de la communauté désireux d'obtenir justice et une meilleure protection de l'environnement.

Contexte

Une petite équipe de chercheurs du Manitoba Eco-Network (MbEN) a entrepris le projet ESQS avec une optique de justice environnementale et une approche de recherche communautaire. Financées par la Manitoba Research Alliance

et de la Manitoba Law Foundation, les activités du projet se sont déroulées en 2021 et en 2022.

Ce projet a été inspiré par les membres de ces communautés de Winnipeg qui, pendant de nombreuses années, ont tenté en vain d'obtenir l'aide des gouvernements pour se protéger et protéger leurs familles des répercussions néfastes de l'activité industrielle à proximité de leurs résidences, notamment du bruit, des odeurs, des explosions et des particules inhabituelles de matière observable dans l'air. Pendant qu'ils attendent une solution, les membres de cette communauté voient leur santé et leur sécurité menacées par des sources apparemment hors de leur contrôle, telles que des niveaux élevés de contaminants dans l'air et le sol. Ces résidents se sentent impuissants devant leur incapacité de trouver des moyens efficaces d'amener les représentants des gouvernements et de l'industrie à répondre à leurs préoccupations et à résoudre les problèmes environnementaux dans leurs quartiers.

L'un des principaux objectifs de ce projet était de produire de l'information que les membres de la communauté pourraient utiliser pour appuyer leurs efforts pour comprendre, contrôler ou enrayer la pollution potentiellement nuisible dans leurs quartiers. Aussi, des recommandations de changements à l'égard des politiques et des lois et règlements ont été élaborées en vue d'améliorer l'accès des Manitobains à la justice environnementale et de mieux protéger l'environnement. Nous considérons ce projet comme le premier d'une série de projets et d'efforts visant à aider les membres de communautés du Manitoba à obtenir des changements au moyen de politiques et de lois et règlements.

Processus

L'équipe du projet ESQS a bénéficié de l'appui de divers membres de la communauté et de chercheurs juridiques bénévoles de l'Université du Manitoba. La première étape de ce projet a été d'examiner les publications scientifiques et juridiques traitant de la pollution industrielle, de l'utilisation du territoire et des possibilités de recours pour responsabiliser les pollueurs, puis le paysage politique et juridique actuel aux niveaux provincial, municipal et fédéral. À partir d'entretiens communautaires confidentiels, nous avons relevé les difficultés de vivre à proximité de sites industriels et le manque de connaissances relatives aux effets à long terme de l'exposition aux polluants sur les personnes qui vivent et travaillent dans la zone du projet. Enfin, nous avons utilisé les données recueillies pour élaborer des recommandations de nature juridique et politique susceptibles d'améliorer les conditions de vie

dans notre zone d'étude, de donner des moyens d'agir aux membres de ces communautés touchés par la situation et d'améliorer leur accès à la justice environnementale au Manitoba.

Nous avons également trouvé repère parmi les membres d'un comité consultatif composé de gens de la communauté, d'universitaires et de leaders communautaires ayant des liens avec les zones touchées. Ces membres se sont réunis périodiquement tout au long du projet et ont offert leurs points de vue et leurs conseils relativement au processus de recherche. L'apport des participants aux entrevues et des membres du comité consultatif nous a permis de produire un large éventail de solutions potentielles visant à améliorer la sauvegarde de l'environnement et l'accès communautaire à la justice environnementale.

Les principaux défis rencontrés au cours de ce projet comprennent la lenteur des processus d'approbation éthique, la découverte de lacunes importantes en matière d'information dans la littérature scientifique et juridique et les ressources insuffisantes pour permettre la participation d'un plus grand nombre de chercheurs et de membres de la communauté. MbEN a beaucoup appris de ce projet et appliquera les connaissances acquises à ses travaux futurs dans ce domaine.

Résultats

Le projet ESQS nous a permis de documenter les préoccupations des membres de la communauté vivant et travaillant dans la zone visée. Nos entretiens ont montré ces personnes qui résident à proximité de sites industriels se sentent ignorées par les instances gouvernementales dans leurs démarches pour trouver des solutions aux problèmes auxquels ils sont confrontés en raison de leur environnement. Ils signalent un inconfort mental et physique et se disent exposés à de nombreux types de pollution, notamment la poussière de métal, la pollution atmosphérique visible et le bruit. Ils s'inquiètent pour leur santé actuelle et future et se débattent avec des questions non résolues relatives aux risques auxquels ils sont soumis. Dans l'ensemble, les participants au projet ont exprimé la nécessité de changements importants dans les politiques et les lois et règlements pour améliorer leur accès à la justice environnementale et leur capacité à tenir les gouvernements et l'industrie imputables des impacts négatifs de leurs actions sur leur environnement et leur santé.

Les recherches scientifiques, juridiques et politiques entreprises dans le cadre de ce projet ont permis d'obtenir des renseignements plus complets sur le potentiel de danger du plomb et d'autres métaux lourds, des matières

particulaires, des composés organiques volatils, des résidus de broyage automatique et du bruit. Notre examen des politiques et des lois et règlements ont permis de mieux démontrer que les membres de la communauté de la zones à l'étude ont un accès limité à la justice environnementale en matière de réglementation relative à l'usage de substances toxiques, de nettoyage des sites contaminés et d'application des exigences environnementales et sanitaires existantes. Bien qu'il reste encore du travail à faire dans ce domaine, ce projet a déjà comblé des lacunes en matière d'information et a permis d'établir des possibilités de recherche future.

Recommandations

Les recommandations que nous avons élaborées sur la base de nos recherches et des commentaires obtenus de membres de la communauté ont mené à l'établissement d'une gamme d'options qui pourraient atténuer les injustices environnementales omniprésentes dans notre domaine de recherche. Ces recommandations incluent la reconnaissance des droits humains en matière d'environnement, une réforme des exigences relatives à l'aménagement du territoire, une plus grande transparence des données accessibles au grand public et un financement suffisant pour la recherche et le plaidoyer communautaires. Nous recommandons également une application plus cohérente et la publication des données relatives à cette application.

Les membres de l'équipe du projet ESQS espèrent que leur travail entraînera des changements significatifs et efficaces pour les résidents et les travailleurs qui se sont confiés à eux et ont partagé leurs craintes concernant les activités industrielles tenues à proximité et mènera à l'établissement de mesures de protection environnementale solides et à un meilleur accès du public à la justice environnementale. Pour la suite, nous continuerons à prêter voix aux membres de la communauté dans les conversations en cours entourant la justice environnementale et à chercher des moyens d'aider tous les Manitobains à mieux se protéger et de protéger leurs quartiers.

Résumé des recommendations en matière de politiques, de lois et de réglements

Engagement envers la justice environnementale

1. Reconnaître les droits environnementaux des Manitobains.

2. Adopter une vision de justice environnementale plus globale lors de la réforme des lois et des politiques.

3. Adopter des politiques et des lois qui protègent mieux les défenseurs de la communauté.

4. Entreprendre davantage de recherches sur la relation entre les revenus des résidents de la région, les niveaux de pollution et la capacité de présenter des demandes d'intervention environnementale efficaces à Winnipeg.

Planification de l'utilisation du territoire

5. Élaborer une approche réglementaire plus inclusive et exhaustive du réaménagement des sites industriels désaffectés et des sites contaminés ou assainis à Winnipeg.

6. Délocaliser les trains de marchandises qui circulent dans des zones résidentielles.

Amélioration de la responsabilisation et de l'application

7. Adopter de nouveaux outils juridiques et modifier les lois existantes pour améliorer l'application des exigences réglementaires existantes et la responsabilisation des entités gouvernementales.

8. Publier davantage de données sur l'application des exigences réglementaires aux niveaux municipal et provincial.

Augmentation des projets de recherche en santé et en environnement

9. Entreprendre davantage de projets de recherche communautaires indépendants en matière de santé publique et d'environnement, notamment sur :

    a. les niveaux de plomb dans le sang,

    b. la contamination des précipitations (par ex. la pluie et la neige) et des eaux souterraines,

    c. l'impact de la pollution sur la faune urbaine et les écosystèmes.

Introduction

FOR MANY YEARS, inner city and mature neighbourhoods have suffered from the effects of living near former and ongoing industrial activity. The pollution from these industries has most resulted in high levels of lead in the air and soil, although other heavy metals are also involved (Wotton, 1982; Government of Manitoba, 2010; Government of Manitoba, 2018; F. S. Solademi, 2020; Parsons & Intrinsik Corp, 2022). For many years, community members have attempted to get assistance from the provincial government but have not been successful at having their needs met, which includes an environment free from unsafe industrial contamination. While they wait for a solution, they face frequent noise, unpleasant odors, fires, and explosions. Most of all, they live their lives with a need for answers about substances not immediately visible in the air and soil. The question of future health and safety looms over the communities we studied. The unknowingness itself has become a contaminant in residents' lives.

Since 1988, Manitoba Eco-Network (MbEN) has promoted positive environmental action by supporting people and groups in our community. MbEN's programming focuses on policy advocacy, engagement in consultation processes, and developing capacity-building tools that benefit the environmental non-profit sector and our member groups. We are a public-interest environmental organization seeking to promote and facilitate good environmental governance and the protection of Manitoba's environment for the benefit of current and future generations. By undertaking the *Healthy Environment, Healthy Neighbourhood* (HEHN) project, MbEN aims to share its

research and advocacy expertise to serve Winnipeg residents experiencing environmental injustice.

Our research was guided by three research questions:

1. *What are the documented and undocumented environmental and health impacts of living, working, and/or playing near industrial development and brownfield sites in Winnipeg's inner city?*
2. *Do people who live, work and/or play in Winnipeg's inner city, and particularly its low-income areas, have access to environmental justice? By what means can residents and grassroots organizations address environmental health concerns through city planning and government decision-making processes?*
3. *What is the City of Winnipeg's strategy to deal with conflicts between industrial and other land uses, and the remediation/redevelopment of brownfield sites? How can this be improved to increase the quality of life and access to environmental justice for all inner city inhabitants, but especially its most marginalized people and communities?*

These questions were developed with several objectives in mind. First, we wanted to gather some of our data about living near industrial sites from community members (including both residents and workers who may live elsewhere) who have a relationship to our study areas. Second, we wanted to explore the full story of what kinds of legal or policy avenues are easily available to Manitobans who are seeking environmental justice. We were especially interested in gauging the ease of access to any interventions, because it is possible for interventions to exist but have barriers to using them. Finally, we wanted to zero in on Winnipeg's specific strategies for handling land-use conflicts between industrial and residential zones, as well as creating a pathway for land remediation. The third question is where we turn our research into recommendations for solutions that would improve the quality of life for community members in the most impacted areas.

Report Overview

This report has three major parts. First, we examine scientific and legal perceptions related to industrial pollution, land use, and available recourses to hold polluters accountable. Background information is provided on the communities included in this study and the toxic substances they have

been exposed to is provided. We then examine the current policy and legal landscape at the provincial, municipal, and federal levels.

In the second part, the insights collected from people who live, work, and play in the study areas are discussed. We initially sought to study the downtown inner city of Winnipeg and surrounding areas. As the project progressed, we found our work focusing more closely on the neighbourhoods of St. Boniface, Point Douglas, and Weston. Ultimately, all our interviewees and related data-gathering came from St. Boniface and Point Douglas. Through these interviews with both private residents and community advocates, we heard about the lived experiences of being impacted by things like lead and other heavy metals, air pollution, and noise.

Finally, we synthesized the data we gathered to develop recommendations for improving living conditions in our areas of study, empowering impacted communities, and improving their access to environmental justice.

Gaps In Knowledge

The communities in Winnipeg affected by industrial contamination are trying to address several crucial gaps in knowledge that may be preventing them from solving the issues they face. Many of our interviewees have lived in their neighbourhoods long-term and have felt anxious about their health and safety in relation to nearby industries. Despite attempting to seek help or information from the local government about the troublesome impacts they have experienced (such as noise, odors, explosions, and unusual particulate matter observable in the air), they have yet to get satisfactory answers. Additionally, testing results of air and soil for contaminants and noise levels have shown concerning results (F.S. Solademi, 2020; Intrinsik, 2019; Government of Manitoba, 2010), but residents report conflicting or insufficient government response. Residents feel powerless to get accountability or meaningful changes made to the health conditions of the neighbourhood. Many are especially distressed about the health of children in the neighbourhood. They are unable to find effective tools to compel government officials to address concerns and solve contamination problems.

We designed this project to investigate and address these gaps in knowledge. We sought to understand common types of industrial contamination, especially lead contamination, which has been a top concern in Winnipeg for many years (Wotton, 1982, Government of Manitoba, 2010, Government of Manitoba, 2018, Intrinsik Corp, 2019, Solademi, 2020, Parsons & Intrinsik,

2022). We also examined the legal landscape to get the full picture of what is available and what is needed for effectively holding polluters and governing bodies accountable. Most importantly, we conducted confidential interviews with residents who live close to sites of suspected contamination to hear them describe their experiences and concerns. We also enlisted the guidance of an Advisory Committee, which was made up of community members, academics, and community leaders with ties to the affected areas. The Advisory Committee met periodically throughout the project and provided insight and advice about the research process. The combined information from interview participants and the Advisory Committee played a major role in helping us identify a broader range of potential solutions for ensuring better environmental safety and community access to environmental justice.

Significance

Amplifying community voices is important and significant work. By carrying out the HEHN project, the Manitoba Eco-Network has sought to support community advocates and build on the advocacy work they have already accomplished. This project uses a community research approach to collect information. We centered our data gathering on people's lived experience from inner-city and mature neighbourhoods that are located in close proximity to industrial and polluted sites. Residents in these types of neighbourhoods are affected by health and safety hazards from sources seemingly beyond their control. This project is designed to generate information that community members can use to support ongoing efforts to understand, control, or cease the pollution that may harm them. We hope our findings and recommendations will be useful for anyone, whether they are an individual with questions, a group of neighbours, or even someone who faces something similar in another city and is developing their own inquiry.

Through this project, we have encountered individuals who have responded to their living conditions with countless hours of volunteer work to document and seek help from the government. Interviewees have described sacrificing time and energy to build their case to agencies with the power to enact change, only to be repeatedly ignored. They also described the emotional and physical toll, whether from their volunteer work or the suspected health effects of living near contamination. Industrial pollution, accidents, noise, and disturbance were serious factors in their diminished quality of life. Four notable industrial accidents in the form of large explo-

sions and fires in recent years (Winnipeg Free Press staff, 2012; Alexandruk, 2015; CBC News, 2015a; Waldman & Piché, 2021) stand out as turning points in the way residents feel about the risks in their community.

Environmental Justice

When discussing access to justice in an environmental context, a range of terminology is used, including "environmental justice," "climate justice," "environmental racism," and "environmental injustice." In this project, we have chosen "environmental justice" to describe the lens we used to approach our research tasks and engagement with community members. We also recognized environmental justice as an outcome being sought by community members.

Environmental justice means different things to different people, but at its core, is focused on equity, empowerment, and meaningful policy and legal change. In North America, an environmental justice movement emerged in the 1980s. Grassroots advocates opposed systemic environmental racism in the United States which resulted in the development of toxic waste dumps in Black communities without regard for environmental and health impacts (Gosine & Teelucksingh, 2008). In Canada, the environmental justice movement includes a range of interests, individuals, and organizations focused on policy and legal reform to address past and ongoing harm to Indigenous, Black, and other marginalized communities because of systemic racism (Gosine & Teelucksingh, 2008).

Environmental racism, and systemic racism more generally, are also important terms to understand in the context of this project and our environmental justice approach. In Canada, systemic racism has negatively impacted Indigenous, Black and other marginalized groups and resulted in higher rates of unemployment, higher rates of income insecurity, higher rates of poverty, segregation in poor neighbourhoods, poorer health outcomes and disproportionate exposure to environmental hazards due to the placement of dangerous projects by the government. Environmental racism then, has been defined as "any [environmental] policy, practice or directive that differently affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or colour" (Gosine & Teelucksingh, 2008 p. 4). Depending on the impacted community, the environmental and health impacts experienced, and the jurisdiction(s) involved, perceptions of environmental racism and the corresponding negative consequences can

vary quite significantly. For example, in Manitoba, discussions of environmental racism are often focused on northern hydroelectricity generation and transmission developments.

The related term *environmental injustice* describes the intersectional experience of being exposed to environmental hazards and socioeconomic deprivation at the same time and place. These two experiences can compound each other and worsen outcomes for both health and unfair treatment based on income, race, ethnicity, culture, or newcomer status. (Hildebrandt, 2021, p. 2). Communities such as Point Douglas, the Weston School area, and parts of St. Boniface all experience environmental injustice due to their proximity to industrial sites of the past and present, their populations of low-income, Indigenous, and newcomer residents, and the lack of response from the government despite frequent appeals for help.

There are many examples of the ways environmental injustice can play out. For example, a recent study describes stark environmental and racial differences between US neighbourhoods that were "redlined" and those that enjoyed ongoing investment. Neighbourhoods that were redlined (marked in red on maps to dissuade financial investment) usually had large populations of non-white residents and were deprived of financial investment as well as services such as grocery stores and banks. These differences have persisted since the 1930s and did not improve after the practice of redlining was outlawed in the US in 1968. Many redlined areas were already close to industrial, rail, and major roadway developments. A key consequence of redlining is that the land is perceived as lower in value and therefore is more appealing to industrial industries and highway development projects. Additionally, there is the perception that the local residents are not resourced enough to adequately fight back against the proposed development (Zhong & Popovich, 2022) (Lane et al., 2022).

Here in Manitoba, environmental injustice is visible in many places, such as attempts to install oil pipelines across sensitive natural places and Indigenous territory, mining operations, residential developments near heavy industry, and inadequate protection from natural disasters. In our research, we found many examples of this dynamic in the city today, where city growth over time causes conflict. The industrial outskirts of the past are gradually being developed to accommodate residential areas. Certain neighbourhoods predate zoning bylaws altogether, resulting in residential and industrial uses coming into close contact. Even more troubling, residents in our interviews have said that new industrial uses have been opening in already active industrial areas, which increases the pollution burden on the

people who live in proximity. Thus, we have approached our research with a broad understanding of environmental justice, recognition of the historic and ongoing harmful impacts of environmental racism and environmental injustice and have sought solutions that will ultimately improve Manitobans' access to environmental justice.

Summary of Findings

From a legal standpoint, we have learned that Manitobans have limited environmental justice in the context of toxic substance regulation, clean-up of contaminated sites, and enforcement of existing environmental and health requirements. Our research unveiled more in-depth information about the potential dangers of lead and other heavy metals, particulate matter (PM), volatile organic compounds (VOCs), auto shredder residue (ASR), and noise, which are typical of the pollution found around industrial sites and railyards.

Finally, our interviews have shown that residents near industrial sites feel that they are ignored by the government when they try to seek remedies for the effects they live with. They worry about their present and future physical health and struggle with unresolved questions about their risks. They report uncomfortable symptoms and contend with many types of pollution, including metal dust, visible air pollution, and noise. They have lost the ability to grow edible vegetables in their yards, and their outdoor activities are limited by pollution.

Beyond everyday exposure to pollution, many interviewees have experienced fires and explosions. They are unsettled by the prospect that another dangerous industrial incident could happen again and potentially have worse consequences for the residential areas they live in. Overall, project participants identified the need for significant policy and legal changes to improve their access to environmental justice and the ability to hold government and industry accountable for the negative environmental and health impacts experienced in their communities.

Methodology

AS AN ENVIRONMENTAL non-government organization, MbEN fights for environmental justice by pushing for changes to policy and governance. Policy decisions have numerous effects on everyday residents when they are designed without consideration for the health, safety, and stewardship of humans and the environment. MbEN dedicates its expertise to grassroots causes and prioritizes local community knowledge to inform our work. The HEHN project is a strong example of this approach. The project was spurred by the initial efforts of people who are directly affected, not only by industrial pollution near their homes but also by civic history that created the land-use conflicts and the policies that allow it to go unchecked.

Our approach to research seeks to change the way power is structured, which inevitably leads to confronting the disempowerment experienced by affected people, natural ecosystems, and the land itself. Starting at the local level, we build public consciousness about these issues by seeking ways to learn from those who may not have access to the power and resources needed to make substantive change.

The HEHN project was designed with attention to the needs of vulnerable groups. Along with valuing the experiences of residents, we acknowledge intersecting identities and circumstances that further influence the ways people are impacted. In the HEHN project, we centred the reality that those who endure the worst impacts of pollution and environmental degradation tend to be people who have lower incomes, reduced educational opportunities, and are frequently Indigenous peoples, people of colour, and newcomers

to Canada. Children, seniors, and disabled people are disproportionately impacted by an unhealthy environment due to their more vulnerable status (Gochfeld & Burger, 2011, p. S53–S54). The HEHN project research reiterates the dangers of lead on young children's health and the legacy it leaves for generations. This fact highlights the importance of studying and advocating for environmental justice for vulnerable groups, both for the current time and future well-being.

We dedicated significant time and attention to thinking and planning our data gathering approach. We sought to undertake our community research by conducting interviews with people directly affected by contaminated sites through local residences or a professional role serving the community. Our Advisory Committee was also a source of local expertise and guidance. They provided discussion, insight, and advice at our periodic meetings.

Examining current laws and policies through an environmental justice lens is another mechanism for identifying ways to change power structures and reform existing regulatory frameworks. This requires a broader approach to legal and policy research and a willingness to think outside the box when it comes to identifying potential solutions. We used a comparative approach to consider laws and policies from other jurisdictions to better understand what is recognized as good practice in Canada. We anticipate the production of additional summaries and plain language documents to ensure our study results are as accessible as possible.

This research was conducted with oversight from the University of Manitoba Research Ethics Board in accordance with TCPS-2, which governs research with human subjects. This was required as part of our funding agreement because we chose to work with human subjects for interviews, albeit at very low risk.

Background, Policy, and Legal Research

Our background research was conducted over the course of a year and covered many topics related to contaminated sites and toxic substances. These topics include public health issues, environmental health issues, socioeconomic issues, enforcement, and current regulatory approaches. We also looked at the historic and contemporary issues that Winnipeggers face when they live near contaminated sites and high levels of industrial activity. Our sources included news reports, academic articles, government reports, and factsheets. We also reviewed academic literature, including scientific, policy, and legal

publications, and found surprisingly little about our focus on livability in neighbourhoods with residential and industrial areas in proximity.

In addition to these sources, we requested information from the Government of Manitoba and the City of Winnipeg. This includes information about the history of certain contaminated sites in our study area. These sites include both currently active industries as well as sites that were shuttered and remediated for new uses. We requested information directly from civil servants and undertook more formal information request processes, like the Government of Manitoba's environmental file search option. This file search yielded little information despite paying approximately $100 per site request.

As the project neared completion, we requested and received a large electronic file of in-depth information about all impacted and contaminated sites in our study area, including years of correspondence about site studies and remediation. Shortly after we received this file, all contaminated and impacted site files became publicly available in late September 2022 on the Government of Manitoba's updated online contaminated sites registry. It is unfortunate that these resources arrived late in the process because they contain a large amount of information that could not be fully examined and included in this project. However, we applaud the publication of this information. We expect it will be valuable for future projects.

With the help of pro bono law students, we also did thorough research about the legal framework for contaminated site remediation and management. One group of pro bono students from Pro Bono Students Canada were tasked with identifying relevant legal mechanisms and comparing jurisdictions across Canada. The other group of students from Robson Hall's Environmental Law Group undertook an examination of how environmental racism and environmental justice have been addressed in Canadian law. All of this research contributed to our goal of identifying avenues of legal recourse for the communities we are working with and helped develop our law and policy reform recommendations.

Advisory Committee

We were supported throughout the project by an Advisory Committee. This group met periodically throughout the project year and served several purposes for our work. The committee comprised 14 members from various roles in the study areas and larger institutions. Some members represented activist environmental law interests, while others were current or former

elected officials in the study areas. There were also professionals who work in Winnipeg public health. A few members were academics with the University of Manitoba, representing both the Natural Resources Institute as well as the City Planning department. Finally, and importantly, the group was rounded out by community members from our study areas.

Along with meeting every few months during the project, Advisory Committee members were often contacted with a variety of questions arising from the research work. Their support was invaluable for giving context to the problem at hand and helping the team to understand the passion behind the numbers and findings.

Qualitative Research

The core of our qualitative research is the information gathered through a series of interviews with community members who live, work, and play in the areas that we are studying. We chose to study inner-city and mature neighbourhoods in Winnipeg for a few reasons. First, community members from these areas reached out to us for help with their unique environmental problems. Secondly, inner-city areas are prone to environmental injustices. Thirdly, we know that mature neighbourhoods sometimes face land use conflicts if they were developed at a time before rigorous zoning or knowledge of environmental dangers. This conflict of land uses is clear in Point Douglas and St. Boniface due to the mix of land uses in the area as well as more industrial sites being in neighbouring communities. Finally, we were interested in identifying vulnerable communities in Winnipeg, which are of special importance for environmental justice research and the current law reform activities focused on updating the *Canadian Environmental Protection Act, 1999*.

There are a few definitions of importance that provide further insight into the characteristics of our study area. A *mature community* is defined as "an area of stability that will accommodate moderate growth and change that fits with the existing form and character of its location" (City of Winnipeg, 2011, p. F). These areas were generally developed before the 1950s on a grid-like pattern as topography allowed and have a low to moderate-density mix of residential and commercial development (City of Winnipeg, 2011, p. 82). Point Douglas and St. Boniface qualify as mature communities (City of Winnipeg, 2011, p. 79). This kind of community may be vulnerable depending on other

intersecting factors, such as income levels or the land-use mix that has been established over many years.

An *inner-city community* is defined as an area close to a downtown core that developed in large part by the proximity to employment, including industrial facilities. In older cities like Winnipeg, inner-city design is often reflected in small, poor-quality housing intended for working-class residents. It may also include housing that originally was designed for wealthier residents but now faces neglect as the populations shifted. Poor socio-economic factors, a population of diverse ethnicities and national origins, high-density development, inadequate greenspace, derelict buildings, pollution, and brownfield sites are also common features of inner cities. Roads tend to be in a grid pattern, or an area may be visibly scarred by a highway installed after established development (BBC, 2022). Point Douglas is the most like an inner-city area as described here.

In a general sense, *vulnerable communities* are defined as communities that include, but are not limited to, women, racial or ethnic groups, low-income individuals and families, individuals who are or have been incarcerated, individuals with disabilities, individuals with mental health conditions, children, youth and young adults, seniors, immigrants and refugees, individuals who are Limited English Proficient (LEP), and lesbian, gay, bisexual, transgender, queer, and two-sprit (LGBTQ2S) communities, or combinations of these populations (Law Insider, 2022).

From an environmental standpoint, *vulnerable communities* are defined as "a group of individuals within the general Canadian population who, due to either greater susceptibility and/or greater exposure, may be at greater risk than the general population of experiencing adverse health effects from exposure to chemicals" (Health Canada, 2019). Due to these distinctions, it's fair to say that vulnerable communities may have physical geographic identities, such as a particular neighbourhood, or they may be individuals and families that face unique challenges while being a part of a larger heterogeneous population.

Based on these definitions and demographic research, we conclude that many community members in our study areas likely meet the criteria for vulnerable populations. The environmental impacts are therefore likely worsening the experiences that some community members may be experiencing and may be doing so at a more common rate than in wealthier areas.

We recruited our interview participants with the help of our Advisory Committee and assistance from community groups in our study areas. Our community partners were chosen after a thorough investigation of community

non-profits in our study area. We included health organizations, veterans' organizations, community centres, and more. Once we achieved ethics approval, we contacted these groups about our project and provided them with text and image files to be used for posted ads and printed posters to reach their members. Those interested in speaking with us were encouraged to contact us via phone or email. We recruited a total of 14 interviewees, most of whom identified as community members who lived in the study area. Some respondents were workers who lived locally or elsewhere. Some interviewees also worked as community organizers. Each interviewee participated in a recorded meeting over Zoom and answered open-ended questions about their experiences living near a contaminated site. The interviews were planned to last approximately one hour, but most took 30 minutes or less. Our interview questions are listed in Appendix 2.

Once an interview was complete, the recording was sent for transcription. The transcript text was compared to the audio for a final accuracy check and then was sent to the interviewee for review and approval. Once the interviewee had given their approval (or three weeks had passed with no response), the transcription was anonymized and became part of the research. Interviewee names and identifying information, interview recordings, and raw transcripts were all stored in encrypted files. Once the transcripts were complete and the recordings were deleted, the transcripts were anonymized. This means a code number was assigned to the transcript to replace the name. Any identifying information was also removed. An ID key was created to organize the code numbers and interviewee names, and this was kept in an encrypted file separately from the interview transcripts.

Coding Approach

Interview transcripts were examined closely to identify key themes. These themes were entered into a spreadsheet as they emerged. Any corresponding quotes were pulled out and added to theme categories in a full-quote tracking spreadsheet. Theme categories ranged from general to highly specific (such as "General Industrial" versus "Metal/Auto Shredder"). New themes emerged and were added to the spreadsheet as we conducted our analysis. Interviews had common themes as a group as well as unique concerns particular to individuals. The spreadsheet evolved as an analysis tool during the first pass of reading the transcripts. It was, therefore, important to revisit the interview transcripts a second time using the spreadsheet's final form.

One of our challenges in interview analysis was recognizing that a single statement might invoke multiple themes. We felt that it was important to capture the multilayered messages in such statements, so we often counted the same quote in several different categories in the full-quote tracking spreadsheet. This helps to illustrate the nuance and depth of people's ideas about living near contaminated sites.

In addition to identifying themes, we also counted how often an interviewee would mention a given theme. We looked for occasions where the speaker described a theme and counted anything from a sentence fragment to a whole transcript paragraph as one quote or instance of discussion. We recorded the number of quotes by an interview subject about a specific topic on a separate frequency-tracking spreadsheet.

We understand a high frequency of topic mentions as an indicator of seriousness or concern for an interviewee. However, in some cases, a single quote might actually be a long discussion about an issue. We made note of any communications that might have greater depth than the numbers alone suggest. Therefore, it was important to consider both the full-quote spreadsheet and the frequency-tracking spreadsheet.

There was a broad range of community perspectives that were captured from residents of our study area. We also acknowledge that our interview participants only represent a small sample of these insights. We have sought to include all identified community concerns and suggestions as part of our data, regardless of how many times they were brought up in the interviews. While a high frequency of topic mentions served as one indicator of importance, we also view this research as the first step in an ongoing conversation with community members. We tried to create as many opportunities for further discussion as possible. Therefore, our recommendations address a range of different concerns and suggestions for systemic change and regulatory reform that range from high-level policy change to specific amendment or adoption of legal mechanisms.

Public Advocacy

Public advocacy generally involves "deliberate actions designed to influence public policies or public attitudes in order to empower the marginalized" (Samuel, 2007, p. 616). Although not traditionally included as a research source or data collection method, we have found that the public advocacy activities that we undertook as part of this project gave us additional insights

and experience with some of the political legal tools available to community members and the barriers faced when seeking access to environmental justice.

There was significant community interest in engaging in the federal parliamentary process and seeking amendment to federal legislation, like the *Canadian Environmental Protection Act* (CEPA). As a result, our project team spent a considerable amount of time researching federal legislation, with a focus on CEPA and engaging with a range of political representatives from both the provincial and federal levels. MbEN has been very pleased to get to work more closely with the Canadian Environmental Law Association (CELA) and has undertaken numerous presentations at the national level to communicate community concerns and recommendations for reform in relation to Bill C-226, the *National Strategy Respecting Environmental Racism and Environmental Justice Act* and Bill S-5, the *Strengthening Environmental Protection for a Healthier Canada Act*.

Contaminated Sites: An Overview

What Are Contaminated Sites and Brownfields?

THIS PROJECT IS focused on land sites that are sources of pollution due to industrial activities that occurred in the past or are ongoing. Such land sites may be called *contaminated sites*, *brownfields*, or other names. For our purposes, a *brownfield* is defined as "abandoned, vacant, derelict or underutilized commercial and industrial properties where past actions have resulted in actual or perceived contamination and where there is active potential for redevelopment" (Government of British Columbia, 2007, p. 1). A *contaminated site* refers to a site that has known pollution in the groundwater, surface water, or soil that exceeds the relevant safety standards (De Sousa, 2001, p. 132).

There are some important distinctions between these land types, and a particular site may have characteristics of just one type or both types. First, although brownfields can be an important source of contamination, some brownfields may simply be abandoned or have fallen into disuse. A state of disuse may bring unique problems, such as attracting illegal garbage dumping. Secondly, a brownfield has potential for rehabilitation and reuse, but not all contaminated or disused sites have such potential (Government of British Columbia, 2007, p. 1). If brownfields are tracked or monitored, they can be categorized by the likelihood of successful rehabilitation.

Many municipalities must contend with the need to understand and manage land sites that may be unused, abandoned, polluted, or otherwise not developed in a manner consistent with more common types of urban land use designation (residential, commercial, etc.). An important consideration for determining redevelopment potential is finding the balance between costly cleanup versus future revenues and the success of new land use. An area with little potential for supporting human settlement or land-use developments may not have rehabilitation value for a government or developer, at least until the local context changes at another time. For example, a contaminated site in a very remote area may not have the potential to become a neighbourhood or town. However, there is still an obligation to remediate the site (Government of British Columbia, 2007, pp. 1–2). By contrast, a disused or contaminated parcel of land within a city will likely have great potential for a new use.

Causes and Types of Contamination

The HEHN project is primarily concerned with contaminated industrial sites in residential areas as identified by official provincial Contaminated Sites Registry (Government of Manitoba, 2017) as well as by our interviewees. The definition of an *industrial site* is a land-use development that involves a manufacturing or industrial process, and includes, but is not limited to, metal recycling, electric power production, food and food by-product processing, paper production, agri-chemical production, chemical processes, storage facilities, mining and excavation processes, and processes using mineral products. These sites include those that are still in operation as well as sites that are closed or redeveloped but may be lacking sufficient cleanup. The sites listed in the official public resource of impacted and contaminated sites include a variety of fuel, agricultural, and manufacturing uses.

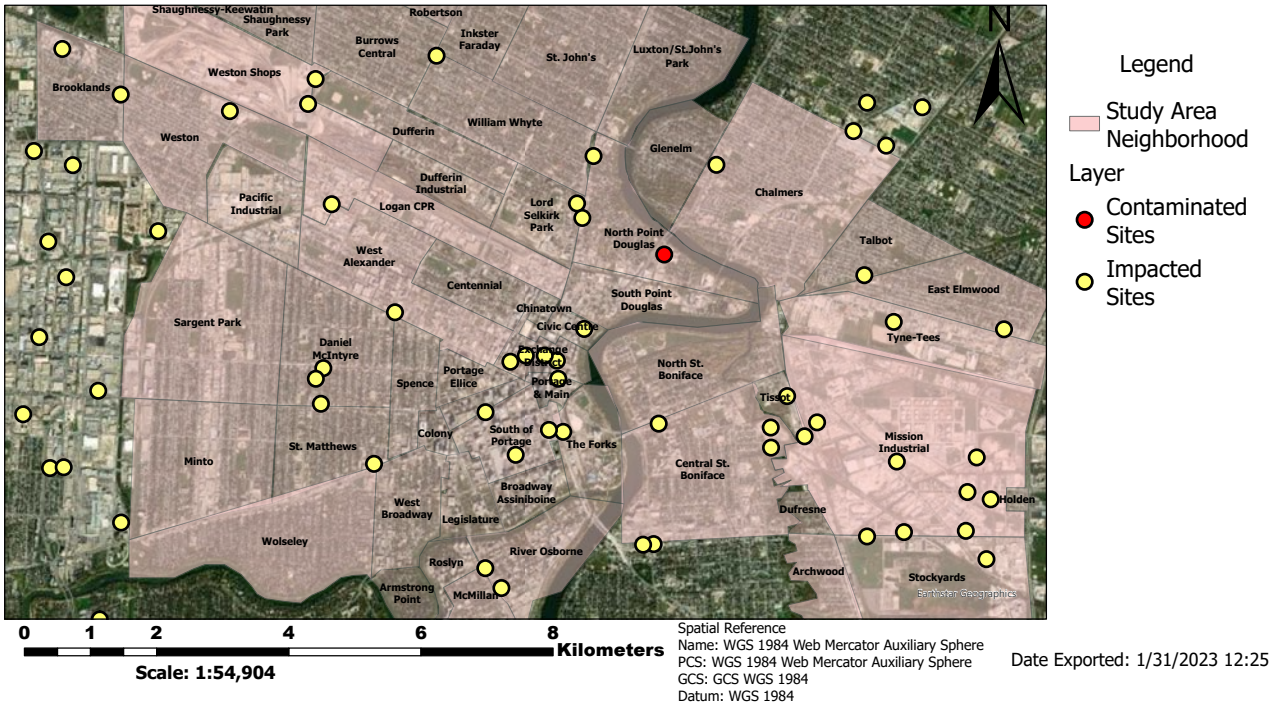
Currently, the neighbourhoods we studied are home to similar industrial uses. A significant industry in these areas is scrap metal recycling, which includes facilities that shred cars and other large appliances. The shredding industries are sometimes referred to as "urban mining" and they often have similar polluting effects as traditional mining operations (Cossu & Williams, 2015).

Contaminated Sites and The Province of Manitoba

The Province of Manitoba has a registry of sites affected by hazardous pollution. These sites are divided into two main categories, which are *impacted*

MAP 1 Map of Designated Impacted and Contaminated Sites

MAP OF MANITOBA CONSERVATION DESIGNATED IMPACTED AND CONTAMINATED SITES



and *contaminated* (Manitoba Clean Environment Commission, 2020, p. v). Map #1 shows these sites in relation to our study area.

A site suspected of contamination can be inspected by an environmental professional, who will then conduct an Environmental Site Assessment (ESA) and report their findings to the site owner and the appropriate department at the Government of Manitoba. At that stage, a remediation plan must be developed and carried out (Government of Manitoba, 2016b, p. 3; Manitoba Clean Environment Commission, 2020, p. 95). Manitoba follows the "polluter pays" principle, placing responsibility on the original owner or operator of the site (Government of Manitoba, 2016a, p. 4; Manitoba Clean Environment Commission, 2020, p. 83).

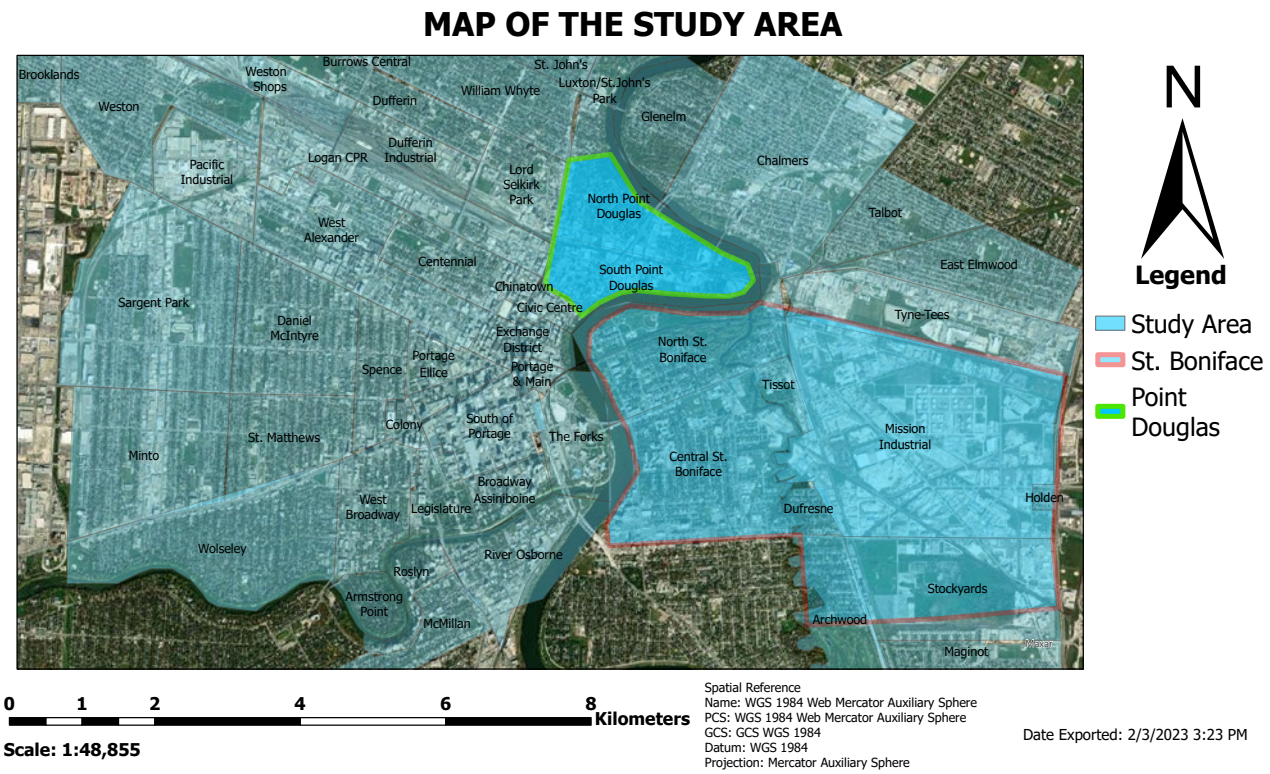
An environmental director, employed by the Environment Minister to carry out the Contaminated Sites Remediation Act, determines the level of designation according to the contamination on the site (Government of Manitoba, 2016a, pp. 2–3). Generally, a site is classified as *contaminated* if it poses a *known threat* to human health or safety of the environment, while an *impacted site* is distinguished if it *may pose a threat in the future* (Government of Manitoba, 2022; Government of Manitoba, 2017). In practice,

the designation of *impacted site* is discretionary, while the designation of *contaminated site* has been used sparingly (Manitoba Clean Environment Commission, 2020, p. 94). These designations can be revoked if a site is cleaned up to a standard determined by the *Contaminated Sites Remediation Act*, but many sites may retain their designation indefinitely if cleanup is not done or is not possible. Any site with a file from previous or current enforcement will remain on an "All Sites" list, even if the site is successfully cleaned up (Government of Manitoba, 2016b, p. 1).

Sites of Concern

Our study area for the HEHN project is illustrated in Map #2. A few hot spots came to be more prominent in our research. These hot spots were neighbourhood sites that had had a lot of environmental testing, media coverage, and community advocacy over time. They came to be more prominent in our research, owing to the history of lead testing and resident activism. The neighbourhoods of Point Douglas and St. Boniface are discussed below.

MAP 2 Map of the Study Area



We have worked with neighbourhood-specific statistical products for these study areas, which are posted on the City of Winnipeg website and use 2015 and 2016 numbers. This resource allowed us to develop very granular statistical information about our study areas (Statistics Canada & City of Winnipeg, 2016b). We wanted to highlight statistics that describe such demographic data as age, ethnicity, Indigenous identity, newcomer status, language proficiency, educational attainment, employment, and low-income status. These features can increase the likelihood of experiencing environmental injustice. The neighbourhood discussions are accompanied by maps that show zoning designations. These describe if an area is designated for a particular kind of land use. The most common types of zoning in our study areas are:

- C4 – Commercial Areas (red)
- R2 – Residential (yellow)
- PR – Parkland (green)
- M1, M2, M3 – Manufacturing (grey)

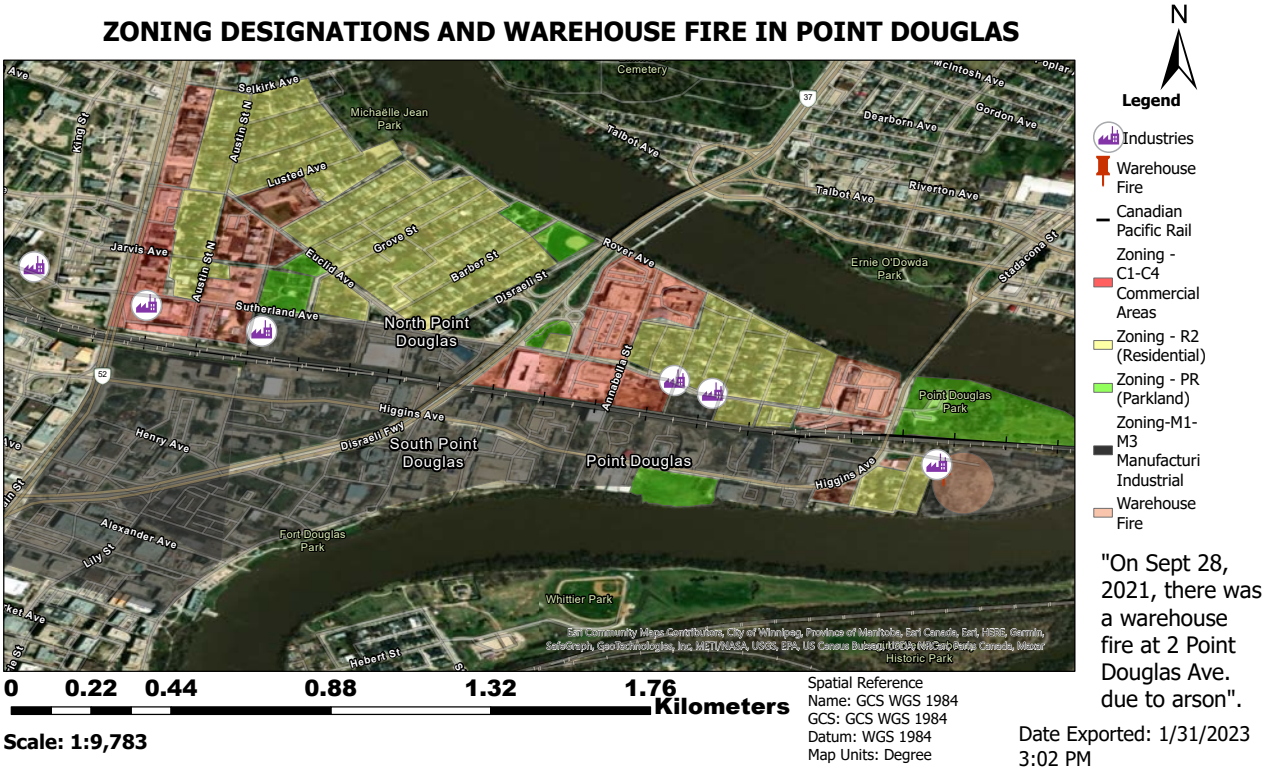
We chose to show these zoning designations on the maps to illustrate the ways residential and industrial land come in close proximity to one another in our study areas.

Point Douglas

Point Douglas is a neighbourhood located in Winnipeg that is bounded on the east by the Red River. Boundaries vary according to different data sources, but for the HEHN project, we looked at the land north of Galt Ave, Lily St. and a portion of Logan Ave. The area is bound on the west by Main St. and bound on the north by Redwood Ave. The most prominent feature of Point Douglas is that it is mostly a peninsula that is surrounded by the Red River on three sides. Statistical boundaries vary, but the City of Winnipeg's neighbourhood cluster map includes our delineations in the section called Point Douglas South (Winnipeg, 2022). Point Douglas has a population of 2415, which has declined 6.8% since 2011. (Statistics Canada & City of Winnipeg, 2016b, p. 2).

The City of Winnipeg has a long history of industrial manufacturing that developed along with the expansion of railroads. In approximately 1881, the Canadian Pacific Railway entered Winnipeg through the Point Douglas neighbourhood, which spurred industrial factories to be built near these

MAP 3 Map of Zoning Designations in Point Douglas



rail lines. Some of these factories produced metal and processed petroleum products. Before zoning regulations came into use in the 20th century, Point Douglas land use was a mix of industrial and residential in close contact. After World War II, industrial uses began to move away from Point Douglas to areas further away from the city's core, including to the St. Boniface area (MacLean 2018, p. 3–6). Today, Point Douglas's built environment consists of commercial, industrial, and residential areas (Development & Winnipeg, 2019).

Because lead and other pollutants are especially hazardous to children, we felt it was important to note how many children live in Point Douglas and other areas of study. In Point Douglas, children aged 0–4 make up 10% of the total population, which is higher than Winnipeg's citywide share of 5.7%. Children aged 5–9 also account for 7%, which also exceeds Winnipeg's share of 5.8%. Children aged 10–14 make up 6% of Point Douglas' population, greater than citywide at 5.7%. However, teens aged 15–19 are just 4% of the total Point Douglas population (Winnipeg has 6.2% of the same age) (Statistics Canada & City of Winnipeg, 2016b, p. 3).

PHOTO 1 A Playground in Point Douglas



TABLE 1 Point Douglas Youth Population by Age 2016

Youth Population by Age 2016					WPG
Neighbourhood	**Age Group**	**Total**	**% of Population**	**% of Total**	**% of Population**
Point Douglas TOTAL	0–4 years	235	37%	10%	5.70%
Point Douglas TOTAL	5–9 years	160	25%	7%	5.80%
Point Douglas TOTAL	10–14 years	140	22%	6%	5.70%
Point Douglas TOTAL	15–19 years	105	16%	4%	6.20%
Point Douglas TOTAL		640			

Source: Census, 2016

Age breakdowns within households consist of 26% under age 18 (11% under age 6), 63.6% aged 18–64, and 10.4% aged 65 and older. These numbers exceed citywide percentages in youth categories. Winnipeg's at-large household breakdown is 20.8% under 18 (6.8% under 6), 64.7% aged 18–64,

TABLE 2 Point Douglas Age Breakdowns by Household 2016

Neighbourhoods	Age	Number	Percent Total	WPG
Point Douglas TOTAL	<18	630	26.09%	20.80%
Point Douglas TOTAL	<6	265	10.97%	6.80%
Point Douglas TOTAL	18–64	1,535	63.56%	64.70%
Point Douglas TOTAL	65+	250	10.35%	14.50%

Source: Census, 2016

TABLE 3 Point Douglas English/French Speakers 2016

Neighbourhood	Languages	Number	Percent Total	WPG % of pop
Point Douglas TOTAL	English Only	2235	92.55%	88.20%
Point Douglas TOTAL	English and French	130	5.38%	10.10%
Point Douglas TOTAL	Neither	30	1.24%	1.60%
Point Douglas TOTAL	French Only	20	0.83%	0.10%

Source: Census, 2016

and 14.5% over 65 (Statistics Canada & City of Winnipeg, 2016b, p. 13). In other words, Point Douglas has more children and fewer seniors than Winnipeg as a whole.

Point Douglas is home to 92.5% English speakers, 5.4% who speak both English and French, 1.2% who speak neither, and 0.8% who speak French only. By comparison, Winnipeg at large has 88.2% English speakers, 10.1% English and French, 1.6% who speak neither, and 0.1% who speak French only (Statistics Canada & City of Winnipeg, 2016b, p. 3).

Point Douglas is also home to a large representation of Indigenous-identified residents, with 19% Metis, 25% First Nations, and 1% multiple Indigenous identities. By contrast, Winnipeg at large has 6.6% Métis, 5.3% First Nations, and 0.2% multiple Indigenous identities.

The population of Point Douglas is comprised of 13.3% "visible minority" population, a designation used by Statistics Canada.[1] The City has a higher percentage at 28% (Statistics Canada & City of Winnipeg, 2016b, p. 5). The percentage of residents born outside of Canada is 13.3% in Point Douglas. In Winnipeg, 25.5% of residents were born outside of Canada (Statistics Canada & City of Winnipeg, 2016b, p. 6).

Point Douglas residents have a lower rate of education milestone completion than the city. 25.5% of residents have no degree, 22.4% have completed high

TABLE 4 Point Douglas Indigenous Identity 2016

Neighbourhood	Identity	Number	% of Total	% of Pop	WPG % of Pop
Point Douglas TOTAL	Metis Single Identity	470	43%	19%	6.60%
Point Douglas TOTAL	First Nation Single Identity	605	55%	25%	5.3%
Point Douglas TOTAL	Inuk (Inuit) Single Identity	0	0%	0%	0.0%
Point Douglas TOTAL	Multiple Indigenous Identities	10	1%	0%	0.2%
Point Douglas TOTAL	Indigenous Identities Not Included Elsewhere	10	1%	0%	0.1%

Source: Census, 2016

TABLE 5 Point Douglas Visible Minorities 2016

Neighbourhood	Number	% of pop	WPG % of pop
Point Douglas TOTAL	320	13.3%	28.0%

Source: Census, 2016

TABLE 6 Point Douglas Residents Born Outside of Canada 2016

Neighbourhood	Total	% of pop	WPG % of pop
Point Douglas TOTAL	360	14.91%	25.50%

Source: Census, 2016

school, and 30% have some kind of post-secondary degree. Winnipeggers overall have 17.0% with no degree, 29.9% with just a high school degree, and 53.2% with some kind of post-secondary degree (Statistics Canada & City of Winnipeg, 2016b, p. 9).

Point Douglas has a 37% employment rate and a 5% unemployment rate (a total of 42% job market participation). Winnipeg has a 67% participation rate, with 63% employed and 7% unemployed (Statistics Canada & City of Winnipeg, 2016b, p. 10). When examining the breakdown of income sources, 60% of Point Douglas's income is from employment, which is lower than Winnipeg overall at 74%. Government transfer income is 34%, much higher than the city's average of 11%. Other income sources account for 6%, which is also lower than Winnipeg's rate of 15%.

The average employment income in Point Douglas is $32,288, and the median income is $29,770. This is less than Winnipeg's figures, which are

TABLE 7 Point Douglas Educational Attainment 2016

Highest Certificate, Diploma, Degree 2016				
Neighbourhood	**Educational Level**	**Number**	**% total**	**WPG % of Total**
Point Douglas TOTAL	No Certificate, Diploma, Or Degree	615	25.47%	17%
Point Douglas TOTAL	High School Or Equivalent	540	22.36%	29.90%
Point Douglas TOTAL	Total Postsecondary Degrees	720	29.81%	53.20%
Point Douglas TOTAL	Apprenticeship, Trades Certificate, Diploma	165	6.83%	6.50%
Point Douglas TOTAL	College, Cegep, Other Non-University Diploma	290	12.01%	17.80%
Point Douglas TOTAL	University Certificate Below Bachelor Level	0	0.00%	2.80%
Point Douglas TOTAL	University Certificate, Diploma, Or Degree At Bachelor Or Above	235	9.73%	26.10%
Point Douglas TOTAL	Bachelor's Degree	160	6.63%	18.40%
Point Douglas TOTAL	University Certificate, Diploma, Or Degree Above Bachelor	10	0%	2.00%

Source: Census, 2016

TABLE 8 Point Douglas Employment, Unemployment, Job Participation Rate 2016

Neighbourhood	% Participation	% Employed	% Unemployed	WPG % Participation	WPG % Employed	WPG % Unemployed
Point Douglas TOTAL	42%	37%	5%	67%	63%	7%

Source: Census, 2016

TABLE 9 Point Douglas Individual Average and Median Income 2016

Neighbourhood	Average Income	Median Income	WPG Average Income	WPG Median Income
Point Douglas TOTAL	$32,288.00	$29,770	$44,915	$35,121

Source: Census, 2016

an average of $44,915 and a median income of $35,121 (Statistics Canada & City of Winnipeg, 2016b, p. 13).

The Low-Income Measure – After Taxes (LIM-AT) for Point Douglas is 43%, while the Low-Income Cut Off – After Taxes (LICO-AT) is 4, indicating a high level of poverty. Winnipeg's citywide LIM-AT is 15.9% and the LICO-AT is 13.2% (Statistics Canada & City of Winnipeg, 2016b, p. 13).

TABLE 10 Point Douglas LIM-AT and LICO-AT 2016

Neighbourhood	Age Groupings	Number	% of Total	WPG % of pop
Point Douglas TOTAL	Total Population at LIM-AT	1050	43%	15.90%
Point Douglas TOTAL	<18 LIM-AT	385	16%	23.00%
Point Douglas TOTAL	<6 LIM-AT	155	6%	25.90%
Point Douglas TOTAL	18-64 LIM-AT	570	24%	14.40%
Point Douglas TOTAL	65+	90	4%	12.20%
Point Douglas TOTAL	Total Population at LICO-AT	955	40%	13.20%
Point Douglas TOTAL	<18 LICO-AT	325	13%	17.80%
Point Douglas TOTAL	<6 LICO-AT	130	5%	20.20%
Point Douglas TOTAL	18-64 LICO-AT	565	23%	13%
Point Douglas TOTAL	65+ LICO-AT	65	3%	7.70%

Source: Census, 2016

St. Boniface

St Boniface is a large area located immediately east and southeast of Winnipeg's downtown core. The City of Winnipeg has aggregated the 2015 census data into neighbourhood clusters and has divided St. Boniface into two portions, St. Boniface East and St. Boniface West (Winnipeg, 2022). However, because the whole area is so large, there is considerable variation in figures such as income and educational attainment. We have pulled out statistics for the sub-neighbourhoods where our interviewees live and where the most notable industrial sites are located. These small areas include Archwood, Central St. Boniface, Dufresne, Holden, Norwood East, and the Stockyards. These neighbourhoods are visible in Map #2 on page 35. For some categories, Holden sometimes lacks data. According to the new statistics we created from these smaller areas, the total population for 2016 was 12,235, a decline of 3.8% since 2011.

St. Boniface's industrial history begins with the expansion of the railroad into the town beginning in 1878. The introduction of the Canadian Pacific Railway, Canadian Northern, and Grand Trunk Pacific-Transcontinental Railway led to a variety of industrial activities, such as iron, steel, lumber, and brick factories (French-Canadian Genealogist, 2021). Over time, other industries also relocated from elsewhere in Winnipeg as land uses changed (MacLean, 2018 p. 6). St. Boniface still has more than two dozen industrial facilities close to residential areas, many of which have operated since the early 20th century (Dacey, 2017 p. 3). Metal and automobile recycling plants

MAP 4 Map of Zoning Designations in St. Boniface

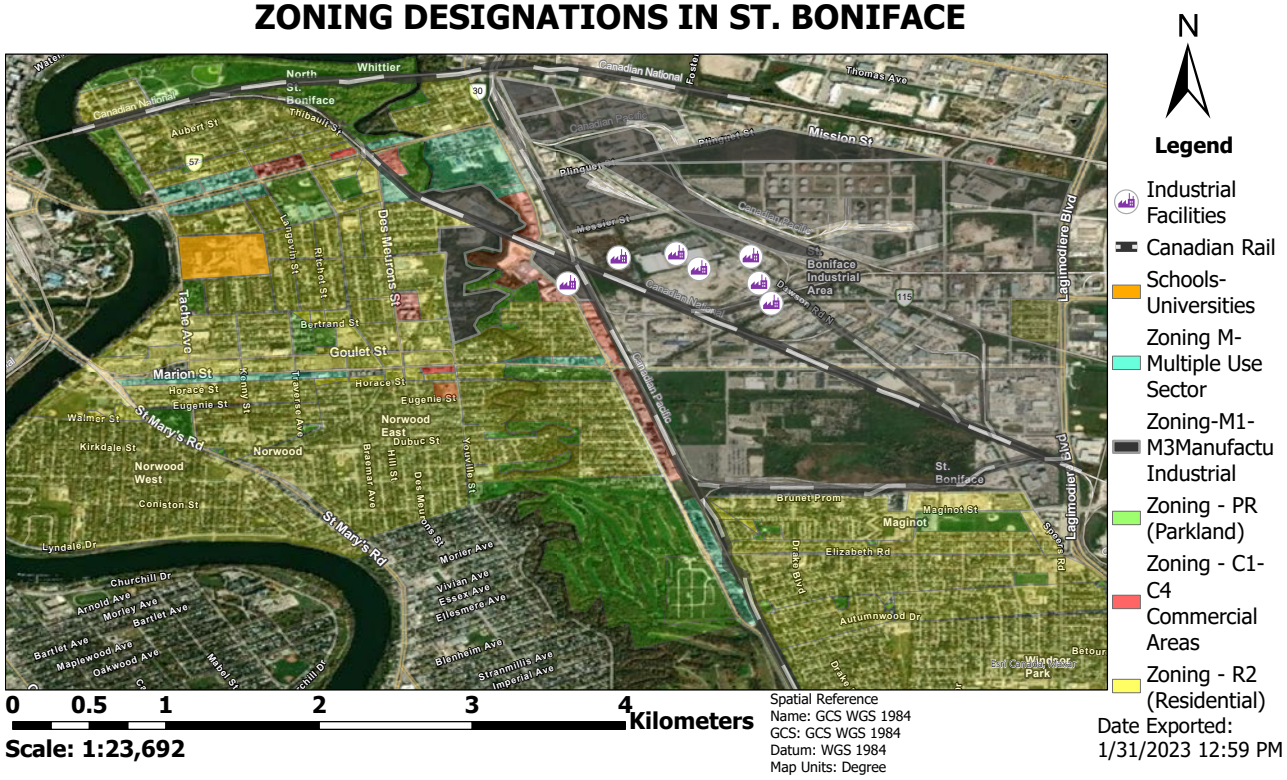


PHOTO 2 Happyland Park, A Popular Park in St. Boniface, has been Tested for High Levels of Lead



TABLE 11 St. Boniface Youth Population by Age 2016

Youth Population by Age 2016					WPG
Neighbourhood	Age Group	Total	% of Population	% of Total	% of Population
St. Boniface TOTAL	0–4 years	540	4%	5.40%	5.70%
St. Boniface TOTAL	5–9 years	550	4%	8.80%	5.80%
St. Boniface TOTAL	10–14 years	405	3%	7.50%	5.70%
St. Boniface TOTAL	15–19 years	535	4%	11.60%	6.20%
St. Boniface TOTAL	All Youth	2030	17%		

Source: Census, 2016

TABLE 12 St. Boniface Age Breakdowns by Household 2016

Neighbourhoods	Age	Number	Percent Total	WPG
St. Boniface TOTAL	<18	1,715	14.23%	20.80%
St. Boniface TOTAL	<6	665	5.52%	6.80%
St. Boniface TOTAL	18–64	8,325	69.06%	64.70%
St. Boniface TOTAL	65+	2,030	16.84%	14.50%

Source: Census, 2016

are significant types of industry in the area. Soil testing in the St. Boniface area has revealed very high levels of lead in the soil, indicative of heavy industrial activity (Dacey, 2017) (Annable, 2018a) (Intrinsik Corp, 2019, pp. 1–2).

Children and youth, who are more susceptible to lead poisoning and other health problems from pollution, make up a proportion of the population on par with the city at large. Ages 0–4 account for 4%, ages 5–9 make up 4%, 10–14 consist of 3%, and teens aged 14–19 are 4% of the St. Boniface study area population. This is a bit lower than the City's averages, which hover around 6% for each age group. (Statistics Canada & City of Winnipeg, 2016c, p. 3).

Per household, St. Boniface is 14.23% under 18 (5.5% under 6), 69% aged 18–64, and 16.8% 65 and over. St. Boniface households have slightly fewer youth than Winnipeg (20.8% under 18 and 6.8% under 6), but slightly more adults and seniors (64.7% and 13.6%) (Statistics Canada & City of Winnipeg, 2016c, p. 13).

Our St. Boniface study areas have greater bilingual ability that Winnipeg as a whole. 59.6% of St. Boniface East speaks English only, while 39% speak both English and French, 0.65% speak neither, and 1% speak only French. French is more prominent in St. Boniface than Winnipeg at large:

TABLE 13 St. Boniface English/French Speakers 2016

Neighbourhood	Languages	Number	Percent Total	WPG % of pop
St. Boniface TOTAL	English Only	7290	59.58%	88.20%
St. Boniface TOTAL	English and French	4765	38.95%	10.10%
St. Boniface TOTAL	Neither	80	0.65%	1.60%
St. Boniface TOTAL	French Only	125	1.02%	0.10%

Source: Census, 2016

TABLE 14 St. Boniface Indigenous Identity 2016

Neighbourhood	Identity	Number	% of Total	% of Pop	WPG % of Pop
St. Boniface TOTAL	Metis Single Identity	1625	75%	13%	6.60%
St. Boniface TOTAL	First Nation Single Identity	505	23%	4%	5.3%
St. Boniface TOTAL	Inuk (Inuit) Single Identity	0	0%	0%	0.0%
St. Boniface TOTAL	Multiple Indigenous Identities	30	1%	0%	0.2%
St. Boniface TOTAL	Indigenous Identities Not Included Elsewhere	0	0%	0%	0.1%
St. Boniface TOTAL		2160			

Source: Census, 2016

88% of Winnipeggers speak English only, 10.1% of all Winnipeggers speak both French and English, 1.6% speak neither and 0.1% speak French only (Statistics Canada & City of Winnipeg, 2016c, p. 4).

St. Boniface's Metis population is slightly larger than Winnipeg as a whole, measuring at 13% to Winnipeg's 6.6%. In addition, 23% of St. Boniface identifies on the census as First Nations, and another 1% identifies with multiple Indigenous identities. Winnipeg as a whole is 6.6% Metis and 5.3% First Nations identified.

15.5% of St. Boniface identifies as a visible minority, less than Winnipeg at 28%. The percentage of people born outside of Canada is also lower, at 18.5% vs. Winnipeg's 25.5% (Statistics Canada & City of Winnipeg, 2016c, p. 6).

St. Boniface has slightly lower educational milestone achievement compared to Winnipeg levels. One exception to this is that there are fewer people with no degree, with 11.7% of St. Boniface residents reporting no degree as compared to 17% citywide. 26% have a high school diploma, while 45.6% have achieved post-secondary education (slightly lower than Winnipeg at 53.2%). (Statistics Canada & City of Winnipeg, 2016c, p. 9).

TABLE 15 St. Boniface Visible Minorities 2016

Neighbourhood	Number	% of pop	WPG % of pop
St. Boniface TOTAL	1,900	15.5%	28.0%

Source: Census, 2016

TABLE 16 St. Boniface Residents Born Outside of Canada 2016

Neighbourhood	Total	% of pop	WPG % of pop
St. Boniface TOTAL	1720	14.06%	25.50%

Source: Census, 2016

TABLE 17 St. Boniface Educational Attainment 2016

Highest Certificate, Diploma, Degree 2016

Neighbourhood	Educational Level	Number	% total	WPG % of Total
St. Boniface TOTAL	No Certificate, Diploma, Or Degree	1435	11.73%	17%
St. Boniface TOTAL	High School Or Equivalent	3180	25.99%	29.90%
St. Boniface TOTAL	Total Postsecondary Degrees	5580	45.61%	53.20%
St. Boniface TOTAL	Apprenticeship, Trades Certificate, Diploma	750	6.13%	6.50%
St. Boniface TOTAL	College, Cegep, Other Non-University Diploma	2000	16.35%	17.80%
St. Boniface TOTAL	University Certificate Below Bachelor Level	285	2.33%	2.80%
St. Boniface TOTAL	University Certificate, Diploma, Or Degree At Bachelor Or Above	2560	20.92%	26.10%
St. Boniface TOTAL	Bachelor's Degree	1805	14.75%	18.40%
St. Boniface TOTAL	University Certificate, Diploma, Or Degree Above Bachelor	135	1.10%	2.00%

Source: Census, 2016

Rates of employment also fall a bit lower than Winnipeg's citywide rates, with St. Boniface East having a 65% employment rate and a 5% unemployment rate. Winnipeg compares with a 63% employment rate and 7% unemployed (Statistics Canada & City of Winnipeg, 2016c, p. 10).

Average income is lower in St. Boniface than Winnipeg citywide, which amounts to an average income of $39,981 compared to Winnipeg's average of $44,915. The median income for St. Boniface is a bit higher than Winnipeg's median, which is $36,539 compared to Winnipeg at $35,121.

TABLE 18 St. Boniface Employment, Unemployment, Job Participation Rate 2016

Neighbourhood	% Participation	% Employed	% Unemployed	WPG % Participation	WPG % Employed	WPG % Unemployed
St. Boniface TOTAL	60%	57%	4%	67%	63%	7%

Source: Census, 2016

TABLE 19 St. Boniface Individual Average and Median Income 2016

Neighbourhood	Average Income	Median Income	WPG Average Income	WPG Median Income
St. Boniface TOTAL	$39,981	$36,539	$44,915	$35,121

Source: Census, 2016

TABLE 20 St. Boniface LIM-AT and LICO-AT 2016

Neighbourhood	Age Groupings	Number	% of Total	WPG % of pop
St. Boniface TOTAL	Total Population at LIM-AT	2340	19%	15.90%
St. Boniface TOTAL	<18 LIM-AT	380	3%	23.00%
St. Boniface TOTAL	<6 LIM-AT	125	1%	25.90%
St. Boniface TOTAL	18-64 LIM-AT	1515	13%	14.40%
St. Boniface TOTAL	65+	440	4%	12.20%
St. Boniface TOTAL	Total Population at LICO-AT	1985	16%	13.20%
St. Boniface TOTAL	<18 LICO-AT	285	2%	17.80%
St. Boniface TOTAL	<6 LICO-AT	80	1%	20.20%
St. Boniface TOTAL	18-64 LICO-AT	1385	11%	13%
St. Boniface TOTAL	65+ LICO-AT	320	3%	7.70%

Source: Census, 2016

Finally, there is a higher percentage of residents who fall under the Low-Income Measure – After Tax at 19%, and a similar trend for Low-Income Cut Off – After Tax with 16%. By contrast, Winnipeg's LIM-AT is 15.9% and the LICO-AT is 13.2% (Statistics Canada & City of Winnipeg, 2016c, p. 13).

Previous Studies

Since the late 1970s, a number of testing studies have been performed in Winnipeg with the intent to document levels of lead and other hazardous contaminants in the city. The following is a brief review of some of the most important studies conducted over the years. These larger lead studies are complemented by a few smaller studies that are not discussed here. These studies form the basis of documented lead contamination in Winnipeg.

In 1982, the Province of Manitoba had lead and zinc testing done in the Weston neighbourhood in Winnipeg. At the time, the limit for soil concentration was 2600 µg/g. High levels of lead were found around the Weston School and traced to leaded gasoline. There was uncertainty about how much the then-existing Canadian Bronze Company contributed to the high lead levels. These test results led to soil remediation projects throughout the area (Wotton, 1982, p. 1–2). Since then, the smelter has closed and lead was removed from gasoline, but lead levels may potentially remain elevated due to the longevity of lead contamination.

In 2011, a testing report from 2007–2008 was published after being commissioned by the Province of Manitoba. By this time, the maximum Canadian Council of Ministers of the Environment (CCME) health guideline for lead in soil for residential and parkland was 140 µg/g, with anything higher prompting further investigation. A 2006 test of the Barber House Site in Point Douglas found elevated lead levels (Government of Manitoba, 2010, p. 2). In 2007, the 1980s test sites were retested, including several streets in North Point Douglas (Government of Manitoba, 2010, p. 3). The sites tested in Point Douglas still had elevated levels of lead as compared to the corresponding results from testing in the 1980s, with the highest levels around scrap yards (Government of Manitoba, 2010, p. 11).

The 2007 and 2008 tests showed notable declines in lead, with dramatic declines purportedly due to previous soil remediation or, in the case of more modest declines, as a result of unleaded gasoline. However, despite declines, many test sites still exceeded the health guidelines, especially at the Weston School's playground for elementary-aged students (Government of Manitoba, 2010, pp. 19–20) and sites in the Point Douglas area (Government of Manitoba, 2010, p. 22–23). A second testing project in 2008 examined 90 samples from a variety of playground and sports field substrates. This testing project found only one sample from along Logan Ave that exceeded guidelines (Government of Manitoba, 2010, pp. 15–16).

In 2019, The Government of Manitoba published another soil survey that resampled the 2007 and 2008 sites with some new additions and substitutions. The sample areas included the residential areas of Wolseley/Minto

Riverview/Lord Roberts, Glenelm/Chalmers, and North Point Douglas, plus a number of schools and playgrounds, including the Weston school (Government of Manitoba, 2018, p. 22). Despite some slight improvements, North Point Douglas still showed substantial exceedances compared to the other sites (Government of Manitoba, 2018, p. 15). Weston School also showed exceedances in lead levels compared to the other school and playground test sites (Government of Manitoba, 2018, p. 16–17).

In 2019, the Government of Manitoba commissioned Intrinsik Corporation to produce the first of two reports on lead levels in Winnipeg. This report consisted of a thorough review of soil data, current and historical sources of lead, review of lead assessment and management strategies from comparable jurisdictions, and assessment of health risks associated with known lead levels in Winnipeg. The study found that lead has decreased over time, but differences in testing methods may not provide comparable results, especially if soil was sampled at different depths. Shallower soil samples may have higher concentrations of lead and may also be more easily spread to people. Several neighbourhoods emerged as areas of concern, including Centennial, Daniel McIntyre, Glenelm/Chalmers, North Point Douglas, River/Osborne, Sargent Park, St. Boniface, West End, Weston, Wolseley/Minto, with more testing recommended (Intrinsik Corp, 2019). Study of lead sources returned the usual culprits, including historical leaded gas, paint, coal combustion, as well as a variety of industrial activities from the past and present (Intrinsik Corp, 2019, p. 2).

The 2019 Intrinsik report has tried to explore the current levels of lead exposure in humans, but there is no baseline for the Province of Manitoba or City of Winnipeg. Blood lead levels were extrapolated by studying nationwide blood lead levels and a predictive model developed in the US. The report also raises the concern that a residential soil quality guideline of 140 µg/g may no longer be up-to-date and sufficient to protect children's health (Intrinsik Corp, 2019, p. 4). The project also found that by using the known lead soil tests and the predictive model, the blood lead levels of children in North Point Douglas and Weston are likely to be higher than 2 µg/dL, a level of concern. The report recommends targeted blood testing in areas of concern and efforts to further reduce the remaining source of lead contamination, namely industrial activity (Intrinsik Corp, 2019, pp. 5–6).

In 2020, University of Manitoba Natural Resources Institute graduate student Folarin Solademi produced a thesis project that studied industrial contamination in neighbourhoods of St. Boniface that overlap with our current research areas. This report tested local pollution, including airborne particulate matter (PM2.5), trace toxic metals in snow, and noise. The project was significant for choosing

private residential properties for some of the data collection. Results showed that particulate matter collected downwind of industrial sites occasionally exceeded the Canadian Ambient Air Quality Standard. More importantly, those samples had high rates of lead, zinc, nickel, and mercury. Noise levels typically exceeded Winnipeg municipal bylaw limits, which affected residential areas. Soldemi's findings indicate a strong need for regulatory intervention to stop the air and noise pollution in the area (Solademi, 2020, p. ii).

The latest report performed for the Government of Manitoba by Intrinsik and Parsons was published in 2022. This report revealed the findings of another round of soil testing for lead on parks and schools across 40 Winnipeg neighbourhoods, with a priority on places that young children are most likely to visit. North Point Douglas, St. Boniface, Weston, and more from our total study area were among the 40 neighbourhoods tested (Parsons & Intrinsik Corp, 2022, p. 2). Of 2,013 samples, 8.3% were higher than the guideline of 140 mg/kg, with 2.4% of that share testing higher than 210 mg/kg and one Mission Park outlier testing at 88,000 mg/kg of lead in soil (Parsons & Intrinsik Corp, 2022, p. i). The report recommends more testing, including residential site testing, as well as a blood lead screening program (Parsons & Intrinsik Corp, 2022, p. ii). Test results again showed that Point Douglas, St. Boniface (including sub-neighbourhoods such as Dufresne), and Weston were among the highest for lead contamination and were singled out for further study (Parsons & Intrinsik Corp, 2022, p. 13–17). Playgrounds and schools' sites were also categorized according to level of risk. Many of the highest-risk sites are located in St. Boniface neighbourhoods, Point Douglas, and Weston (Parsons & Intrinsik Corp, 2022, p. 36). The report urges further action for sites of concern, and also recommends blood lead level testing (Parsons & Intrinsik Corp, 2022, p. 37).

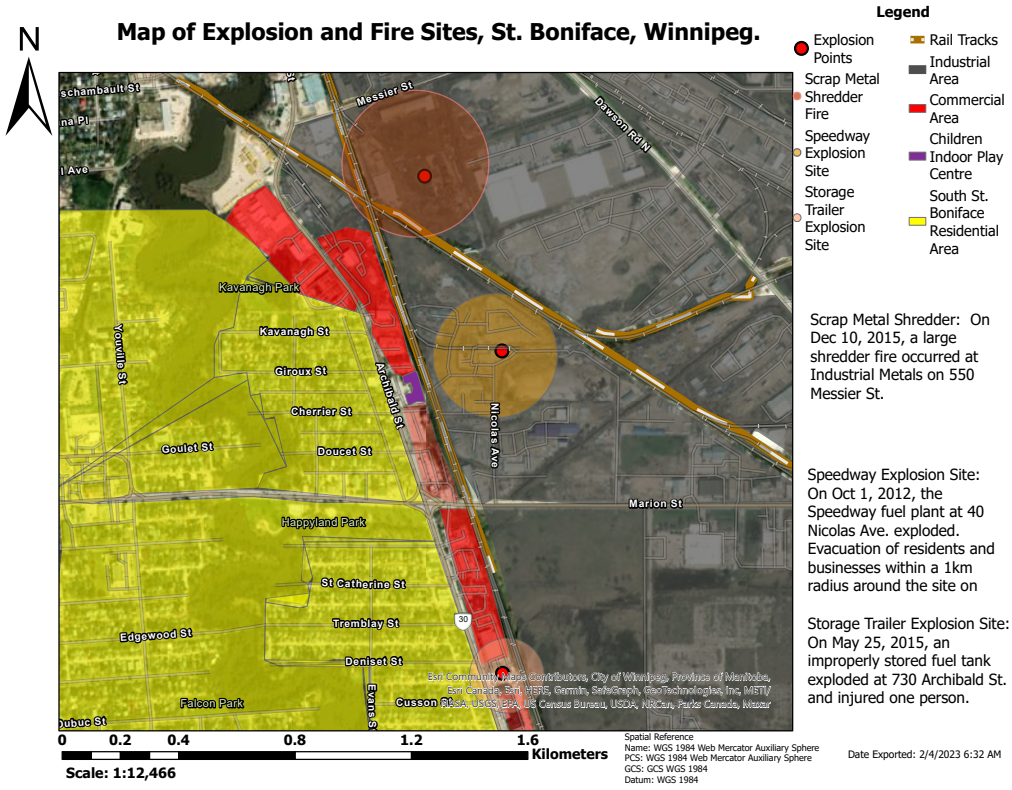
Explosions and Fires

An unusual feature of the pollution that residents described was fires and explosions at close range from nearby industrial sites. On Oct 1, 2012, a fuel plant at 40 Nicolas Ave. in St. Boniface had a large explosion that caused a fireball, intense heat, and a smoke column visible for many kilometers. The incident caused a neighbourhood evacuation and ultimately made national news (Skerritt, 2012; Winnipeg Free Press staff, 2012; CBC News, 2012). On May 25, 2015, there was a container explosion at 730 Archibald St. in St. Boniface, which injured one person and again made national news (CBC News, 2015a; Winnipeg Free Press staff, 2015). On Dec 10, 2015, there was a fire in a metal

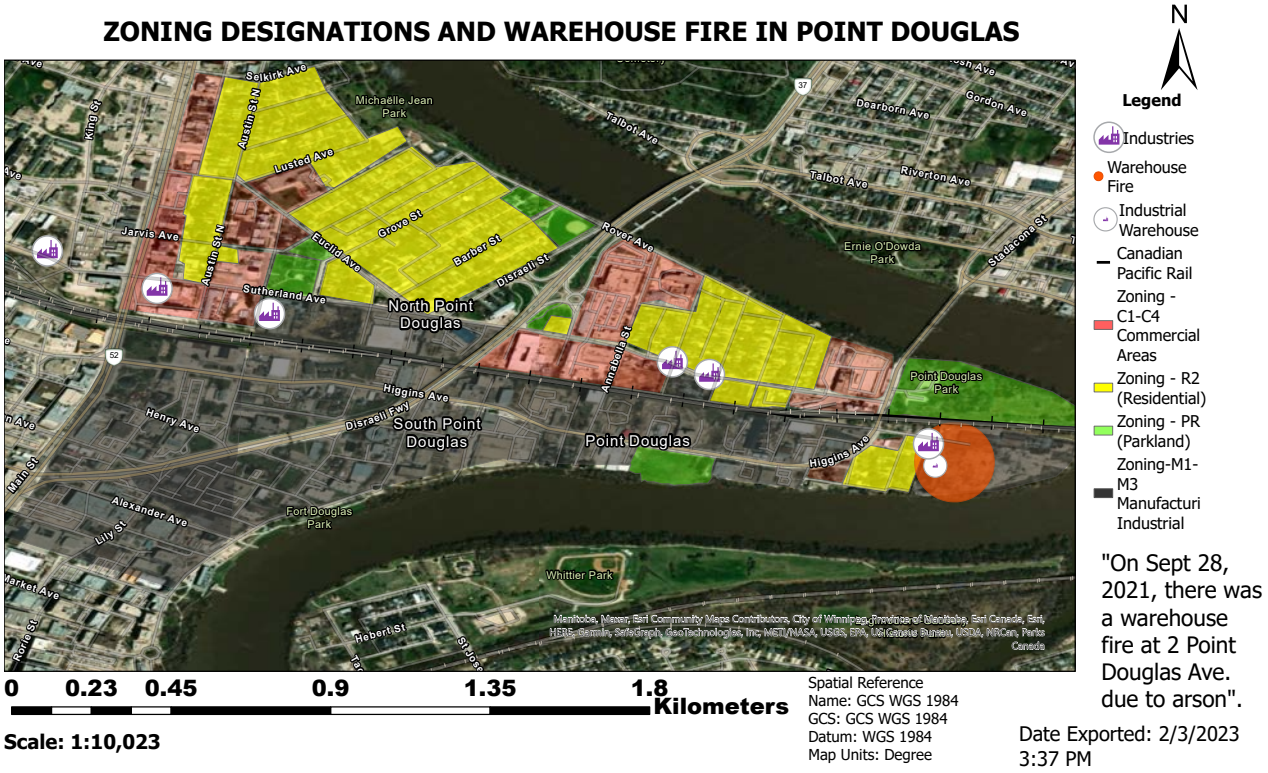
PHOTO 3 Site Cleanup After Warehouse Fire



MAP 5 Explosions and Fire Sites, St. Boniface, Winnipeg



MAP 6 Warehouse Fire in Point Douglas



shredder on 550 Messier St., also in St. Boniface. Meanwhile, Point Douglas experienced a fire by arson on Sept 28, 2021, at a warehouse on 2 Point Douglas Ave., resulting in an ongoing demolition project (Waldman & Piché, 2021) (Pursaga, 2022). These incidents are the culmination of hazardous activities in the neighbourhoods we have been studying, adding pressure to residents who experience the day-to-day stress of living in polluted areas.

Contaminating Substances

Industrial businesses and their associated production sites are often found to be emitting substances that cause harm to the health of the local environment and its inhabitants. In the sections below, we will explore some key toxic substances that are commonly associated with industrial sites and the health hazards they pose. Lead is the most well-known issue due to the legacy of testing in Winnipeg, but it is likely that other substances are also causing problems. In addition to lead, our Advisory Committee advised us to investigate the elements arsenic, cadmium, chromium, and mercury. Besides

PHOTO 4 Site Contaminated with Lead



elemental pollution, there are other harmful industrial pollutants such as auto shredder residue (ASR), noise pollution, particulate matter (PM), and volatile organic compounds (VOCs). These substances are described briefly below, but are described more fully in Appendix 1 on page 160.

Lead

A top toxic substance associated with industrial pollution is lead. Lead is a bluish-grey metal that is naturally present in bedrock, soils, sediment, groundwater, and sea water (Health Canada, 2021, p. 3; Heath Canada, 2021, p. 29). Lead is valued for its properties of malleability, ductility, and resistance to corrosion, and therefore has been used in many industrial and consumer products (Canada & Health Canada, 2013, p. 5). Lead has a strong tendency to adsorb (adhere to molecules) in soil and can persist long after the source is removed (Government of Manitoba, 2010, p. i). It is generally considered to be a permanent form of contamination unless intentional cessation and remediation is conducted (Canada & Health Canada, 2013, p. 15). Lead is transmissible through soil, water, air, and certain consumer products (Canada & Health Canada, 2013; Heath Canada, 2021, p. 29). The *Canadian Environmental Protection Act, 1999* (CEPA) lists lead as a Schedule 1 toxic substance and is subject to federal risk

management and controls in the consumer market (Heath Canada, 2021, p. 30). As part of the 2022 legislative process of Bill S-5 to update CEPA, there is the possibility that lead will be reclassified to a less-urgent schedule, thereby potentially reducing the impetus to remediate lead-contaminated sites.

There are a variety of human-caused sources of lead, including metal smelting and refining, car battery production and recycling, lead water pipes and solder, and paint in older houses. Lead has also appeared in ceramic glazes, lead crystal glassware, food and drink, children's toys, and as a stabilizer for plastics (Government of Manitoba, 2021, pp. 1–2; Canada & Health Canada, 2013). It is estimated that 70% of airborne lead emissions in Canada come from mining and metal-producing industries (Canada & Health Canada, 2013, p. 11). This is worth noting for the HEHN project because metal recycling operations are sometimes called "urban mines" with similar hazards (Cossu & Williams, 2015).

In the recent past, an important cause of lead exposure was lead in gasoline. This was a common ingredient throughout the 20th century to improve engine performance but was phased out in the 1990s (Heath Canada, 2021, p. 29). Over the past 40 years, lead exposure in Canada has been reduced by 80% due to consumer product regulations, especially since lead was removed from gasoline. However, the legacy of lead's effects on human health continue to this day because of its longevity in the soil, lead water pipes in older areas, and the potential to pass lead generationally through pregnancy (Heath Canada, 2021, p. 29).

Older housing stock, which is commonly found in inner-city and mature neighbourhoods, is a key culprit for environmental lead exposure from old lead paint and lead water pipes (Frew, 2019, pp. 1–3; O'Grady & Perron, 2011). Lead paint in old homes is an important source of lead contamination via chips and dust, affecting both the interior environment of the home as well as the soil around the property (Intrinsik Corp, 2019, p. 2; Government of Manitoba, 2021, pp. 1–2). Peeling lead paint and dust is a particular risk for small children who may put dust and paint chips in their mouths as they play and explore (Gochfeld & Burger, 2011, p. S55; Hildebrandt, 2021, p. 2).

Many older homes built before 1950 have water pipes made from lead and lead solder (Hildebrandt, 2021; Government of Manitoba, 2021, pp. 1–2). In some cases, homes built before 1990 are a risk for lead in drinking water. The use of lead pipes for drinking water service lines was banned in 1975 but lead solder for pipes stayed in use until 1986. A total ban on lead plumbing in new construction was put in effect in 1990 (Canada & Health Canada, 2013, p. 9). However, many municipalities still grapple with needing to replace old lead pipes.

Living in poverty can also result in an increased chance of exposure to lead if the most affordable housing stock is in old housing, especially if it was

built before 1950. Unsafe housing is also a risk factor more likely to impact those living in poverty. Poor nutrition can increase lead absorption, especially for children. Vegetable gardens that are kept as a means of improving access to nutritious food can also become a source of contamination. Additional negative health impacts from poverty include stress from financial problems, under- or unemployment, social disorder, the need for household pesticides to combat insects and rodents, an increased chance of smoking, and lack of exercise due to safety concerns or poor pedestrian conditions (Gochfeld & Burger, 2011, pp. S54, S59; Annable, 2019; Dacey, 2017; Government of Manitoba, 2018; MacLean, 2018).

Health Impacts of Lead

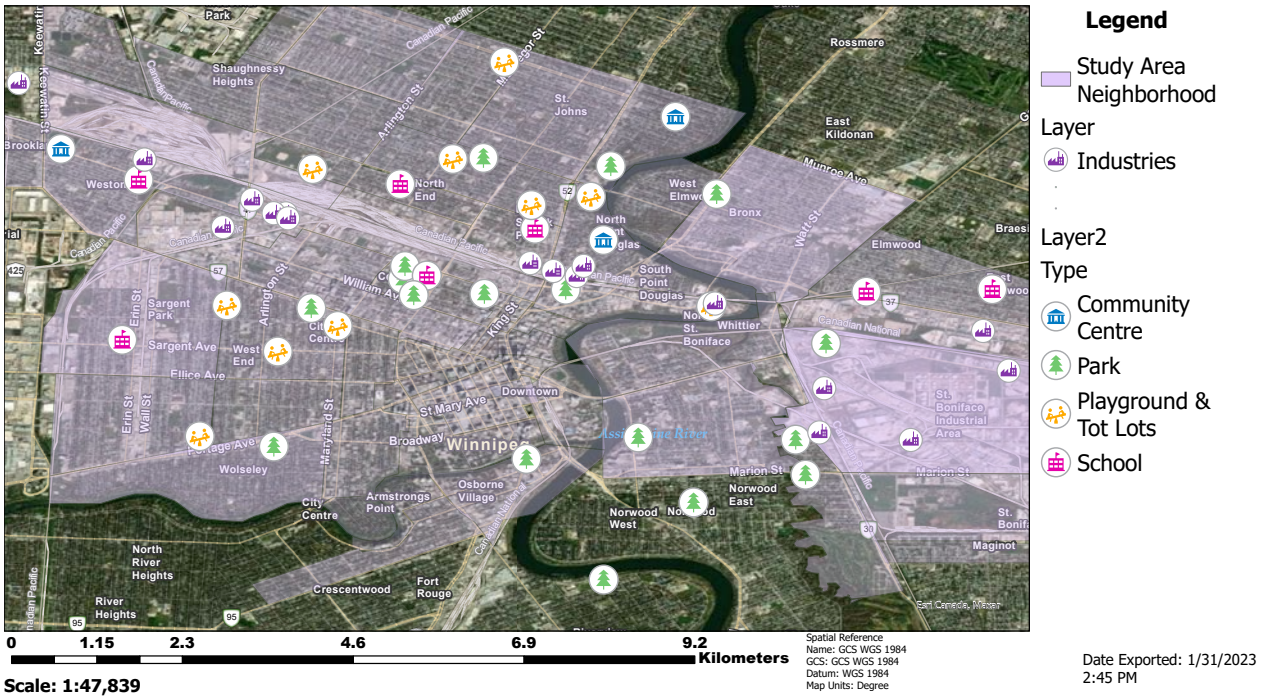
The main route of lead exposure for adults is through food and drinking water. Children are also vulnerable to lead in food and water, and face additional risks through exposure to lead paint, soil, and various consumer products through play and putting objects in their mouths. Children are disproportionately at risk for greater absorption and exposure to lead and other contaminants (Gochfeld & Burger, 2011, p. S54). While only 3% – 10% of ingested lead enters the bloodstream in adults, children may absorb 40% – 50% of ingested lead into their bloodstream (Heath Canada, 2021, p. 29). A state of malnutrition can worsen the effect of ingesting and absorbing lead (Canada & Health Canada, 2013, p. 35).

For children, the greatest concern about lead exposure is the changes that affect their brain and nervous systems (Frew, 2019, p. 5). Children's nervous systems are especially vulnerable to injury, either through environmental exposure in their homes and outdoor play areas and may also encounter lead in-utero if their parent is suffering from exposure (Gochfeld & Burger, 2011, p. S54). Neurological impacts of lead exposure in children include reduced impulse control, increased hyperactivity, increased anti-social behaviour, and poor school achievement (Gerrard, 2020, pp. 9–10). An average lifetime blood lead level of 5 to 9.9 micrograms per decilitre resulted in reduced scores on IQ tests (Gochfeld & Burger, 2011, pp. S54–S55; Government of Manitoba, 2021).

Adults who have been exposed to lead and have elevated levels in their bodies can experience a range of health problems. These include heart attacks, high blood pressure, stroke, gastrointestinal discomforts, kidney disease, and reproductive disorders (Gerrard, 2020, p. 23; Frew, 2019, p. 5; Government of Manitoba, 2021, p. 1). Mental health is also impacted by lead exposure and has been associated with increased incidence of depression and

MAP 7 Map of Industrial Facilities of Concern, Playgrounds, Parks, and Tot Lots

Map of Industrial Facilities of Concern, Playgrounds, Parks, and Tot Lots in The Study Area.



panic disorder (Gerrard, 2020, p. 23). Neurological impacts of lead exposure include increased difficulties with attention and weakened impulse control (Gerrard, 2020, p. 8; Government of Manitoba, 2021). Lead can also be stored in bones because it mimics calcium in the body (Gerrard, 2020, p. 102). These stores of lead can be released during pregnancy, menopause, and when healing from an injury (Government of Manitoba, 2021, p. 1).

Volatile Organic Compounds

Volatile organic compounds (VOCs) are a diverse group of chemical compounds that can turn to a gas or vapour at room temperature (Miller et al., 2020, p. 1). While we are focusing on human-made toxic VOCs, many substances in this category can come from natural sources and can be harmless or even beneficial, such as odours from food or plants (Chauhan et al., 2014, p. 668). VOCs are minimally soluble in water (US EPA, 2022). Harmful VOCs include substances such as benzene, vinyl chloride, toluene, ethyl benzene, and xylene (Chauhan et al., 2014 p. 669) (Miller et al., 2020, p. 3). These vapours

can travel through air, groundwater, and soil and tend to accumulate in indoor settings such as homes and businesses (Miller et al., 2020, p. 1–2). Human exposure occurs through skin contact, ingestion, or inhalation (Miller et al., 2020, p. 2). Negative health effects of VOCs include asthma and other respiratory diseases (especially in children), as well as disorders of the nervous system, kidney, liver, and reproductive organs (Chauhan et al., 2014, p. 667).

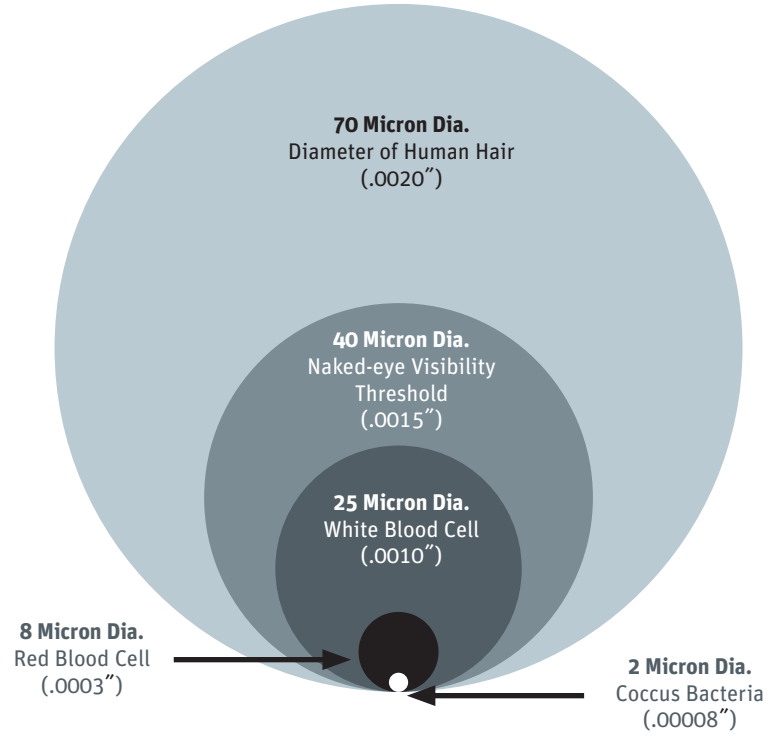
VOCs are present in a wide array of manufactured products, ranging from construction materials to consumer products (US EPA, 2022). The average home, office, or automobile may have many VOCs in the fabrics, plastics, paints, adhesives and more that make up the environment (American Lung Association, 2021, p. 1; Miller et al., 2020, p. 2). VOCs also can occur from a variety of agricultural and industrial activities, subsequently polluting the local area with industrial emissions. Waste from metal fabrication facilities are a notable source of harmful VOCs (Miller et al., 2020, p. 3; Chauhan et al., 2014, p. 668). Fossil fuel combustion also produces VOC byproducts such as benzene (Chauhan et al., 2014, p. 668). Cities with a long history of industrial activity are particularly at risk for experiencing negative effects of VOCs emitting from the industrial sector (Miller et al., 2020, p. 2).

VOCs have been found to migrate far beyond their original source and can pollute buildings throughout the community via air, groundwater, and soil. VOCs also contribute to primary and secondary pollution on a regional scale. Primary pollution comes directly from the source as-is, while secondary pollution happens when primary pollution particles enter into chemical reactions with other substances in the environment (Chauhan et al., 2014, p. 667). VOCs can accumulate and persist in indoor settings, becoming highly concentrated (US EPA, 2022). Cracks or faults in basements, attached garages, the bedding fill around subterranean utility lines, and leaks from landfills or storage tanks include some of the pathways of contamination (Miller et al., 2020, pp. 4–6). Flooded basements and shallow groundwater can also enable the entry of VOCs, which is of special concern for a flood-prone city like Winnipeg (Miller et al., 2020, p. 3). Cities like Winnipeg, which have soil containing abundant clay and silt, are at especially high risk of VOC migration underground (Miller et al., 2020, p. 6).

Particulate Matter

The term “particulate matter” (PM) describes a type of air pollution. It takes the form of liquid droplets and solids that are too small to see and are

FIGURE 1 Understanding Microns (ISM, 2022)



suspended in the air. These particles can also linger in the air for days or weeks and can migrate to other places (Environmental Protection Agency, 2003; World Health Organization Regional Office for Europe, 2013).

PM2.5 means the particulate matter is 2.5 microns in diameter. A micron is one millionth of a meter. For comparison, a human hair is about 70 microns, the smallest size a human eye can see is 40 microns, and a red blood cell is about 8 microns (McAlpine, 2020). PM of 10 or less is dangerous because the size of the particles can migrate deeply into lungs. At PM2.5, the particles can enter the bloodstream (Environmental Protection Agency, 2003). PM2.5 can cause genetic damage, interfere with cellular function, and cause injury due to inflammation at a microscopic level (Xing et al., 2016).

PM consists of many different substances such as heavy metals, elemental carbon, ions of sodium, potassium, calcium, magnesium, chloride, sulfates, nitrates, ammonium, water bound to other molecules, polycyclic aromatic hydrocarbons (PAHs), allergens, and pathogens (World Health Organization Regional Office for Europe, 2013, p. 2). There are two major forms of PM. Primary PM enters the air from a clear source, such as dust or combustion. Secondary PM is formed in the air from other pollutants that

react with sulfur dioxides, nitrous oxide, and volatile organic compounds (VOCs) (Government of Canada, 2021, p. 33).

Approximately 1.6 million tonnes of PM2.5 were emitted into the atmosphere in Canada between 2015–2017, chiefly deriving from dust and agricultural activities. Another major source of PM in Canada is residential wood burning. Manufacturing was responsible for an annual average of 17,333 tonnes of PM emitted, while waste and incineration was responsible for an annual average of 2,733 tonnes of PM. PM can also come from natural events such as volcanoes (Government of Canada, 2021 p. 33; World Health Organization Regional Office for Europe, 2013, p. 3).

Exposure to PM2.5 can cause or worsen heart and lung disease, and consequently has been shown to increase trips to the emergency room and hospitalizations. Children, seniors, and people with pre-existing health problems are especially vulnerable to the disease risks of PM2.5. Children may also be at risk of poor lung development due to PM exposure (Environmental Protection Agency, 2003; Government of Canada, 2021, p. 34; World Health Organization Regional Office for Europe, 2013, p. 6). It is estimated that chronic exposure to PM2.5 has caused 8% of non-accidental deaths in Canada, or the deaths of about 10,000 people (Government of Canada, 2021, p. 16).

Auto Shredder Residue (ASR)

Auto Shredder Residue (ASR) is a byproduct of the auto shredding industry. About 75% of an end-of-life car can be recycled and the remaining 25% becomes ASR (Cooper, 2014). It consists of many components of cars and other large appliances, such as metal, textiles, glass, wood, rubber, plastics, and paint. The particles present as fluff in the air (Vijayan et al., 2022, p. 1). Large quantities of ASR can be flammable, depending on the mix of substances in the ASR. Negative health effects associated with ASR include eye inflammation, skin irritation, allergy-like symptoms, and dysfunction in the heart, circulation, lungs, kidneys, nervous system, and possibly reproductive problems (Gerdau Industries, 2012, p. 1). Research has been done in recent years on the possibility of recycling ASR as a fuel, but most recaptured ASR ends up in a landfill (Cooper, 2014; Vijayan et al., 2022).

PHOTO 5 Auto Shredder Residue

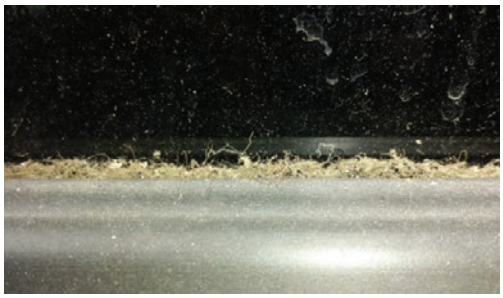


PHOTO 6 A Busy Scrap Yard



Noise

Noise is often neglected when discussing the dangers of pollution, but exposure to loud noise has been shown to be harmful to human health (Stansfeld & Matheson, 2003 p. 253), especially if it occurs above 40 dB(A) (F. S. Solademi, 2020, p. 32). Noise pollution can be considered a type of air pollution and can stir "fight or flight" reactions in those impacted by it (Goines & Hagler, 2007, pp. 287–290). Disturbances may be continuous, impulsive (manifesting as a single intense noise), or intermittent, but they all can cause a significant loss of health and quality of life (Slabbekoorn, 2019, p. 957; Stansfeld & Matheson, 2003; F. S. Solademi, 2020, p. 35). Sources of noise pollution can include industrial facilities, railways, car traffic, and nearby airports. This makes control and enforcement difficult because the noise sources are representative of desired services (Goines & Hagler, 2007, p. 288). Prevailing winds can also amplify noise pollution (F. S. Solademi, 2020, p. 33).

Noise pollution can cause problems such as hearing loss, worsening mental health, frustration from impaired communication, disturbed sleep, and physical effects such as nervous system, hormonal, and cardiovascular

diseases (Goines & Hagler, 2007, p. 289–291; Slabbekoorn, 2019, p. 957; Stansfeld & Matheson, 2003, pp. 244–253; F. S. Solademi, 2020, p. 32). A sense of having no control over the source of noise intensifies the negative effects on mental health (Goines & Hagler, 2007, p. 291). Noise pollution has been shown to contribute to diminished cognitive development and school performance in children (Goines & Hagler, 2007, p. 289; Stansfeld & Matheson, 2003, pp. 250–252; Solademi, 2020 p. 36). Excessive noise can also have a negative impact on the health of non-human species (Slabbekoorn, 2019, p. 958; F. S. Solademi, 2020, pp. 33–34).

Regulatory Overview

THIS SECTION DISCUSSES the legal control that applicable provincial, municipal and federal governments have in regard to the regulation of toxic substances, contaminated sites, and the protection of human and environmental health within the project area.[2] This includes laws and policies that apply at the federal level, in Manitoba, and in the City of Winnipeg. An overview of the most relevant laws and policies within each of these jurisdictions is provided with a focus on the role of the public, access to information, and enforcement mechanisms. A complete list of references for this section is included in the "References: Regulatory Overview" section at the end of this report. The endnotes are located after the Appendixes.

As we move through each jurisdiction, the current regulatory requirements related to toxic substances and the protection of environmental and human health are complicated and confusing. Each level of government has different but overlapping legal powers. There are many areas of law involved and a broad range of different statutory and policy documents that must be reviewed to understand the current scope of the law. There are gaps in current law and policy that are only apparent when comparing Manitoba's regulatory framework with requirements in other Canadian jurisdictions.

The Government of Manitoba has the most direct legal control over contaminated and remediated sites, public health, and project assessment and approval processes (e.g. environmental assessment). The City of Winnipeg plays an important legal role when it comes to land use planning within the project area and enforcement of proper site use, and has the ability to regulate

other aspects of industrial operations within city limits. The Government of Canada has the least control or impact in some areas of legal control, such as land use planning, but is the main regulator of the production and use of toxic substances across Canada. So, depending on the particular situation that a community member or NGO may be dealing with, there are usually multiple levels of government and often multiple departments that must be involved when seeking a resolution.

Since the legal and policy research for this project was focused on identifying regulatory requirements applicable within the project area, this section focuses first on Manitoba, and then discusses the City of Winnipeg, the two levels of government with most legal power to directly address the problems identified by community members. Federal legal requirements are only briefly discussed as federal mechanisms were largely out of scope for this project.

The Government of Manitoba: Provincial Responsibility and Regulation

Provincial governments in Canada, such as the Government of Manitoba, are generally considered to have the most legal control when it comes to issues involving public health and the environment. For this project, with its focus on public exposure to toxic substances, this means that the most directly related legal and policy mechanisms are found at the provincial level. This includes almost complete regulatory control over contaminated sites and the remediation process, public health, environmental assessment, and natural resource project approvals. The Government of Manitoba also has legal powers in relation to land use planning, access to information and enforcement of provincial legal requirements.

Contaminated Sites and Exposure to Toxic Substances

In Manitoba, the Government of Manitoba has the most legal responsibility in relation to the regulation and enforcement of contaminated sites and remediation of these sites. The provincial law setting out these requirements is *The Contaminated Sites Remediation Act (CSRA)* and the corresponding *Contaminated Sites Remediation Regulation (CSR Reg)*.[3] The CSRA and CSR Reg establish the legal requirements for identifying and registering contaminated sites and impacted sites in Manitoba, determining the appropriate clean-up (i.e. remediation) process to be undertaken for contaminated and impacted

sites, identifying who is responsible for the clean-up and associated costs, and standards for reporting.[4]

The Minister of Environment, Climate and Parks is responsible for the administration and enforcement of the *CSRA* and its regulations.[5] Manitoba follows the "polluter pays" principle, placing responsibility on the original owner or operator of a contaminated or potentially contaminated site.[6] Property owners or occupiers are required to notify the Department of Environment, Climate and Parks once they become aware of any potential contamination and must provide the Director with all available reports and documentation about the contamination of the site.[7] Contamination is considered "the presence in, on or under, or the permeation or infusion of, soil, sediment, surface water or groundwater of or by a contaminant".[8] A contaminant includes "any product, substance or organism that is foreign to or in excess of the natural constituents of the environment at the site and that (a) has affected, is affecting or may affect the natural, physical, chemical or biological quality of the environment, or (b) is, or is likely to be, injurious or damaging to the health or safety of a person".[9] The Department then oversees the investigation, designation, and remediation process.[10]

Under the *CSRA*, a Director and Environment Officers are appointed by the Minister to help with the enforcement and administration of the legal requirements.[11] The Director's role is to help determine the designation of contaminated and impacted sites and maintain the registry of contaminated sites. The Director must ensure that all information and documentation required in the reporting of contaminated sites is filed in a timely matter.[12] According to the CSR Reg, the following information should be available through the public registry:[13]

- Notices, orders and certificates issued;
- Documents summarizing the nature and extent of contamination at the site;
- Electronic summary documents that were produced for the file; and
- Any other documents the Director has filed.[14]

A range of other provincial laws and regulations may also be applicable in Manitoba when dealing with situations involving potential contamination of land, air, or water by toxic substances.[15] In particular, these situations are governed by legislation that sets public health standards or regulates the construction and operation of industrial facilities and other activities that can negatively impact human health and the local environment.

Protecting Public Health

The Public Health Act establishes the legislative framework used by the Government of Manitoba to address public health emergencies and undertake provincial public health functions such as health surveillance, disease and injury presentation, and population health assessments.[16] Public health inspectors are empowered by the Act to undertake health inspections and collect publicly available information on regulated facilities.[17] Every health region in Manitoba is also required to undertake a Community Health Assessment once every five years.[18] The public has access to their personal health information as required by *The Personal Health Information Act*.[19] Health and safety requirements to protect workers from situations with adverse health impacts (e.g. exposure to toxic substances) in Manitoba are set under *The Workplace Safety and Health Act*.[20]

Environmental Assessment

The Environment Act sets out the regulatory framework for the environmental assessment process in Manitoba.[21] Proposed developments with the potential for significant environmental effects must undergo the environmental assessment process under this Act and obtain an Environment Act License from the Department of Environment, Climate and Parks. As required by the *Licensing Procedures Regulation*, the potential effects that must be disclosed during the environmental assessment process include:

- The type, quantity and concentration of pollutants to be released in the air, water or on the land;
- Effects on wildlife and fisheries;
- Effects on surface and groundwater;
- Forestry-related effects;
- Climate change considerations (i.e. the amount of greenhouse gases to be generated by the proposed development and the energy efficiency of the proposed development);
- Effects on heritage resources; and
- Socio-economic implications resulting from the environmental effects.[22]

Proponents of proposed projects must also provide information about their plans to mitigate any socio-economic or environmental impacts. Proponents may also be required to undertake monitoring and follow-up activities to

collect and publish data about the operation and actual impacts of the development. Information about projects assessed and licensed under *The Environment Act* can be found online in the public registry.[23]

Land Use Planning

Legal control over land use planning is shared by the Government of Manitoba and municipal governments. Land use policies in Manitoba address urban, rural and regional development (e.g., residential, agricultural, commercial, industrial, institutional, recreational), and the protection and enhancement of the environment, the transportation system and other infrastructure, and mineral development, among other things.[24] Municipal governments have their legal powers related to land use planning granted to them from the provincial government through provincial legislation. In Manitoba, this delegation of power happens through *The Municipal Act* and related legislation like *The City of Winnipeg Charter*.[25] Municipal governments and the by-laws and policies they enact are also required to comply with provincial planning policies and land use planning legislation such as *The Planning Act*.[26]

Enforcement

If an individual or corporation breaks a provincial law or does not meet a regulatory requirement, the Government of Manitoba can take a range of different enforcement actions. Environment Officers are empowered to assist with this enforcement of provincial legislation.[27] Provincial legislation usually has an "offences and penalties" section that indicates the statutory penalties that can be applied.[28] For example, individuals who violate *The Contaminated Sites Remediation Act* or *The Environment Act* face a fine of at least $50,000 or a jail term of six months.[29] Corporations face a fine of at least $500,000.[30] Government employees who disclose information about government actions that may violate the law or endanger the life, health or safety of persons or the environment are protected from reprisal under *The Public Interest Disclosure (Whistleblower Protection) Act*.[31]

If the conditions of an issued license or permit have been violated, the Government of Manitoba can suspend or revoke all or part of the license or permit, which could mean that all previously approved activities must stop until the legal requirements are once again fulfilled.[32] The main source of public enforcement information at the provincial level is in the relevant government department's annual report. For example, the Department of Environment, Climate and Parks publishes a summary of compliance activ-

ities related to *The Contaminated Sites Remediation Act* and environmental approvals issued under *The Environment Act*.[33]

Negatively impacted individuals or corporations may also use common law mechanisms, such as a civil tort lawsuit or a class action lawsuit, to seek legal remedies in situations where the actions of another private party have caused damage to personal property or human health.[34] Members of the public can also make a complaint to the Manitoba Ombudsman or Auditor General about the actions of provincial government officials and potentially initiate an investigation or audit.[35]

Access to Information

Public access to information about the various legal mechanisms discussed above and potential health and environmental impacts varies depending on the applicable laws and policies. At the provincial level, members of the public have access to a range of different information through the Government of Manitoba website and affiliated public databases. For example, information about contaminated and impacted sites is available on the Department of Environment, Climate and Parks website. Information about designated contaminated sites, impacted sites and a list of all sites for which information has been submitted to the Department is available through the public registry.[36]

For most of this project, there was very minimal registry information available online through the Government of Manitoba website. We ended up requesting more information about contaminated and remediated sites in our project area and received a broad range of scanned documents. However, before the project team had a chance to review this scanned information, the Government of Manitoba launched an updated version of the online registry that provides access to a broad range of documents in PDF format. Due to the timing of the new registry launch we have not yet been able to review the contents in detail.

Manitobans can also access information about projects currently undergoing Manitoba's environmental assessment and licensing process under *The Environment Act* through the public registry associated with this Act.[37] The registry provides a range of different information including access to Environment Act Proposals, licensing documents, and correspondence between the various stakeholders involved in the environmental assessment process. This registry does not provide access to monitoring or follow-up data.

Various data is also available through the Government of Manitoba's InfoMB database.[38] Members of the public can also pay for the Department of Environment, Climate and Parks to undertake an Environmental File Search for specific properties.[39] Information may also be sought through the Access to Information process under *The Freedom of Information and Protection of Privacy Act* (FIPPA).[40]

The Role of the Public:

One of the main research questions we focused on during this project is the role of the public within the various legal processes and frameworks applicable to the project area. At the provincial level, we have found that there is a little to no role for the public when it comes to the reporting, investigation, monitoring, and enforcement of provincial requirements related to contaminated sites and the prevention of contamination of air, water, and land by substances that could negatively impact human and environmental health. The legal obligations and requirements for these processes are largely focused on government and owners of private property.

Manitobans do not have legally recognized substantive environmental rights, e.g. the right to a healthy environment, and minimal procedural environmental rights.[41] This means that Manitobans have access to fewer legal tools in comparison to Canadians in other provincial (Ontario, Quebec) and territorial jurisdictions (Yukon, Nunavut, Northwest Territories) with recognized environmental human rights.[42] This includes legal mechanisms that grant citizens legal standing to initiate lawsuits, trigger government investigations, access to information requirements, and independent oversight. There have been numerous attempts in the past to have the environmental human rights of Manitobans recognized by the Manitoba Legislative Assembly.[43] Most notably, government-sponsored Bill 20, *The Environmental Rights Act*, was introduced in 2016.[44] Recognition of environmental human rights in other Canadian jurisdictions has occurred through various legal approaches, including recognition in existing environmental legislation, recognition in provincial human rights legislation, and recognition in standalone environmental rights legislation, which was the approach used with Manitoba's Bill 20. The recognition of environmental human rights has also occurred at the municipal level in Canada with many municipal governments recognizing the right to a healthy environment through municipal declarations. In Manitoba, several municipal governments have recognized

environmental human rights including The Pas, Whitemouth, Dunnottar, Thompson, Stonewall, and Selkirk.

Manitoba also does not have any legal protections for members of the public-facing Strategic Lawsuits Against Public Participation (SLAPP suits), such as the anti-SLAPP legislation enacted in other Canadian jurisdictions.[45] A SLAPP suit is a legal proceeding (e.g. lawsuit for defamation) intended to discourage citizens from making public statements about their environmental and health concerns and is an approach that has been used across Canada, including Manitoba, to restrain the activities of environmental activists. Ontario and British Columba have both passed new laws to protect advocates from these types of lawsuits. In Ontario, the *Protection of Public Participation Act, 2015*, which amended the *Courts of Justice Act*, the *Libel and Slander Act* and the *Statutory Powers Procedure Act* has created a process for the Ontario Courts to use when it is suspected that a legal proceeding is a SLAPP suit.[46] Similarly, British Columbia adopted the *Protection of Public Participation Act* in 2019 to allow a similar court procedure and option for dismissal when a SLAPP suit is initiated.[47]

In Manitoba, the public does not have a recognized role in the contaminated sites process under the CSRA, other than some requirements related to publicly available information and the potential opportunity for a public hearing.[48] The public can access information about contaminated and impacted sites through the Contaminated Sites Registry, as discussed above. The Clean Environment Commission may also conduct a public hearing for a proposed remediation plan or an appeal.[49] Potential contaminated sites can be reported by the public to the Department of Environment, Climate, and Parks through their 24-hour emergency response line at 1-855-944-4888.[50] Members of the public can also subscribe to the contaminatedsites@gov.mb.ca email list for guidelines and information bulletins produced by the Contaminated/Impacted Sites Program.

The role of the public in other regulatory processes related to land use planning, environmental assessment, and the issuance of permits and licenses varies but is usually restricted to having the right to access certain information and providing written comments during public consultation periods. Manitoba's environmental assessment process provides the most opportunity for public participation but has been criticized for making some of these requirements discretionary, such as the requirement for a public hearing, which often leads to a lack of meaningful public participation.[51]

Members of the public may also have the ability to appeal certain decisions of the Government of Manitoba (e.g. issuing an Environment Act

License or natural resource permits), but most statutory appeal processes have been deemed ineffective since the same government department that made the disputed decision is often responsible for determining if the appeal can proceed and what, if any, changes should occur as a result.[52] This has resulted in the dismissal of the majority of attempted appeals. Judicial review of government decisions is also an option for individuals and organizations, but access to this legal approach may only be available if the party seeking the review has already participated in the applicable statutory appeal process.[53]

The public also has the opportunity to participate in law-making and law reform processes related to contaminated sites and protection of protection of the public from exposure to toxic substances through the provincial government's online consultation portals (e.g. EngageMB, Manitoba Regulatory Consultation Portal) and through Manitoba's legislative process (e.g. providing comments to a standing committee of the Manitoba Legislature, Petitions, Private Member Bills).[54]

In terms of determining provincial financial priorities, members of the public can engage in the Government of Manitoba's budget process. For the provincial government's 2022 budget, there were numerous opportunities to provide feedback on the government's financial priorities through the EngageMB website, virtual public meetings, and telephone town halls.[55] An Engagement Survey Report was also published.[56]

The City Of Winnipeg: Municipal Powers and the Environment

Municipal governments, like the City of Winnipeg, have a broad range of legal powers that both directly and indirectly impact the environment and the health of local citizens. Key roles of municipal governments include waste management, water and wastewater treatment, and land use planning and development. There is also potential for municipal governments to play an important role in the regulation and management of natural areas including air and water quality, toxic substances, redevelopment of contaminated lands, and conservation of wildlife and water resources.[57] Although there is much potential, the City of Winnipeg has so far done little to address the concerns of citizens in our project study area. As a result, there are few municipal policies or by-laws that address the issue of toxic contamination of residential neighbourhoods near industrial areas.

In Canada, municipal governments get their legal powers from the provincial government through the passage of legislation like *The Municipal Act* and *The City of Winnipeg Charter*.[58] As a result, municipal governments can only act within the scope of powers delegated to them. In Manitoba, *The Municipal Act* sets out the range of subject matter that municipal governments can address through their policies and by-laws.[59] Large urban municipalities may also have their own specific legislation that indicates their legal powers, for example, the City of Winnipeg's legal powers are set out in *The City of Winnipeg Charter*. When this occurs, the requirements in the Act will usually take precedent over more general legislation like *The Municipal Act*. Thus, the focus of this section will be on the legal powers established in *The City of Winnipeg Charter*. Municipal governments can also have additional legal powers that may affect the environment delegated to them under more, subject to specific provincial legislation.[60]

Development Plans and Brownfields

The City of Winnipeg plays a significant role in municipal land use planning, which impacts the environment at a local and regional level. Municipal by-laws and policies set out the requirements for where development can occur, how construction and re-development activities can take place, how older neighbourhoods will be maintained, the availability of public transportation, and a number of other factors that impact the environment and quality of life for citizens.[61] The City of Winnipeg is responsible for developing and establishing high level development plans and policies, setting zoning restrictions and development standards and approving applications for re-zoning and new developments, among other responsibilities that could impact the environment and human health.

Before providing more details about the scope of current municipal law in Winnipeg, it is important to note that there have been some recent changes to land use planning in Manitoba that continue to have unclear implications for the City of Winnipeg. Most significant are the changes that were made by *The Planning Amendment and City of Winnipeg Charter Amendment Act* enacted in 2021.[62] This Act established a new planning region, The Capital Planning Region, for the Winnipeg metropolitan area and required the creation of a new regional planning by-law that municipal development plans, secondary plans and zoning by-laws must comply with.[63] A new Capital Planning Region Board was also established. Although there has been public and industry consultation on the draft regional development plan, *Plan 2050*,[64]

and draft *Capital Planning Region Regulation* under *The Planning Act*,[65] the final versions have not yet been enacted. Review of these drafts did not indicate there are any specific plans or requirements being contemplated in relation to contaminated, remediated or brownfield sites.[66] There may be some additional opportunity for public engagement in planning processes at this level, so further consideration of the final regulations and plans is necessary. The powers of the Municipal Board were also increased as a result of the Amendment Act passed in 2021, which created the opportunity for development plans, secondary plans, and zoning by-laws passed by the City of Winnipeg to be appealed to the Municipal Board.[67] These expanded powers and their potential implications will be discussed more below.

The basic framework for land-use planning and development in Manitoba is established by *The Planning Act*.[68] Under this provincial Act, municipal councils are delegated the legal responsibility for development plan by-laws, zoning by-laws, and all other by-laws respecting land use and development for the municipality, including development plan by-laws if a planning district has been established in the area.[69] Power is also granted to establish a planning commission, if applicable, to hold hearings and make decisions related to variances and conditional uses.[70] The City of Winnipeg does not have a planning commission. Provincial land use policies no longer apply to municipalities that have adopted a development plan by-law.[71] However, any part of a development plan by-law that conflicts with an existing provincial law is not valid to the extent of the inconsistency.[72] The City of Winnipeg must also follow the requirements of *The City of Winnipeg Charter Act [Winnipeg Charter]*, which also requires the adoption of a development plan and secondary plans.[73] The *Winnipeg Charter* requires the development plan to conform with the P*rovincial Planning Regulation* under *The Planning Act*.

Municipal development plans must include the following elements:[74]

- plans and policies of the municipality respecting its purposes and its physical, social, environmental and economic objectives;
- a long-term vision that supports the health and well-being of residents, the economy and environment, including the goals, policies, and time lines for achieving the vision;
- maps, and objectives to facilitate sustainable land use and development in the municipality;

- identification and comparison of resources and environmental features in or near existing developments, to identify the opportunities for growth and the limits to growth;
- identification of designated land uses and directions for growth in the intermediate and long-term planning horizons;
- identification of public services that are planned or required for the intermediate and long-term planning horizons, including information on how the expenses respecting the public services will be paid;
- measures for implementing the plan;
- other matters as the minister or council considers advisable.

Municipal governments are also required to undertake a range of different studies when creating a new or updated development plan.[75] Such studies and analyses of resulting data must be undertaken with the assistance of qualified professionals in planning and other related disciplines.[76] The level of detail and complexity of the analyses and surveys prepared must also be written in a way that reflects local circumstance and the context of the matter under consideration.[77] This includes studies addressing:

- economic and fiscal capacity of the planning area to support and pay for development;
- agriculture, forestry, wildlife, heritage, natural lands and mineral resources in the planning area;
- capacity of resources, such as water, in the planning are to support development;
- demographic and population projections;
- supply and demand for residential and other land uses;
- existing housing stock and projected of housing needs;
- traffic impacts of development and the options for addressing future transportation needs;
- existing and forecasted amounts and sources of greenhouse gas emissions;

- existing and future drinking water servicing and wastewater management needs of the planning area and options for addressing those needs;
- vulnerabilities of the planning area to climate change; and
- any other matter related to the present or future physical, environmental, social, cultural or economic characteristics of the planning area that may be relevant to the development plan.[78]

There are, however, no requirements for the results of such studies undertaken by a municipality in this context to be made publicly available. Therefore, it is difficult to identify which studies, if any, have been undertaken when new plans are policies are developed by municipal governments like the City of Winnipeg.

To support the development objectives of a municipality, municipal councils can also adopt a secondary plan that addresses: any matter dealt with in the development plan by-law; subdivision design, road patterns, building standards or other land use and development matters; economic development; or the enhancement or special protection of heritage resources or sensitive lands.[79]

In Winnipeg, the main development plan that has been created based on the requirements of *The Planning Act and the Winnipeg Charter*, is *OurWinnipeg2045*.[80] This development plan was recently reviewed and updated to "align all other statutory and strategic City documents such as shorter term Corporate Strategic Plans, Council policy, budgets and implementation tools on specific issues or areas."[81] This included amalgamating existing plans such as the 2011 OurWinnipeg Direction Strategies and Winnipeg's Climate Action Plan.

To support this updated plan, the City has also adopted the *Complete Communities Direction Strategy 2.0* which is a citywide secondary plan that is intended to guide growth, development, and land use in the city of Winnipeg.[82] There are other secondary plans in Winnipeg, called "Local Area Plans", that provide further details on development plans for specific neighbourhoods, however, there are a lack of such plans for the specific neighbourhoods in our study area and minimal to no requirements related to our research topics.[83] Other relevant by-laws and development requirements (e.g., zoning) will be discussed later in this chapter.

When undertaking research on the City of Winnipeg, we were focused on identifying municipal requirements related to contaminated and remediated

sites, brownfield redevelopment, and zoning requirements near industrial areas. We were trying to identify the City of Winnipeg's strategy to deal with conflicts between industrial and other land uses, and the remediation/redevelopment of contaminated and brownfield sites. Unfortunately, our research indicates that these issues have only been addressed in a very minimal way, or not at all. There is clearly a need for more significant research focused on analyzing the City of Winnipeg's municipal by-laws and plans and identifying better practices from other municipalities in Canada that could potentially be adopted in the City of Winnipeg.

In *OurWinnipeg2045*, for example, there were only a few high-level commitments to brownfield development. In the context of Winnipeg's development and secondary plans, "brownfield" refers to "land that was previously developed and may be abandoned, vacant, derelict or under-utilized and may have some form of ground contamination."[84] The City of Winnipeg recognizes that brownfield sites often require some form of remediation before they can be redeveloped, and that such sites are often land previously used for industrial or commercial purposes with known or suspected ground contamination.[85]

One of the goals of *OurWinnipeg2045* related to city building and brownfield land, is to "collaborate with government bodies, including Indigenous, Federal, and Provincial governments, and stakeholders in pursuit of the context-sensitive remediation and redevelopment of brownfield lands".[86] The plan indicates this goal will contribute to leadership and good governance, environmental resilience, economic prosperity, good health and well-being, and social equity.[87] In support of this goal, the city's secondary plan, *Complete Communities 2.0*, also makes a commitment to addressing brownfields and contaminated sites. Goal 11 seeks to "bring existing brownfields or contaminated sites back to productive use". To support this goal, policy commitments were made to:

- Identify potential priority brownfield sites that are appropriate for potential future infill development;
- Encourage context-sensitive redevelopment of existing brownfield sites; and
- Consider providing additional tools to help redevelop priority brownfield sites.[88]

While these commitments are promising, there are no further details available about these goals and future policies, including what "additional tools" the City is considering adopting to help redevelop brownfield sites.

There do not appear to be any other references or commitments made by the City of Winnipeg to brownfield or contaminated site redevelopment in other plans, by-laws, and policies. A review of other secondary plans adopted in Winnipeg, which could provide more neighbourhood specific context and direction, did not identify any provisions related to contaminated sites or brownfield re-development in our project area. However, as noted elsewhere in this section, more research and analysis is needed.

Zoning By-laws

The City of Winnipeg, like other Manitoba municipal governments, is also required to adopt a Zoning by-law that is consistent with the City's development plan and secondary plans.[89] Zoning by-laws also plan an important role in setting requirements for how land can be used and developed within a municipality. In Winnipeg, there are two main Zoning by-laws: the *Downtown Winnipeg Zoning By-Law*,[90] which applies to the downtown area and *The City of Winnipeg Zoning By-law*,[91] which applies to all other areas of the city.

These by-laws divide the City of Winnipeg into zoning districts, with different land uses allowed in each district.[92] Each zoning district also has its own rules for the location and size of buildings, parking, and landscaping requirements, among other things.[93] Zoning by-laws are also required to set out the process for applying for and issuing development permits, non-confirming use certificates and other legal approvals.[94] See *Table 21* below for the variety of issues that can be addressed in a municipal zoning by-law. Moving forward, it will be important to undertake more in-depth review of the City of Winnipeg's zoning by-laws and determine which of these potential elements from *Table 1* are addressed, the effectiveness of these measures, and identify missing elements that could potentially be added to City of Winnipeg by-laws in the future to better address the needs of community members in our project area.

Winnipeg's zoning by-laws establish different zoning districts and sectors within the City's boundaries that allow different land-uses, depending on the intended characteristics of that type of district or sector. For example, most of the industrial activities identified by participants as the origin of negative environmental or health consequences involve land uses intended to take place in a manufacturing district.[95] The zoning by-laws recognize a range

TABLE 21 What Can a Zoning By-Law Include in the City of Winnipeg?

• classifications of uses of land and buildings;	• the outdoor storage of goods, including machinery, building materials and waste materials;
• permitted and conditional uses of real property;	• the removal, deposit or movement of soil, gravel or other material;
• the number and dimensions of dwelling units or non-residential buildings permitted on a lot or other land;	• the cutting and removal of vegetation;
• the area and dimensions of lots or other units of land;	• the placement of pedestrian walkways;
• the number, lot coverage, floor area, dimensions and locations of buildings on units of land;	• the kind, number, nature, location and dimensions of outdoor signs and displays;
• the location, height and maintenance of fences and walls;	• the protection of scenic areas, heritage resources and sensitive land;
• open space around and between buildings and minimum distances between buildings;	• the protection of a water or sewage treatment facility, waste disposal facility or any other utility or public work from incompatible uses;
• landscaping and buffers between buildings, units of land, and different uses of real property;	• for new residential developments, the establishment of a specified percentage of the dwelling units within the development that offer affordable housing to low- and moderate-income households;
• establishment and maintenance of parking and loading facilities;	• modification of the zoning requirements otherwise applicable, including requirements respecting density of dwelling units, if a development provides the public benefits prescribed in the by-law, such as affordable housing;
• the design details of buildings and building sites, including vacant sites, and the establishment of committees or boards to approve designs;	• the sequence in which development is undertaken;
• the location, dimensions and number of access points from a unit of land to a street;	• such other matters as council consider necessary or advisable.
• the use and placement of exterior lighting on land and the exterior of buildings;	

Source: *The City of Winnipeg Charter Act*, s 236(2)

of different land-use categories and sub-categories that capture industrial activities. This includes industrial uses, light industrial uses, industrial service uses, manufacturing and production use, and waste and salvage use.[96]

Although there is potential for a broad range of subject matter to be included in Winnipeg's Zoning By-Laws, there are few requirements that appear to directly address the concerns of community members living near areas of industrial activity. Contaminated and brownfield sites are not addressed in the by-laws and there are no references to toxic substances, except for a brief reference in the list of considerations the Director must consider when determining if a proposed use falls within an approved category.[97]

If a citizen believes that a zoning by-law negatively affects their property rights, they can apply for a variance order, which changes the applicability of specific provisions of the zoning by-law as they apply to the affected property.[98] Variances may be approved if they: are consistent with Winni-

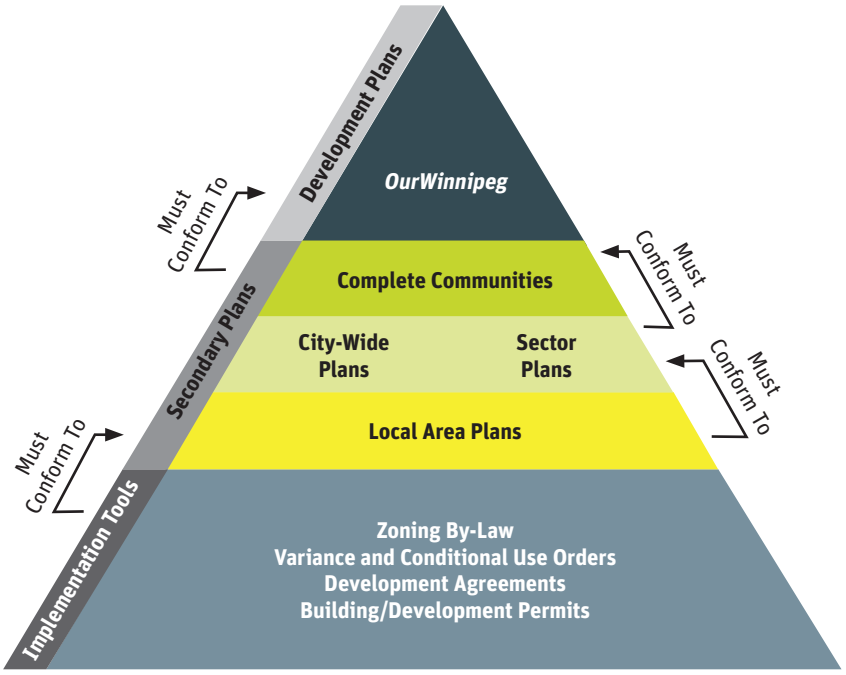
peg's development plan and any applicable secondary plan; do not create a substantial adverse effect on the amenities, use, safety and convenience of the adjoining property and adjacent area; are the minimum modification of a zoning by-law required to relieve the injurious effect of the zoning by-law on the applicant's property; and are compatible with the area in which the property to be affected is situated.[99] However, variance orders will only be issued if the requested change of land use is temporary (for a period of not more than five years) or the change of land use is substantially similar to a permitted use under the applicable zoning by-law. [100]A more permanent permitted change of land-use can also be secured by obtaining a conditional use approval from the City of Winnipeg.[101]

The City of Winnipeg may also impose additional requirements on land-use through the issuance of a building permit or development permit authorizing the construction or alteration of all or part of any building.[102] As a condition of a building permit, the City can require the owners of the affected land to enter into a conforming construction agreement. This type of agreement addresses the required separation between buildings and the required access to public thoroughfares from building exists and to public streets.[103] The City of Winnipeg can also require any person who has applied for a zoning by-law amendment, conditional use, or variance to enter into a development agreement respecting the development of their land and any real property owned or leased by them.[104] A development agreement with the City of Winnipeg can address any of the following issues:

- the use of the land and any existing or proposed building;
- the timing of construction of a proposed building;
- the siting and design of a proposed building, including the materials to be used for the building exterior;
- the provision of affordable housing, if the application is in respect of a new residential development;
- traffic control and parking facilities;
- landscaping, open space and grading of land;
- in the case of the adoption of, or an amendment to, a zoning by-law, any condition that can be required in plans for a subdivision (s. 259(1)).[105]

The City of Winnipeg is also able to designate land within its boundaries as "Public Reserve Land".[106] Public reserve land can only be used for a public

FIGURE 2 Authority of Plans Guiding City of Winnipeg Activities



park, public recreation area, natural area, planted buffer strip separating incompatible land uses, or public works. When a municipality wants to close public reserve land, they are required to provide notice and hold a public hearing.[107]

Overall, land-use planning and other regulatory approvals that influence land-use and the operation of industrial activities within the City of Winnipeg originate from a complicated hierarchy of provincial legislation, development plans, and municipal by-laws. *Figure 2* above, from the recently approved *OurWinnipeg 2045*, provides insight into this hierarchy, but does not include other legal influences outside of the City of Winnipeg like provincial legislation and the not yet finalized regional capital plan. Despite this complicated system of land-use requirements, there continues to be little to no specific requirements or commitments addressing contaminated, remediated and brownfield sites, or the creation of mechanisms to address potentially negative health and environmental impacts deriving from exposure to toxic substances.

Other By-Laws of Interest:

There are a range of other by-laws in the City of Winnipeg that have potential to address some of the concerns identified by our project participants. However, as discussed above, we have found few, if any, current provisions that address the problem of toxic contamination in city neighbourhoods, redevelopment of contaminated and brownfield sites, or create meaningful opportunities for citizens to engage in processes that would allow them to address these issues with decision-makers. Therefore, only a brief overview will be provided.

Neighbourhood Liveability

Municipal governments have the legal power to enact by-laws that address nuisances and unsanitary conditions on property within city boundaries. In Winnipeg, the Neighbourhood Liveability By-law sets out a range of different requirements that property owners must comply with.[108] Several community concerns are addressed in this by-law including requirements related to littering and garbage, including hazardous waste,[109] and noise.[110]

Vacant Buildings

There are numerous by-laws in Winnipeg that set out requirements related to vacant and derelict buildings.[111] Our study area, especially those neighbourhoods in downtown Winnipeg, contain a variety of vacant and derelict properties. Some community members identified concerns related to such properties, as they are a potential source of toxic contaminants and fires, which impact air quality. In *OurWinnipeg 2045*, there are a number of commitments indicating the City's interest in "adaptive resuse", which involves "a change in use (and often structure) of a building whose original use is no longer needed"[112] and redevelopment of industrial and warehouse buildings, and derelict parcels of land.[113] However, current by-laws addressing vacant and derelict buildings do not focus on redevelopment and instead provide basic requirements for upkeep and maintenance of vacant properties.[114] The City has also created a legal process for property owners to acquire title to derelict buildings.[115]

Garbage and Wastewater

The City of Winnipeg also has authority to pass by-laws and policies addressing management of solid waste and wastewater.[116] This legal responsibility is delegated from the Government of Manitoba through the *City of Winnipeg*

Charter.[117] This includes power to impose restrictions related to a range of waste materials ranging from wastewater to hazardous waste such as toxic substances, explosives, flammable materials, and concentrated pesticides.[118] For example, there are restrictions prohibiting the dumping of waste on other people's properties.[119] The City of Winnipeg is also required to comply with applicable provincial legislation or regulations.[120]

Enforcement:

Provincial legislation that empowers municipal governments to pass various by-laws and policies, also grants the City of Winnipeg enforcement powers to pass by-laws that identify offences (actions that break the law), authorize inspectors and inspections, and establish legal penalties.[121] Winnipeg By-laws are enforced by enforcement officers and special constables appointed under *The City of Winnipeg Charter*. Screening officers are also able to be appointed to assist with the administration of enforcement mechanisms.[122] The specific enforcement mechanisms available to the City of Winnipeg depends on the situation and which by-laws are applicable. Winnipeg By-laws generally contain provisions that identify various offences for the violation of municipal legal requirements. The applicable penalties for committing a by-law violation are usually indicated in the applicable by-law[123] and/or in *The Municipal By-law Enforcement Act (MBEA) Enabling By-law*. Penalties under the MBEA By-law range from $50 to $1,000.[124] An early payment discount is available if payment is made within 14 days of receiving the penalty notice.[125]

The City of Winnipeg has been perceived by community groups as focusing more on compliance than enforcement, meaning enforcement officers will often not immediately fine a property owner or issue a ticket, but instead will attempt to work with them to correct the infraction.[126] For example, violators may be allowed to sign a compliance agreement, which sets out the activities they must take to be in compliance with city by-laws and if successfully completed, allows them to avoid paying a financial penalty.[127]

Enforcement operations in Winnipeg follow a complaint-based system, meaning there are no enforcement officers patrolling the City looking for by-law violations.[128] The City is authorized to undertake inspections or tests if a potential violation is suspected.[129] Community By-law Enforcement Services also plays a role in the enforcement of Winnipeg's by-laws, with a focus on property and neighbourhood standards and licence services.[130] This includes health inspections and responsibility for the illegal dumping surveillance program.

Provincial legislation also contains enforcement mechanisms that can be used by the Government of Manitoba if provisions of provincial laws or regulations are not followed. These provincial powers work in tandem with the City of Winnipeg by-laws and provide additional legal mechanisms that can be used to enforce legal requirements within the City of Winnipeg. For example, anyone who violates a relevant provision, by-law, order, or development agreement under *The City of Winnipeg Charter* faces a $1,000 fine and six months in prison or $5,000 (for a corporation).[131] Directors or officers can also be charged for violations committed by a corporation.[132] When a violation occurs for more than one day, the person is guilty of a separate offence for each day the violation continues.[133] The person may also be required to comply with an order setting out additional requirements.[134] Violators of *The Planning Act* face a $5,000 fine and six months in prison or a $20,000 fine (for a corporation).[135] A violator under this may also be required to comply with the provisions that were violated and pay costs to the municipality.[136] There is a limitation of two years within which a prosecution can take place.[137]

Access to Information:

There is a broad range of information available through the City of Winnipeg website.[138] This includes information about current by-laws, policies, and government decision-making processes. Winnipeg By-laws, Council Policies, information about Council and Committee meetings, and information about Boards, Commissions and Committees is available through the City's Decision Making Information System (DCIS).[139] The DCIS has an easy to use search function and also provides search tips. A range of additional data is available through the City of Winnipeg's Open Data Portal.[140] This includes information about By-law Investigations[141] and FIPPA Request Responses.[142]

Although there is a range of available information and the City of Winnipeg's main website is quite user friendly, we were unable to identify much information of direct value to the issues of toxic contamination and negative impacts resulting from industrial activities near residential areas. For example, it would be helpful to be able to easily access the results of any studies undertaken or required by the City of Winnipeg during land-use planning processes. However, more analysis is needed of the data available through the open data portal to get a complete understanding of what is available.

The Role of the Public:

The citizens of Winnipeg have a few opportunities to engage in municipal governance processes. For example, residents can report a number of problems, including possible by-law infractions, to the City of Winnipeg by calling, emailing or contacting 311 through the City's website.[143] However, most public engagement involves participation in meetings and public hearings held by City Council, Committees, and the Municipal Board, or public consultation processes through the City of Winnipeg's Engage Winnipeg website, which was established under the *Engage Winnipeg Policy*.[144] This policy guides engagement processes between the City of Winnipeg, the public, and stakeholders in order to "offer consistent and meaningful engagement opportunities which support better informed decision making."[145] The City of Winnipeg recognizes that "decisions are improved by engaging the public" and has created a Director of Customer Service and Communications position and an Office of Public Engagement.[146]

Under *The City of Winnipeg Charter* and indicated in applicable City by-laws, a public hearing must be held when:

- council gives first reading to a proposed by-law;[147]
- an order is appealed;[148]
- an amendment is proposed for a development plan;[149]
- the Minister refers a proposed Plan Winnipeg by-law to The Municipal Board;[150]
- the City refers a proposed zoning by-law to The Municipal Board;[151]
- an application for a variance is referred to a planning commission;[152]
- a decision on an application for a variance is appealed;[153]
- an approval of plan of subdivision is made subject to conditions;[154]
- the City refers a proposed secondary by-law to The Municipal Board;[155]
- a district proposal is referred to a committee of council;[156] and
- an exemption order is made by the Lieutenant Governor in Council under s 511.[157]

There are a range of requirements related to public hearings under *The City of Winnipeg Charter*, including criteria for determining the appropriate

hearing body,[158] public notice and service of documents,[159] and the recommendations and decisions of hearing bodies.[160] The City of Winnipeg website also contains information about public hearing processes.[161] Subject to the specific requirements of applicable by-laws, any person "who may be affected by the result of the hearing and who wishes to make submissions" can participate in a municipal hearing.[162]

Residents of Winnipeg may also engage in municipal governance processes through the use of petitions. For example, a district proposal can be initiated by a petition.[163] Although the form and content of a petition may vary depending on the purpose of the petition and any applicable by-laws, requirements for the general form and content of a petition are set out in The City of Winnipeg Charter.[164] Petitions must be one or more pages and each page must contain an identical statement of the purpose of the petition.[165] Each person who signs the petition must include their surname, given names or initials, business or corporate name if applicable, signature, date of signature, and their address or a legal description of their eligible property.[166] Petitions must be filed with the city clerk within 90 days of receiving the first signature.[167] If required, the petition must also have the requisite number of signatures from eligible individuals.[168]

Members of the public can also engage with the Court of Kings Bench to challenge the validity of City by-laws. Within three months after the day a by-law is passed, a citizen can apply to Court of Kings Bench for declaration that by-law is invalid on grounds that council acted in bad faith, or council or the city failed to comply with a requirement of this or any other Act in respect of the by-law.[169] By-laws cannot be declared invalid on the grounds that the by-law is unreasonable or not in the public interest; a person sitting on council, a committee, or sub-committee and voting on the by-law was not qualified to be a member of council; or the by-law was not put to a vote of the voters.[170]

In terms of determining municipal financial priorities, members of the public can engage in the City of Winnipeg's budget process.[171] On an annual basis, City Council adopts a budget that guides capital and operating expenditures for the given year, and provides a five-year capital forecast and a two year projection of its spending and revenues.[172] The budget consists of two main components: the operating budget and the capital budget. The capital budget indicates the amount of money to be invested in specific projects, while the operating budget sets out the money needed to keep City programs and services running on an on-going basis.[173] Members of the public are able to engage in the City's budget process through various

meetings held by the Council, Executive Policy Committee, various Standing Committees, and the Winnipeg Police Board.[174]

The Government of Canada: The Role of the Federal Government

The Government of Canada also has an important role in Canadian environmental governance processes and shares legal jurisdiction in this area with provincial and municipal governments. While there are a range of environmental laws and policies at the federal level, the research activities for this project were focused on regulatory requirements at the provincial and municipal levels in Manitoba. We were not planning to undertake research focused on federal legal requirements, however, we found that there was significant interest from our Advisory Committee and community participants in expanding community advocacy efforts to the federal level. In particular, there was interest in engaging in the parliamentary process for proposed reforms to the *Canadian Environmental Protection Act, 1999* (CEPA).[175] As a result, our project team undertook research on requirements at the federal level, with a focus on current and proposed legal mechanisms to better protect and enable vulnerable populations to engage in federal legal processes.

The Canadian Environmental Protection Act and Bill S-5

We primarily focused on CEPA, as this legislation plays a significant role at the federal level in the regulation of toxic substances and industrial activities that could negatively impact the environment and human health. The main purpose of CEPA is to contribute to sustainable development through pollution prevention and the protection of the environment and human health.[176] This includes undertaking regulatory activities related to:

- the assessment and management of risks from chemicals, polymers and living organisms;
- programs related to air and water pollution, hazardous waste, air pollutant and greenhouse gas emissions;
- ocean waste disposal; and
- environmental emergencies.[177]

The CEPA regulatory framework is incredibly complex and difficult to understand. A comprehensive assessment of CEPA's legal impact in Manitoba is beyond the scope of this report. However, there appears to be potential for CEPA to assist community members in our project area as the Act imposes a range of different restrictions on industry and can require the publication of data about toxic chemicals, including those found in our project area.[178] There are also legal mechanisms in CEPA that theoretically support public participate and allow members of the public to initiate legal proceedings.[179] However, these sections, in particular section 22, have never been successfully used by citizens since the Act came into force.

Instead of undertaking comprehensive analysis of CEPA's current requirements, we were encouraged by our Advisory Committee and project participants to focus on current efforts to significantly amend this legislation for the first time in 20 years through Bill S-5, the *Strengthening Environmental Protection for a Healthier Canada Act*.[180] This Bill proposes a broad range of amendments to CEPA, the *Food and Drugs Act*, and repeals the *Perfluorooctane Sulfonate Virtual Elimination Act*.[181]

Reforms to CEPA were first proposed in Fall 2021 in the former Bill C-28, the *Strengthening Environmental Protection for a Healthier Canada Act*[182] and later re-introduced as Bill S-5 in February 2022. We examined these proposed amendments to CEPA in Bill S-5 to determine which, if any, could help strengthen environmental protections for all Canadians, including Manitobans. However, in its current form, it appears that Bill S-5 will do little to improve meaningful public involvement in the regulation of toxic substances and better protect the health of Manitobans.[183]

There are some promising elements of the Bill, like the recognition of the term "vulnerable population" and corresponding regulatory mechanisms to better project such populations.[184] There are also commitments to study the negative environmental and health impacts vulnerable populations disproportionately experience.[185] The proposed recognition of the right to a healthy environment for the first time at the federal level is also an exciting possibility. As discussed above, recognition of environmental human rights can create new legal opportunities for citizens to access information and initiate legal proceedings. However, as currently drafted, the Bill will only require the development of a plan for recognizing the right in the future and will not result in any immediate substantive or procedural improvements.[186] This means Manitobans will be waiting years before the right to a healthy environment can be used to support their advocacy efforts.

The problem with section 22 of CEPA, i.e., that it is essentially not able to be used by citizens as it was intended, was not addressed in Bill S-5, despite many non-government organizations and experts calling for change. Section 22 as currently drafted has essentially prevented citizens from utilizing existing remedies under the Act, and unless reformed, will further reduce the utility of any future recognized environmental rights under CEPA.[187] Bill S-5 also fails to address the need for federal ambient air quality stands, which was a recommendations of the 2017 Standing Committee on Environment and Sustainable Development in its review of CEPA.[188]

Proposed changes to Schedule 1 of CEPA in Bill S-5, which will remove the label "toxic" from a significant number of substances regulated under the Act, among other things, may be problematic for community members as there is the possibility this change will create legal uncertainty and potentially risk the constitutional validity of CEPA.[189] At a minimum, the removal of the label "toxic" has the potential to make it more difficult for community members to get industry and government to take their concerns about potential contamination more seriously, as this change gives the impression these substances are no longer as dangerous as previously thought. Another section of Bill S-5 with the potential weaken CEPA's protections, is the proposed removal of the ability for the federal government develop geographically targeted regulations to help with pollution "hot spots". This currently existing CEPA provision could provide an opportunity for targeted restrictions in our project area.[190] The parliamentary process is still ongoing for Bill S-5 so there is still time for additional changes to be made to strengthen the protection of vulnerable populations. We will have to wait and see what the final version of the Bill contains before truly understanding its impact.

Bill C-225, the *National Strategy Respecting Environmental Racism and Environmental Justice Act*

Another promising legal development at the federal level with potential to help community members in our project area is private member's Bill C-226, the *National Strategy Respecting Environmental Racism and Environmental Justice Act*.[191] This Bill, if passed, has the potential to result in more support for the collection of data about environmental hazards, socio-economic conditions, and the impacts of environmental racism within our project area. This legislation will also allow policy makers to better address ongoing environmental racism in Canada and improve access to environmental justice for all Canadians.[192] There is an urgent need to address the decades

of environmental racism that have disproportionately burdened Indigenous, Black, and other racialized communities with exposure to toxic substances, a range of negative health impacts, and environmental destruction. While more substantive legal change will be required in the future to adequately address this issue, Bill C-226 is an important first step for the Government of Canada.

Bill C-226 will require the Minister of Environment and Climate Change to create a legal framework to examine how race, socio-economic status and living in areas near environmental hazards intersect to shape health outcomes in these communities. This framework must include measures to:

- Collect data and statistics relating to the location of environmental hazards and negative health outcomes in communities that have been affected by environmental racism;
- Assess the administration and enforcement of environmental laws in each province; and
- Address environmental racism in relation to possible policy and law reforms, involvement of community groups in policy-making, funding and compensation for affected communities, and access of affected communities to clean air and water.

Bill C-226 is an important legal development that centres race in environmental policy-making and decision-making and recognizes the disproportionate burdens Indigenous and other minority groups experience. The collection and public availability of more data documenting environmental hazards and health outcomes will allow everyone, including provincial and municipal governments to use it to better inform the decisions that impact marginalized communities. This Bill has the potential to improve access to environmental justice for Canadians, including Manitobans in our project area.

Other Opportunities:

There are other opportunities for public involvement in governance process at the federal level to ensure the environment and human health in our study area receives the highest level of available protections, now and in the future. For example, there are numerous opportunities for public engagement through the federal impact assessment process under the *Impact Assessment Act (IAA)*.[193] The majority of proposed developments in Manitoba are ultimately assessed under the provincial environmental

assessment process set out in *The Environment Act*.[194] However, when a proposed development triggers the federal impact assessment process under the IAA, the resulting process requires a much higher level of detail and engagement with Indigenous and public stakeholders than the provincial process. The impact assessment agency responsible for facilitating the process under the IAA also provides significantly more information about the federal process through the comprehensive online federal registry.[195] This registry is much easier to navigate and contains more detailed information than available through the Government of Manitoba's public registry. Thus, there has been considerable interest from the environmental community in Manitoba in encouraging more federal involvement in the assessment of proposed developments.[196] MbEN has been increasing our engagement in the federal impact assessment process and recognizes a strong need for further research about the federal impact assessment process and available regulatory mechanisms that would empower Manitobans to better engage in the assessment of proposed developments by the Government of Canada.

Conclusion

Our ongoing work in the community has made it clear that Manitobans need legal reforms at the municipal, federal and provincial levels that improve their access to environmental justice. This will require, among other things:

- a recognized and meaningful role for the public in legal and policy processes related to the regulation of toxic substances and contaminated, remediated and brownfield sites;
- public access to detailed information such as investigation reports, medical information about potential health impacts, follow-up and monitoring data (air, soil, water), and compliance and enforcement activities;
- effective government regulation of a broader range of industrial activities, including industrial metal shredders;
- stricter regulation of toxic, persistent and bio-accumulative substances (e.g. lead, arsenic, cadmium, nickel)
- legal standing for citizens so they can better protect their legal rights and hold industry and government accountable for actions that threaten their health and surrounding environment;

- stronger environmental enforcement mechanisms.

The recommendations provided at the end of this report reflect these regulatory needs and provide some examples of potential reforms to improve the current legal and policy framework protecting the health of Manitobans and the environment. However, there is a need for more legal and policy research, including more comparative research capturing different jurisdictions in Canada, in order to understand and identify more potential legal tools and opportunities for reform. As will be discussed in the next section, the concern of community members in our area cover a broad range of environmental and health concerns, which potentially involve an even wider range of regulatory measures than contemplated when initial research parameters were set. We look forward to continuing our work with community members in Manitoba to better understand the scope of public regulatory needs and identify further solutions for empowering Manitobans to access environmental justice.

Research Findings

WHEN DEVELOPING THIS project, we identified three key questions to guide our research and address the communities' needs. The background research, review of previous Winnipeg lead studies, and interview component of the project seeks to answer the first question and partly answer the second question. The second question and third questions are addressed by our legal research. The questions are:

1. *What are the documented and undocumented environmental and health impacts of living, working, and/or playing near industrial development and brownfield sites in Winnipeg's inner city?*

2. *Do people who live, work and/or play in Winnipeg's inner city, and particularly its poorer areas, have access to environmental justice? What means do residents and grassroots organizations must address environmental health concerns through city planning and government decision-making processes?*

3. *What is the City of Winnipeg's strategy to deal with conflicts between industrial and other land uses, and the remediation/redevelopment of brownfield sites? How can this be improved to increase the quality of life and access to environmental justice for all inner-city inhabitants, but especially its most marginalized people and communities?*

Below, we will describe the important topics that came out of our research. We have also included quotes that illustrate what our interviewees were

concerned about in their neighbourhoods. We have lightly edited some quotes for clarity and length but have made every effort to remain faithful to our interviewees' words and intentions.

Emerging Topics in Interviews

Places of Residency or Employment

Our first question to interviewees was to establish where they lived and worked. Four interviewees said that they lived and/or worked in *St. Boniface*. Interviewees also had more specific locations within the St. Boniface neighbourhood. Three interviewees said they lived in the Dufresne neighbourhood, rather than saying St. Boniface. Three interviewees said they lived in *Mission Industrial*. Outside of St. Boniface, 4 interviewees said they lived in *Point Douglas*. Two interviewees lived outside of the study area. Of these two outliers, one had volunteered to be interviewed very early in the process and lived within an earlier study area designation, but ultimately did not have much to say relating to our specific topic of contaminated industrial sites. The other out-of-area interviewee was a longtime community organizer who was familiar with industrial sites and community organizing in another part of Winnipeg. Their contributions were valuable because of similar subject matter and long-time experience.

Suspected Sources of Contamination

An important feature of these interviews was the discussion of any entities that might be causing the pollution impacts. Interviewees had many ideas about what might be affecting their neighbourhood, including industry and its associated externalities.

Rail and Trains

When discussing suspected sources of contamination, one of the most popular issues centred on *rail and trains*. There were concerns about noise, such as engines or horns. Other interviewees worried about contamination coming from trains into the air or soil. Interviewees from St. Boniface specifically named concerns about tanker cars travelling through areas with mixed residential and industrial activity. The 2012 and 2015 explosions occurred near tanker cars that were potentially filled with flammable contents. Both interviewees and news reports from the time describe firefighters trying

PHOTO 7 : Tanker Cars Travelling through a Residential Area



to keep tanker cars cool and wet as they tried to fight the explosion fires (Skerritt, 2012). Several interviewees called for renewed attention to moving the railyards out of the city.

> *"What I mentioned earlier is what I believe is continued contamination along the rail line, it is coming from the rail line, which I don't believe has had really adequate discussion by anyone, including the environmental organizations that have looked into this. I have expressed my concern that for some reason or other it doesn't seem to be picked up. I think the rail owners need to held accountable if they are continuing to contaminate the soil around them."*

> *"We also have two train lines going through the industrial area carrying long trains with tanker cars, lots of tanker cars, so that combined with high hazard is a concern."*

General Industrial

Interviewees identified *general industrial*, highlighting what they perceive to be their top source of environmental difficulties. Sometimes they discussed this as a high-level description for the industrial areas around them, while

PHOTO 8 : An Auto Recycling Yard



other interviewees explicitly stated that were not able to identify exactly what the industries were. Again, whether speaking in general terms or identifying uncertainty, interviewees frequently connected this theme to the emotional stress they were feeling as well as an ongoing problem around lack of information.

Metal and Auto Shredder

More specifically under general industrial, the *metal and auto shredder* was an industry that interviewees found concerning. Many talked about how the noises, odours, and metal dust seemed to be related to the activities of the metal shredders. The metal shredder facilities in the neighbourhood were a prime example of land-use conflict for many interviewees. Several called for the facility to be moved entirely out of the neighbourhood, or to at least have the operations more contained by a building or other safety measures. Three interviewees also talked about the hazards of scrap yards in their neighbourhoods.

> *"For me right now, personally because I work beside the shredder, is the shredder... That's the biggest concern that I have personally."*

"Yes, there are industrial businesses nearby and there's auto shredder recyclers, lead acid battery recyclers at these auto shredders."

Brownfields

Interviewees mentioned *brownfields* in reference to lands that were formerly industrial or may have hosted a gas station. Interviewees said that a key problem with brownfields is that they present unknowns about what may be contaminating them, or if the contamination is worsening on spreading. Brownfields also tend to be vacant, which interviewees mentioned as a concern.

"Yes, there are industrial areas and brownfield. What are my concerns? Well, there's always a question of is there ongoing contamination? Also, there is concern about high hazard."

Contaminated Sites

There were also mentions of *contaminated sites* as a general idea. Our study areas are perceived to host many contaminated sites intermixed with residential areas. One of the interviewees referred to a site outside of our study

PHOTO 9 : A Playing Field is Contaminated with Lead



area and a different type of industry. Despite this geographical difference, the accompanying story about community organizing and subsequent site cleanup was relatable to our HEHN project work.

Recycling Methods

A few interviewees talked about *recycling methods*. They talked about a conflict between the positive perception of recycling and the negative effects of what recycling actually entails. This conflict between perception and reality is yet another source of anxiety and frustration for these two interviewees. They feared that calling these industries "recycling" would increase their presence and permitting in the neighbourhood because of the positive perception of recycling activities.

> *"We recognize that there is a lot of money in recycling. I am absolutely for recycling, but I think it should be done properly for all materials, metals included... There are ways of capturing the stuff that they are dealing with and addressing it properly."*

> *"They fly under 'recycle', that nice green name, but they are the worst."*

PHOTO 10 : Crushed Cars



Battery Recycling

A few interviewees also mentioned battery recycling as a concern in terms of expanded permissions awarded to local recycling facilities.

> *"Yes, there are industrial businesses nearby and there's auto shredder recyclers, lead acid battery recyclers at these auto shredders."*

Suspected and Experienced Negative Effects

This category has two subcategories to distinguish between *suspected* and *experienced negative* effects of living near industrial sites. We make this distinction because some effects are obvious, such as noise and dust, while others are not easy to confirm because they might be invisible to the naked eye, such as exposure to toxins or long-term health effects. However, suspected and invisible negative effects were no less important to the interviewees. We found that interviewees were quite worried about the effects that they could not yet quantify. Fears for future physical health had real consequences for mental health and quality of living today.

Explosions and Fires

Out of all our interview data, the second most common interview topic to emerge was *explosions and fires*, with 34 separate mentions. First, in 2012 and 2015, St. Boniface faced two major explosions from the industrial areas. The 2012 explosion at the Speedway fuel facility led to large fireballs and a nighttime evacuation from the residential areas around the site (Winnipeg Free Press staff, 2012). The 2015 explosion happened behind a carpet warehouse when a fuel tank exploded and injured one person (CBC News, 2015a). A metal shredder fire also occurred in 2015 (CBC News, 2015b). Despite having happened in 2012 and 2015, interviewees still had vivid memories of the incidents. Additionally, while mostly St. Boniface residents discussed these events, one Point Douglas resident also mentioned the event because they were

PHOTO 11 A Shredder Fire



living in the smoke path. Point Douglas residents described experiencing an industrial fire in their neighbourhood in 2021 as well, which led to extreme heat and an evacuation (Pindera & Piché, 2021).

Interviewees from both neighbourhoods also talked about a different kind of fire hazard resulting from the scrap metal trade. They reported smoke and small fires in the woods and riverbanks around their homes as people try to burn plastic coatings off wires. Interviewees said they needed to call the fire department to intervene. The cause of this hazard is multifaceted: poverty, homelessness, and, until recently, permissive rules around reselling scrap metal (Rollaston, 2022) all seem to play a part.

Finally, interviewees who live or work near metal recycling facilities that shred cars and other large appliances reported hearing explosions on a regular basis. Interviewees believed that these explosions happen when a car's gas tank is broken in the shredder. The explosions were perceived to be annoying at best, but often served as a reminder of the more traumatic explosion events described above. Many interviewees felt that they could be the victim of another explosion or fire someday, and perhaps not be as lucky to escape a real disaster as they were in the past.

> *"Our house was rocked by explosions that took place a number of years ago - felt like our house was struck by a large vehicle. Actually, on Plinguet when there was other major fire with tankers and drums blowing up and stuff, that's at least a kilometre and a half away from where I am located, So the last seven years have seen us become significantly more aware of the issues that are going on in that area."*

> *"When the fire broke out at one of the recyclers in the middle of the night, I said you cannot put these fires out because it is a combination of oil and gasoline and antifreeze and whatever. These fires cannot be put out. There are many studies that show that they just have to burn out, so when in particular the one fire happened in the night and you have to remember it is less than a quarter mile from us, they could spread so fast to us and our houses are old, our houses are 1923, like I am sure would easily go up in flames quite quickly."*

> *"What I have experienced firsthand was a fire. We called the fire department, and my house is across from the park. Right behind that park is a green space, and in that green space, we saw what we thought was fog. It was early in the morning, and it turns out that it was smoke. We ended up going out there to say, "Oh my gosh, what is going on?" and it turns out it was someone who was trying to return copper wire, but they had to melt the plastic off the wire*

before they returned the wire, otherwise it was not accepted. So, they started a fire and we told them the fire department was coming... it did not spread or anything, but it is just kind of a concern in the area."

Broken Infrastructure and Neglect

Broken infrastructure and neglect came up frequently as interviewees from all study areas described noticing their neighbourhoods falling into disrepair. From broken asphalt in the street, unmown green spaces, garbage accumulation, or 311 calls going ignored, community members described a sense of futility as their immediate environment deteriorates. Several interviewees also raised a suspicion that the neglect is related to their lower-income status.

> *"Our counsellors, the city has stopped cutting the grass in the area... they are turning us into [a] dumpy derelict area. The... city used to come out and cut the grass and stuff on the properties, now we are doing that because we refused to let this go, we go cut down the trees that need to be cut, we cut the grass, we clean the area to the best... we shouldn't have to be doing [this], no rich area is being subject to this."*

> *"This is an industrial area that I live in and it is forgotten. So, I am a bit rationalizing the state, but we don't get much—I don't see much service at least, like whether it is when I call when something happens and I have seen some activity and I will call, I will report, but I don't really see [a] response. There is an example, I called many times but just as an example, there [is] cement, it is crumbled entirely, the trees are all dead too... There is very little—it is very stagnant, like there is little maintenance from the city in the area."*

Noise and Daily Noise Duration

Noise complaints accounted for 32 mentions from interviewees, making it a very popular topic. Most interviewees from St. Boniface talked about intense noise from nearby car-shredding recyclers. Some reported that the noise is accompanied by vibrations strong enough to shake their homes. A respondent from Point Douglas also stated that vibrations from cleaning up the site of the 2021 fire were strong enough to shake and crack their house. Train horns also accounted for the noise that interviewees experience. Interviewees spoke of being unable to open their windows or take walks due to the noise. One respondent, a shift worker, said that their sleep was put at risk because of the daily noise. Another respondent reported that they saw neighbourhood children express fear and cry due to small-scale explosions

from the shredder facilities. Regardless of the source, interviewees reported feeling stressed by the noise volume.

Daily noise duration came up along with these discussions as interviewees described the persistence, volume, and frequency of the noises they endure. The daily noise duration is an important factor that contributes to the negative health effects of unwanted noise. Many interviewees said that the noises began early in the morning on weekdays and lasted through business hours, only finding relief on weekends. Some interviewees also said that train noises happened at all hours, even into the night. Interviewees said that the noise duration was another example of diminished livability and emotional stress.

> *"I've been on my back deck here and with a noise meter — not an iPhone — and registered 70 decibels."*

> *"The noise, I will add the impact of that... I live down the block you literally can hear it, it shakes our house when certain things are happening, and a lot of it happens during the day. I work seasonally, so sometimes I am home at different hours, so during the day you can really hear it. So I think a lot of people don't realize that who go to work during the day how much of an impact, like, it literally is shaking your house when you are not there."*

> *"Thankfully I am further enough away from it, but at night you can hear it, you can hear the actual engines revving up to start moving stuff and it happens at 10 p.m., sometimes really late at night and even during the day."*

Odours and Taste

A significant problem that interviewees discussed was strange *odours* in their neighbourhoods. There were very frequent mentions of unpleasant odours, and many interviewees said that the odours were distinctly chemical, metallic, fuel-based, or even unidentifiable. Interviewees noted a range of frequencies, from occasionally to nearly daily. They also stated that they would cough or choke when these odours were apparent. As with the noise complaints, interviewees said that they often kept their windows shut or avoided going for walks due to the odours. Additionally, there were 3 mentions of *taste* associated with experiences of odours. Repeatedly, interviewees found this to be alarming for their health. As described above, these odours and accompanying flavours were mysterious and distressing to interviewees, especially because they didn't fully understand what these substances might be.

"We smell it, taste it and it is not good. Foul and toxic with a chemical-metallic odour often accompanied by some kind of fuel base."

"I have gone outside on days where the chemical smell was so bad, it burned your nose, eyes and throat to the point where you had to go back in the house."

"I guess what worries me is just actually the air, I guess I will call it cleanliness of air, but like just I don't know what—like I smell something, I don't know what it is, but… I am inhaling that and I don't know if it is good."

Low Income, Vulnerable, Homelessness

Interviewees made recurrent mentions of issues relating to *low income, vulnerable, or homelessness* status. These comments took two different angles. Some interviewees suspected that the government ignored their pleas for environmental justice because they lived in a low-income neighbourhood. They recounted instances where phone calls to 311 and 911 were ignored, when requests for help cleaning up garbage went unanswered, and a general sense of neglect was reflected in damaged or unkempt infrastructure. Interviewees suggested that this would not be happening in wealthier areas of the city.

The second angle of this topic of social class and vulnerability referred to increasing numbers of people facing housing insecurity settling in neighbourhoods near scrap metal facilities. As the crisis of poverty and housing insecurity persists in Winnipeg, people in precarious situations may try to find income by selling scrap metal to recycling facilities. As a result, would-be sellers may congregate at the recycling facility, including in the nearby residential neighbourhoods. Interviewees reported that they were experiencing more theft from their homes for metal items. They also said that more shopping carts, unsold items, and other garbage tended to accumulate in the neighbourhood. A few interviewees also feared that there was an increase in a drug dealing economy near the recycling facilities.

"I have found social agencies including environmental agencies horrendously middle class and not understanding how to communicate with people with very low levels of education."

"Still they tell us it is safe and they count on us being, I guess, the poor neighbourhood not having the education… Our area is pretty diverse and we have Indigenous, lots of Indigenous, we have refugees, we have immigrants, we have all kinds living in the area and they… can't do much and that's why… we don't get any help at all. They just count on us being poor and stupid."

"We also have a lot of—I guess I would say homeless people type activities where they are starting to congregate in the area collecting metal. They start fires to melt plastic off metals, so the fire department has been called a couple of times, and they did that in nearby wooded areas. There is debris left from these people, like shopping carts and just kind of more of that activity around."

Livability and Quality of Life

Another common theme was general *livability and quality of life*. While many other topics relate to this higher-level concept, interviewees emphasized that the difficulties they were facing added up to something greater than the sum of its parts. Overall living was impacted in pervasive ways, such as garbage making it impossible to walk their dogs in a certain area, the loss of feeling refreshed from open windows, the dangers of eating homegrown vegetables, and the stresses of not knowing future health impacts. These issues compound on each other and create a burden of concern about daily life. Again, this effect has significant negative consequences for emotional well-being.

"I am so busy working on the lack of recreation, the horrible problem getting our garbage picked up regularly and stopping people from throwing garbage anywhere and drug dealers."

"I know that I have seen the impacts that it does on my family, my sister never gets a day of peace and quiet and I think it is enough to cause major agitation for people."

"One thing that they don't mention is the impact on the way people can live around here, so the way that businesses are able to maintain and not only that, just even having a good community because, again, you have got enough to worry about, our health, if our sickness is getting worse because of the area we live in."

Garbage and Used Needles

Unfortunately, multiple interviewees mentioned that they are frequently exposed to *garbage and used needles* in their neighbourhoods. While most interviewees associated the garbage to the presence of transient or unhoused people in their neighbourhood, some interviewees from St. Boniface specifically connected the garbage accumulation to the metal recyclers. They felt that when the metal recyclers accept scrap metal for money, it stimulates a chain of economic activities and informal human settlements. The increased presence of used needles and garbage seem to reflect these types of activities.

PHOTO 12 : Shopping Cart with Garbage Near an Industrial Area



Interviewees from Point Douglas emphasized that the garbage in their neighbourhoods likely comes from a sense of neglect. They felt that there is an unspoken assumption from the general public that it's okay to dump garbage in Point Douglas. Point Douglas interviewees reported seeing cars drive into the neighbourhood and dump garbage. They also reported that calls to 311 about garbage were not taken seriously. Interviewees found the presence of needles and garbage to be very distressing and limiting their ability to use green spaces.

> *"There is debris left... like shopping carts and just kind of more of that activity around."*

> *"I live pretty close to the riverbank, like I am literally probably not even a minute walk from the riverbank. Unfortunately, with that, and I do have a daycare next door, right next door to me, and I am always worried about finding needles... just people can literally drive down there at night. There is literally nobody there and people can dump stuff along the side there ... people dump stuff right along the railroad track."*

PHOTO 13 : A Contrast Of Green Space And Intensive Industrial Activity



Green Spaces

The health and accessibility of *green spaces* was a common concern. Some of these comments addressed a general lack of green spaces in their inner-city neighbourhood. Other comments acknowledged that while there was green space, it was full of garbage, the soil was suspected to be contaminated, or the ambient air around it made it hard to enjoy. Some interviewees mentioned that the trees in their local green spaces were struggling to survive, acknowledging that Winnipeg's tree canopy is diminishing.

> *"We have two parks, ... many daycares take their kids over there and I am sure those kids aren't going to be healthy. And then in the bigger park we can breathe, we can smell the chemicals coming off of the [industrial area] all day long in that park whether you are swimming or playing Frisbee or whatever you are doing in the park and the noise, we don't ever have a day without noise here or smell."*

> *"The trees are all dead too. Yes, there is historically a lot of green space but everything is dead and the trees on my lot have become dead, but they are still standing and things still grow from it. The tree, one of the arborists came and*

said this tree is dead... and then we have tried to grow some [trees]—the past person that used to live here that we got the house from, he grew some—we saw lots of evidence of growing new trees, but they don't really survive unless you put it in a separate pot."

Safety Concerns

Although this is a more general category, there were periodic mentions of *safety concerns* in the interviews. A wide range of safety concerns were discussed, and interviewees referred to the impact of dealing with a combination of hazards. The effect of compounded safety hazards, such as noise, bad odours, garbage, explosions and more have all combined to create a heavy mental load for residents and local workers alike. Again, the emotional distress of the safety concerns is amplified by a fear of the unknown health dangers and worsened livability.

"It is frightening to know how much we are at risk and how little concern there is for the environment and the citizens that live in proximity or the workers that make their livings at these sites. It is also very disconcerting to know that government (municipal, provincial and federal) does not have our backs where these issues are concerned."

Exposure to Toxins and Carcinogens

"We are scared to eat our vegetables because our vegetables and our gardens are covered in this dust, metal dust."

A consistent theme in the interviews was concerns about *exposure to toxins and carcinogens*. Numerous interviewees talked about their fears about what they were being exposed to. These concerns are intertwined with discussions about bad odours in the area, which interviewees believe to be a sign that unhealthy substances are polluting the local air. There is also a relationship to the lack of information and feeling ignored by the government, two themes that interviewees also describe. Many interviewees said that while they might not have any significant symptoms at the present time, they worried for their future health. This uncertainty also adds to the emotional distress that interviewees frequently discussed.

"We do not know in many cases, how much industrial waste there was there, what contamination there is."

"I am just concerned about basically explosions and basically any carcinogens that are around the area."

"We are scared to eat our vegetables because our vegetables and our gardens are covered in this dust, metal dust."

Worsening Over Time

When asked about *worsening over time*, many interviewees affirmed that the pollution and disruption from impacted sites had become worse over the past few years. One interviewee from St. Boniface pointed to 2015 as a time when the metal shredder noise became noticeably worse. Interviewees from Point Douglas feel that the neglect of the area and ongoing death of local trees has gotten worse in recent years. Several interviewees felt there was an uptick in poverty and homelessness, both in the City at large as well as their specific neighbourhoods. And while a few interviewees said that they thought some things had improved, they said that the improvements were not nearly enough to solve the problems that they still dealt with.

"Well, 2015 was the beginning of significant change. I was working prior to that, leaving the house and working in different locations and the new machine (metal shredder) was not in existence... Since 2015, I have become aware of the amount of industry that is in the industrial park and the types of industry that are located there."

"Yes, it has gotten worse. You are allowing more and more toxic businesses into the area. More smells, more chemical smells, more smoke."

Air Pollution

Air pollution as a general concept was discussed very frequently. Interviewees talked about odours and flavours, seeing a haze in the air, dust, and particulate matter. Significantly, they also talked about a sense of unknowing about the air's cleanliness and safety. This was a persistent concern, making it the top category of pollution that people thought about on a frequent basis.

"The haze gets so thick in the air over here and it is just over St. Boniface. You think it is a hazy day but when you go a mile away ... when you go about five miles away or more, you see that only St. Boniface is in this haze with this chemical smell impact."

"I guess what worries me is just actually the air, I guess I will call it cleanliness of air, but I don't know what—like I smell something, I don't know what it is, but... I am inhaling that and I don't know if it is good."

General Health

Interviewees described their top concerns regarding *general health*. Some interviewees volunteered information about poor health effects that they suspected were caused by the pollution, ranging from allergy-like symptoms to cancer. Several times the negative health effects of noise were mentioned, including ongoing emotional irritation and disrupted sleep. Finally, the fear of the unknown was a significant issue for the interviewees' health concerns. The risk of exposure without meaningful understanding or solutions is a significant source of stress for residents in our study areas.

> *"I feel like that may be a longer-term health impact that may not be noticeable yet... I would say that the toxic substances and the heavy metals that are likely being introduced into our bodies would be the primary concern, because of their potential long term health effects."*

> *".. . sore throats, especially when the pollutants are—it's like being in a fog... That's the best way I can describe it, and you breathe it and you get a sore throat. We get headaches."*

> *"So, I wash my hands when I come in, like, it is the first thing I do, but I still have concerns about what I might be picking up and then the odours from all three of those businesses are pretty bad."*

> *"I never had allergies my entire life... about four years into living in this house, I developed "seasonal allergies" where some of the symptoms this [local environmental] organization told me could be based on [local industrial pollution].. . It could just be fluke that I developed seasonal allergies, but it does tend to kind of go with the information that they said, like when the snow melts there is like this big, almost like, I feel like I have to call in sick to work because I feel dizzy and really bad and that sense.. . it is weird living in the neighbourhood my whole life, and then also the year that I developed the allergies was the year that that specific business was started operating in our neighbourhood."*

Public Health

Along with general health, interviewees mentioned *public health*. This was discussed in reference to a variety of issues, such as garbage, used needles, unhealthy green spaces, or the different types of polluting substances suspected to be in the air or soil. Interviewees sometimes linked these concerns to government policy that may not be enforced or is inadequate for protecting health. Overall, interviewees emphasized that the entire community seems

to be endangered by the lack of adequate attention for public health and safety in places where residents are close to heavy industrial.

> *"There is a cost to all governments and the citizens at all levels for not engaging in researching and creating legislation and the means to support the legislation that effectively addresses environmental and citizen health concerns. That lies in the ever-increasing healthcare system requirements caused by an unhealthy population that is a direct result from the current and longstanding practices of various industries in and around our cities."*

> *"I think that... our systems of dealing with the environment, pollution, climate change; all of these things need to be re-evaluated. We are always coming up against [economic] progress, against capitalism, against business and I mean, at the end of the day if you are not able to thrive in an area and be a healthy person, happy person, then what are we really doing... like what good is it to have a business if you are making the people around you sick. What good is it to be recycling or thinking about inducive materials if you are ... doing it in a way that... is detrimental to the health of residents of the area."*

> *"It affects our breathing and when I went door to door in the area I had several complaints from people who talk about their breathing and health issues such as cancers, heart disease, why do we all have that."*

Children's Health

Children's health was mentioned often, even by interviewees without children of their own. As much as adult interviewees worried about their own health, they also said that they felt concerned for children growing up in their neighbourhoods around the pollution and noise. Interviewees cited the schools, daycares, and playgrounds in their areas as vulnerable sites for children to be exposed to the pollutants. One interviewee shared anecdotally that a conversation with a local school principal revealed that many the students in the school struggled with illness and attentional problems. Interviewees also described seeing children coughing from air pollution or being frightened by the explosions .

> *"I have raised children and now grandchildren in this area. Should I be concerned? I am a little bit, but I still don't know what it is that I am addressing specifically here."*

> *"I have watched many kids running around on the street yelling my eyes are burning, my throat is burning, my nose is burning... there are different small*

businesses set up for kids really close to the [industrial sites] and I don't know if those parents who bring their kids there realize what their kids are exposed to every day when they bring them here to this daycare or to this business that takes care of the kids... we have an elementary school in the area where I have spoken to the principal and 80% of the kids there have respiratory illness and ADHD. They all live in the area... I have seen kids actually start crying when the big explosions go off at the recyclers."

Mental Health and Emotional Stress

Mental health was directly mentioned as a higher-level theme supported by many potential causes. Struggles with mental health were framed as an impact of living with ongoing health problems, unknown future health risks, and noise. Additionally, interviewees described the toll of unresolved frustration, the trauma of the Speedway explosion, the loss of safe vegetable gardening, and the lack of information about what is happening in the industrial areas.

Concerns about mental health were complemented by mentions of emotional stress. Emotional stress may not be the same as a more pervasive mental health concern, but for many of the interviewees, there is overlap in both the causes and effects. The lead researcher defines the difference as *emotional stress* presenting as a subclinical annoyance while *mental health* refers to a more chronic state of mind with pervasive cumulative effects. Indeed, one interviewee commented that they experienced diagnosable depression when their family moved into the study area.

"I have been fighting with this now since 2015, and really hard sometimes, and out of frustration sometimes sort of backing out because what can you do, it gets really tiring and we have been a smaller group of people that have been struggling. It's really frustrating to see government both at municipal and provincial levels not acknowledging some real problems here that are highly impactful at many levels and the breakdown of basic health."

"I don't have any children, but I worry every day when I go outside and I smell that air, it is a distinct chemical smell. I worry every day, how fast the cancer is going to be coming back. No peace and quiet and I can tell you it is so irritating, you have no idea what it is like to live here with clang bang, clang bang and your house shakes... It got to the point where I was turning in so much damning evidence of pictures, the explosions, the fire department reports, they never counted on us going so far, but we did and it took a lot out of us. We were all mentally and physically sick at the end of it and I am telling you, day after

day, day in and day out for years and what was going on and turning in that evidence it got to the point where it was getting so overwhelming."

"I was diagnosed with depression ever since I was younger. I have dealt with mental health for a long time and it does not really run in my family... but it had only gotten worse when we moved. We lived in Transcona. We moved into the North End when I was about 10 or 11 and so that was more when I was really developing and we lived again in the North End. That's when my parents started to see the differences when we moved into the lower income area compared to living in beautiful Transcona."

Garden Vegetables

Many interviewees expressed worry and grief that *garden vegetables* are likely not safe to eat because of the soil around their homes, even with raised beds and new soil. There were several mentions of this phenomenon, which was first publicized when soil test results showed that the lead levels were very high in these communities. At the time, residents were told to simply "wash their veggies", but many interviewees said that they did not trust this advice.

"I have elevated levels in my yard, but the government has not done anything except to issue a letter suggesting we wash our hands and veggies if we consume or work in the soil, that's three years now—three to four years."

"I would say the health effects... of things being released into the air. It has gotten to the point that I do not even grow tomatoes or little vegetables in my ground or in pots in my backyard for fear of contamination. I don't know if I am over thinking that or not, I am just trying to protect myself in any way that I can."

Particulate Matter

Along with general air pollution, interviewees identified *particulate matter*. Interviewees referred to particulate matter when talking about the odours and tastes they were experiencing from the air. They also talked about metal shavings accumulating on their cars and outdoor property. One interviewee discussed particulate matter as something that might be contaminating their garden and thus taking extra care to wash their hands after doing yard work.

"If I can taste the stuff, I am sure it is not good and the particular matter must be definitely big."

"I am concerned about the particulates, but it is not something that really enters into my consciousness too much unless I am actually gardening, because I do think about it then, because I am in the soil."

Dust

Dust was mentioned by interviewees as a serious effect of living near contaminated sites. Those living in Point Douglas said that they experienced dust coming from the rubble cleanup at the site of a burned building. Those living in St. Boniface described dust coming from the industrial sites in their neighbourhood. This dust was identified as fine metal shavings, which interviewees confirmed by passing a magnet over dusty surfaces. Interviewees expressed alarm at the possible consequences of breathing in the metal dust.

"We all seem to be finding metal dust on our cars, in our lawn furniture and toys in our yards. We have a nice coating of it, and I have actually had businesses sent me pictures of when they start their car up, that metal dust (and we know it is metal dust because we took a magnet to it) and it is all over their windows."

"They are now cleaning up and demolishing and dust everywhere, so right now I guess what worries me is the fact that... I don't know how long it is going to take or what the schedule is, but it is dusty. Like there is the bulldozer and they are actually doing all this stuff, so it is very heavy duty, and then it has been going on for actually almost a year, 11 months now."

Wind Direction

When describing their experiences of air pollution, there were also mentions of *wind direction*. Interviewees said that their risk of exposure to pollutants was often at the mercy of the wind's direction. A change in wind direction could mean the difference between being able to go outside comfortably or having respiratory symptoms from odours and particulate matter.

"... Depending on the direction of the wind, not only are we hearing the noise but the other elements come in to play. We smell it, taste it and it is not good."

"We occasionally, where I am now, get odours depending on the wind and so that means we don't really know what we are smelling... So, I can't say that I see a lot of dust where I'm at, but it's when

PHOTO 14 Industrial Haze



the wind is blowing a certain way and you don't want to be outside... Well, I guess I would say some heavy truck traffic and noise in that way. We do hear once in a while, again, it does depend upon the way the wind is blowing... Yes, usually it's the odours that alert you to... there's something in the air, and it is very dependent on the wind direction."

Auto Shredder Residue (Airborne Fluff)

There were a few mentions of *airborne fluff* as part of discussions about air pollution. This is likely the auto shredder residue that is described earlier. Two interviewees talked about seeing something in the air that resembles dandelion seed fluff. One mentioned that community members followed the floating particles through the area to identify a source and linked it to a shredding facility. Their personal research suggested to them that the fluff might be remnants of car upholstery mixed with auto fluids. Interviewees were especially concerned that the fluff was piling up on their yards and that neighbourhood children were playing with it.

"I have been witness to all kinds of incidents over time as well. Explosions, strange metallic dust falling onto my deck and our vehicles, strange material fluff (man-made) showing up in our yards on different occasions."

"We have days where there's.. . people saying it is dandelion fluff and how come it is only over here. ... It's called auto shredder residue and it floats in the air, we have kids running around grabbing it and touching it. And auto shredder residue is actually the remnants of the inside of the cars that are being shredded and they are full of oil, coolant, antifreeze, anything that a car or air conditioner or a fridge and stove have in it and that's what's in that auto shredder residue and it sits in piles in our area."

Displacement

One interviewee mentioned *displacement*, meaning that they considered leaving the area due to health concerns.

"Not gonna lie, my husband and I looked at moving out of the area because we thought that if it was affecting our health, this is not a great place to live our lives, if where we live is killing us."

Testing

Over the years, several tests have been conducted on the soil and air in our study areas, which are described above. Residents often followed up with the final reports and hoped that they would lead to action, such as site cleanup and moving the industries away from the area. Despite not being scientific professionals, many interviewees had also conducted their own independent testing in partnership with professionals.

General Testing

Interviewees commonly described their experiences with *general testing*. The study areas have been subject to different environmental tests over the years, including testing the soil, air, and for noise. Some of the testing has been carried out by the government and the University of Manitoba, while community members in St. Boniface pursued independent environmental testing. Interviewees called for more testing, especially independent testing, as they felt that previous test results were not taken seriously or hidden completely. Interviewees wanted test results to spur meaningful change. Some interviewees also suspected that testing was done incorrectly.

> *"We need improved testing and more consistent ongoing testing."*

> *"There should be environmental testing and impacts done in these neighbourhoods and if tests are coming up where there is concerning results, that there should be justice for the citizens."*

Awareness of Testing

Although it is likely that many different chemicals are contributing to the pollution load in our study areas, *lead and heavy metals* were specifically mentioned multiple times. A number of studies and accompanying reports have been released over the years about our study areas. These studies have shown that high levels of lead persist in the soil, piped drinking water, fresh snow, and air. Interviewees showed a strong awareness of these studies and their accompanying news reports. Many interviewees pointed to the recent studies conducted by the University of Manitoba on snow as evidence that the lead in the environment has a recent source, rather than strictly persisting after leaded gasoline was banned (F. Solademi & Thompson, 2020; F. S. Solademi, 2020)

> *"We know there is lead as the University of Manitoba has done testing and it is published in the Journal of Science there."*

"I know there are things on the news that talked about, the ground level in that area being contaminated with lead from paint factories and things like that."

Soil Quality, Testing, and Safety

Soil quality, testing, and safety came up persistently in the interviews. The neighbourhoods in our study area have been tested multiple times for lead over the past several years and frequently showed high levels of lead and other substances. Several interviewees addressed their fears and uncertainties about the levels in their soil. A previous provincial government was thought to have suppressed a major report on high lead in soil test results, which further disrupted a sense of trust and transparency. Interviewees also spoke of feeling unable to fully enjoy gardening, including growing and eating their garden vegetables, due to suspected or known levels of chemicals in the soil.

"I was one of those individuals where they did the testing on the soil as well... Interestingly, my garden soil has been replenished and refurbished multiple times through composting (our own) and new soil purchased through local soil companies over the past 40 years we have resided here so I must ask myself again - what is falling from the sky now that increases the lead levels of my soil today! My levels are certainly not elevated like they are in other areas that are not too far from here and I know there are multiple sites like us in Winnipeg."

"With the most recent soil contamination study finding extremely high lead levels in the... archery park, how are food industries... affected? There's also a cold storage business that deals with foods right next to a very high hazard industry. How might the products be affected?"

Independent Testing

Several interviewees discussed the matter of environmental testing and called for *independent testing* as a possible solution. Along with distrusting the ways that their concerns are ignored, interviewees suspected that government-sponsored testing is inadequate or untrustworthy. They commented that independent testing would be a source of certainty and accountability. Some interviewees who had done activism work also talked about pursuing outside experts and independent testing, often at great cost.

"I assisted a University of Manitoba student that did an air quality, snow contaminant and noise level study in our community and the adjoining [industrial site] two years ago as his thesis project, just pre-COVID. [I] assisted him more over the summertime with all kinds of wind samples, noise samples, in both

the residential Dufresne area and the Industrial park — down wind, upwind, etc. We also did snow sampling (50 locations) in the wintertime (latter part of March 2019) both in the residential area where I reside and in the industrial park area to find out if there was anything being deposited in the snow over the winter months — a clear indicator of current activities contributing to air quality."

"So, we went to an air quality specialist in Calgary and he had actually told me what to buy, so I bought the machine and then we did the testing, we went and had a meeting with the government. We even got lawyers involved with what little money we could get together. We managed to get some lawyers together and still nothing became of it."

"So, we resorted to our own private testing and so that did get us some results, but the only time we heard from them was when they wanted our report and it was not my report to give. It belongs to a graduate student, and then they haven't talked to us since."

Perceived Untrustworthy Testing Methods from the Government

There were a few pointed discussions of perceived untrustworthy testing methods from the government. Interviewees described seeing testing activity around the sites of concern but said that they later learned through independent consultants that the testing was done incorrectly in various ways. Interviewees thought that the information they got from episodes of government testing seemed contradictory or subjective. This topic is another aspect of the overall complaint about a lack of information about the true nature of contaminated sites.

"When the air quality was raised and we provided proof there were issues, they (Provincial Government) finally installed an air monitor machine... after multiple promises and missed timelines. Interestingly enough, the monitor was not operational for a number of months as it was not powered! On top of that, a number if not most of the monitors in the Province and city were often down or not functioning those no air quality monitoring or results were available for months at a time."

"First of all, number one, the doctor in Calgary, the air quality specialist said this is the wrong place to set up the machine. Number two, they used the wrong filters. Number three, he peer reviewed what our government had done, what our officials had done to claim that everything is fine for us. He ripped

through it like you would not believe when he said it was not worth the paper what is written on."

Reports and Studies Fail to Get Results

Five mentions of reports and *studies failing to get results* show that some interviewees have been invested in trying to get actionable information about their neighbourhood. They are aware that research has occurred at sites around their community, but often remark that the studies have not resulted in meaningful change.

"Being an environmentalist for 50 years, of course I was aware of the potential problems. But again lack of information made it very difficult, but I think I did have the organization, the resident's committee have had some impact on getting media coverage once that provincial study — we were made aware of the provincial study."

Samples Exceeded Safe Levels

Interviewees who were familiar with the studies on their communities mentioned that *samples exceeded safe levels*. They emphasized that despite these test results coming back with elevated levels, even on soil that has been replaced over years of residence, nothing substantial has been done to remedy the situation.

"It is published and the lab analysis clearly shows toxic levels of certain elements that clearly exceed acceptable levels being deposited in the snow over a three month period [in 2019]. This is in snow that fell from January to March 2019 — not from 1966! "

"There should be environmental testing and impacts done in these neighbourhoods and if tests are coming up where there is concerning results, that there should be justice for the citizens."

Snow and Snow Sampling

There were 3 mentions of *snow and snow sampling*. These interviewees were referencing a 2020 graduate research study conducted in the St. Boniface area. The researcher sampled fresh snow samples and found elevated levels of lead, cadmium, and other substances. Interviewees found this testing strategy to be very important because the results contradict the explanation that high lead contamination in the area is a remnant from the era of leaded gasoline.

"So, the university did a snow sampling of fresh snow which proved beyond reasonable doubt that the lead and all these chemicals were in fact being deposited on us on a daily basis because fresh snow cannot lie."

Policy and Laws

An important part of our interview process was to discuss the interviewees' personal experiences of the legal and political environment surrounding their environmental struggles. Because this project is focused on understanding and achieving environmental justice, we prioritized the perspectives of interviewees as they recounted trying to get help for their problems from individuals and institutions in power.

Land Use and Land Management

Themes of *land use* were reiterated in the interviews. This category is a higher-level expression of more specific land-related themes that are discussed elsewhere but concerns and critiques of land use were common in the interviews. Interviewees wondered about why residential and industrial land-use conflicts were allowed to exist and increase. Some individuals also raised concerns about what these land-use conflicts and pollution would do for land values, therefore making it harder for these neighbourhoods to be improved. Interviewees also expressed concerns about the financial impacts of land-use planning policies that might be ignored when the City allows for sprawling developments into formerly industrial lands.

Land management was also mentioned by a few interviewees. This was brought up in terms of the ways land is developed, redeveloped, or stewarded environmentally over time. Some interviewees felt that a legacy of land use conflicts, unenforced zoning, and neglect of contaminated sites in favour of greenfield development had all led to poor land management practices in their neighbourhoods. One interviewee expressed concern for the effect on property value and incentive to redevelop the land. Another interviewee described firsthand experiences with trying to rebuild a home in the study area and being unable to do so due to confusing zoning policies.

"I do think in terms of contamination, one of the things I suspect is that some development of housing doesn't take place because developers and others are nervous about the problem of potentially building on contaminated site."

"I just wish that [company] and the trains and [company] could just be removed from our neighbourhood, because it is a lovely neighbourhood but those three things are having a huge impact on our end."

"What is going to happen to this land now that that fire happened? There are residences, there are few companies that are still operating. Essentially, that is just one company. There are a few other companies and car shops and window manufacturers and others... I think it is a dying land".

Government Policymaking

There were a number of mentions of *government policymaking* as a few interviewees explained their frustrations and identified policy as a problem as well as a solution. All levels of government were identified as the source of inadequate policy and protections for communities. Additionally, interviewees identified all levels of government as a potential source of solutions if policy could acknowledge the needs of communities impacted by contaminated sites. This topic coincides with discussions of accountability and enforcement because interviewees wanted industries to follow policy and for repercussions to be meted out if policy is ignored. Some interviewees felt that an environment-first approach was needed for future policymaking.

"I think we really need to establish some legislation and ensure that it can be put in place to really facilitate the government and officials in ensuring companies abide by the law! We also have to go beyond Manitoba's borders and have to garner support from the federal government for legislation that will support its citizens and industry alike. Studies have been done worldwide regarding heavy industry, the respective activities, and the sordid outcomes on the health of the citizens residing downwind or downstream from the Industrial Parks and Industries in question. Legislation, laws, and a practice of governance and accountability relative to all of these things will be better for everybody."

"We need a contaminated site strategy for Winnipeg and then we will need to fund it, it has to be valued and it has to get integrated into the city develop planning. The city and the different levels of government will have the sustainability offices but those issues have to be integrated into the financial and economic and urban planning, the budgeting. It has to be integrated into the economic and urban planning of the governments not an add-on or a separate department, it has to be integrated into the main processes."

Zoning

Interviewees identified *zoning* as part of more specific discussion of land use. Similar to the discussions of policy, accountability, and enforcement, interviewees said that the government should play a role in how industry is sited. They said that the government should create, enforce, or change zoning to prevent unsafe industries from coming into contact with residential areas. One interviewee acknowledge that their neighbourhood was once the outskirts of town but now had multiple uses in conflict. The interviewee said that zoning should be updated to reflect these changes.

> *"We even discovered misinformation in the zoning allowances permitting M3 practices in M2 Zones."*

> *"There are high hazard (M3) industries on M1 and M2-zoned properties that should be buffer zones... there has been an environmental licence granted to an industry situated on M2 zoning... city plans for ongoing densification need to include dealing with mitigating conflicts with industrial and evacuation plans that are shared with residents..."*

> *"The zoning laws as well should be respected and they should be enforced and there should be more effort to take our concerns and change the zoning to make it more neighbourhood friendly as to allowing any business to move in."*

Site Cleanup

Interviewees mentioned *site cleanup* in a few different ways. Interviewees primarily called for site cleanup that was badly needed for contaminated sites near their homes. Some talked about site cleanups that had happened piecemeal in their area or discussed site cleanups they knew of that had occurred in other neighbourhoods. One interviewee thought that the City should look into the most up-to-date cleanup methods for contaminated sites, mentioning that other cities around the world have had good success at a manageable cost with new methods. Some interviewees from Point Douglas talked about site cleanup in a somewhat different context, referring to the noise of bulldozers and other heavy equipment for cleaning up a fully burned building nearby. These interviewees described having mixed feelings: they were happy that the burn site was being cleaned up, but the noise and visible disrepair was a source of stress.

> *"We [should] visit new methodologies of dealing with contamination. One of the things I learned when we did, I was involved in the building of the... daycare in [community centre]. I was just amazed at the new technologies and that*

is 10 years ago or more — that I was not aware of at the time and I have been involved in trying to get the chair of the committee to move the rails, the CPR yard and everyone says Oh, it's so contaminated, you can never do that, but we now found out that Montreal did it, they have moved the rails and they managed to deal with the brownsite and so it is not a billion-dollar project anymore, it is a multimillion dollar project."

"Yes, so now the cleanup is again, it is actually just the bulldozers working.. — I don't mind it actually. I accept it, but it is loud and the more I hear, the better because there is progress, but it is just the impact of the cleanup. It is like, "Okay, when is this going to be done?" and is it coming into our air space and the thumping, as my house eventually got a crack... I think they play a massive role, because one of us cannot do everything. We have tried as a neighbourhood to bring 10 people together and then try to do something, like even just clean up the garbage and figure out the needles, but it is not enough, so I think the government plays a very big role in this and should take a leadership position, taking more initiative..."

Infill Strategy

There were mentions of *infill strategy* in relation to the topic of land use and land management. One interviewee emphasized that the City's increased interest in building infill development might be stymied by neglected contaminated and brownfield sites. Another feared that this dynamic was a sign that the land is deemed to be too risky for a developer. A third interviewee recounted their own difficulties in demolishing a damaged building and constructing a new house in their neighbourhood impacted by industrial activity. This topic of concern reflects similar issues about land management and land use.

"I do think in terms of contamination, one of the things I suspect is that some development of housing doesn't take place because developers and others are nervous about the problem of potentially building on contaminated sites..."

"Because of the fire, I thought I didn't know how long I was going to last here, so we did actually try to build another house in the area and try to inject some revitalization or whatever you want to call it, and I like the proximity to downtown and the history of the area — so we did try to do that and build a home and actually live there, me and my partner, and strengthen the neighbourhood. And it was so hard to — there were so many hurdles to building a house."

"I am of the opinion that all of these new precincts that are being developed can't go ahead, there should be a moratorium on any new precincts in Winnipeg,

until we can figure out infill and mixed use, mixed-income development, create a model for this new approach to development. I think the contaminated sites strategy is key as I have already described in terms of seeing all land as an asset, that no land is garbage land, that if it cannot be reused for development, then it has to become a priority for green space."

Land Value

There were a few specific mentions of *land value* as part of the concerns mentioned earlier about infill strategy, land management, and land use. Interviewees worried about the ways that contamination could bring down land value, thus contributing to worsening neglect and reduced community development.

"How does the close proximity to industrial affect real estate value?"

"I see social economics stuff, things that improve the community, because if you go to, say, River Heights, you don't—I mean there are some parts that have the industrial areas but you don't see the, it seems to bring down the value. It makes it look more dingy because again the buildings are older, the area is usually not kept up because it is industrial."

Seeking Justice and Accountability

The core of our project centres around the goal of finding real justice for the communities we are studying. It was therefore very important to us to talk about it with our interviewees to understand their perspective. First, we wanted to promote discussion about the concept of environmental justice. We wanted to know about people's personal experiences of trying to get help, whether as an individual or as a member of a community group. We also were curious about the ways that people might feel obstructed or confused about how to seek justice. We also welcomed any ideas that interviewees had to share about avenues to justice or necessary interventions.

Environmental Justice

Environmental justice is the driving concept that has inspired this project. When asked about environmental justice, interviewees commonly had strong feelings about their right to know what they were exposed to, their right to live in a safe and healthy neighbourhood, and their right to have a say in what kinds of industries are permitted to operate around them. Interviewees felt very passionately about having a right to environmental justice, as

demonstrated by how they described their environmental difficulties and sense of powerlessness around trying to effect a change. The full range of quotes can be found in Appendix 3.

> *"Obviously environmental justice means that the people who are impacted by problems in the environment have access to methods to improve that and one of the parts of that is that people have information. That information is available so that they can seek justice."*

> *"... at the end of the day if you are not able to thrive in an area and be a healthy person, happy person, then what are we really doing... —like what good is it to have a business if you are making the people around you sick. What good is it to be recycling or thinking about inducive materials if you are not doing it in a way that—or if you are doing in a way that—I mean studies have shown that it is detrimental to the health of residents of the area. I think that we need to be having an environment first approach to policy and I don't think that we should be weighing business versus environment equally."*

> *"What is needed to improve—like I don't know what needs to be done internally, but I think I just I guess want to be heard and I don't know what avenue I need to take to. I am not a very loud person, I guess I don't want going out there broadcasting but I just I don't really have a avenue where I feel like I am getting heard, or like someone is actually responding."*

Feeling Ignored by the Government

By far, the most common issue that people identified was that they *felt ignored by the government*. Interviewees discussed this phenomenon multiple times, leading to a total of 44 mentions of feeling ignored by the government. Discussions centred on community members putting in effort to get answers for their concerns, whether in the form of an email to a councillor or years of compiling research. Ultimately, interviewees felt that their efforts would go unanswered or be explained away. Some interviewees noted that government roles would frequently be vacated and filled by a new person, so they would have to start over again instead of making progress.

> *"I guess it feels like a lot of what we are asked to do as citizens is to contact our local representatives, but it doesn't really feel like that always goes anywhere... when we report it to the proper authorities and we have, I have reported and turned in government form complaints, put on government forms and turned in with pictures. We have met the government, we have met with the city, we have met with the provincial and the fed side I don't know, they ignored*

totally and we have just been patted on the head... after we accumulated our group, accumulated all the evidence that we needed, we went to our city councilor at present who said now he has never seen anything... Then we meet with the provincial government, first was the NDP, said they would get back to us and once a month went by, they got voted out of office. Then we approached the PC government... each time we go for a meeting with them it is a new person, so we have to start fresh ... We have actually filled in forms and then called the compliance officers and had them come out. The officer herself in the midst of the smoke and everything that was pouring out of the recycler said she didn't see any smoke. Well, myself and 12 other people from our neighbouring business stood there and were dumbfounded that she does not see the sick, heavy duty smoke or smell the chemicals. I said surely your nose and eyes must be burning now like ours does, and she claimed that she was fine and everything was fine."

Lack of Information

Lack of information was another frequent complaint. There were expressions of frustration with not knowing what chemicals and industries are in their neighbourhoods, not knowing the full health impacts they might be experiencing, or not getting any information from government officials or authorities. Some interviewees thought that reports and testing were not clear or thorough. Others thought that the process of raising a complaint had poor transparency around follow-up, or even getting their complaint to the right person. Some felt that information and reports were being suppressed. One person thought that communications, when they were available at all, were not tailored to the needs of a community with low levels of education. Lack of information was deemed to be a significant source of stress for community members, which is worsened by the fact that trying to get answers led to dead ends, further confusion, and the breakdown of trust in authorities who purportedly should be able to help.

"We do not know in many cases how much industrial waste there was there, what contamination there is... the problem I have as a community activist, that as a community person is that we don't know, the lack of clarity of how serious the contamination is.. . any organization including the one that is doing the survey, if they are interested in having community involvement around environmental issues and contamination, they must communicate with the community, not just the leadership. The leadership is very middle class and when I was chair of the board... at least a third of the board was always

Indigenous and we were very, very sure we had... a cross-section of the community on our board of directors, but it takes work and people. Communities, sub communities, immigrant communities, Indigenous communities have very good reason not to trust white guys like me and standardized systems, so there is a need to reach out and ensure that their voices are valued. So, all of your study, all of the work around that really does come back to — can you communicate with the community, can you involve the community, can you give them the facts in language they can understand due to their lack, the failure of our education system."

"And of course, the ongoing one is always what is in the air, we don't really know... Well, to me it would mean that when you raise a concern that it's specifically responded to in a specific way, yes.. . we assume that that is what happening, but it doesn't feel like that's what's happening. It's more a glossed over kind of response and generalization, not specific to that situation or minimized... if something is measured well it's low, it's low level. Well, low level? What does that really mean? And there are some things at low level that are actually pretty harmful. So, the environmental justice would mean that you are shown the data and how it's—and it is an ongoing thing not just one of, you raise it one time but an ongoing monitoring and they can tell you exactly what's coming off of the site. They generally don't seem to be able to do that.".

"The fear of not knowing is probably one of the worst.. . So honestly, accountability and communication and that two would be the biggest things for sure, if they could open up and tell us what's going on."

Community Organizing and Local Activism

Many interviewees described their own work in *community organizing and local activism* in response to the environmental struggles they have faced. There were 29 mentions of efforts to join with neighbours, formally or informally, to build a case for their concerns and submit them to the proper authorities. Community organizing has been a source of support for residents who are worried about the pollution and disruption that they have been exposed to because they can compare their concerns and combine their skills. This is especially important when efforts to make changes are met with unsatisfactory answers or ignored altogether. In St. Boniface, a local group was often mentioned as a key organization that took a leadership role to stop the intrusive industries. Point Douglas is also home to several community organizations with a variety of focuses on neighbourhood safety and wellbeing.

"I have sent a number of emails to a councilor in the area, as well as to one of my federal representatives, as well as being a part of a neighbourhood group that was looking into some of these detrimental effects of industry nearby our area."

"Everybody in our neighbourhood, all the older people who I got on board and I got a lot on board, when I came out they felt, no longer did they feel scared when our group came on board. They didn't feel scared anymore and they felt that they could speak up. And they filled out those complaints and they signed their names to them and I have all of them."

Possible Solutions

There were also 20 mentions of *possible solutions* (although this is not exhaustive since more specific ideas for solutions have appeared in other categories). Interviewees shared many ideas of what they would like to see done differently, including site cleanup, moving the railyard, moving the industries away from residents, more frequent and independent environmental testing, stricter regulations on industries, a system for documenting incidents, better access to information, and establishing boards to hold the government and industry accountable.

"If we could have some boards made up that deal with environmental ecological issues and that were accountable to not just government or industry but also to the public — A board that is comprised again of government officials, both hired and elected, as well as citizens that have a vested interest and at least some background to work together towards a common goal of improving the situation if nothing else."

"Somebody who doesn't live in Canada, who has no ties to the government officials and somebody whom nobody will ever know what the name of the person is or the business who can regulate the laws and take people's reports without people being feared for repercussions..."

Perceived Money, Influence, and Corruption

The topic of *money, influence, and perceived corruption* was reiterated by many interviewees. They discussed a range of ways that this could be a factor in maintaining the status quo. Some interviewees remarked on the profitability of the recycling businesses in their neighbourhoods and felt that the city prioritizes business over people's well-being. Others suspected that ministers, inspectors, and other employees tasked with regulating

industries might be incentivized to find no issue with pollution that has harmful effects on the local population. At least one interviewee recounted occasions where a minister or inspector insisted they did not see anything wrong with a chemical haze and unpleasant odours. Other interviewees raised suspicions that local politicians could be influenced to allow harmful industries to operate rather than advocate for their constituents' needs. While this is not proof of undue influence or corruption occurring, the perception is very strong among interviewees.

> *"I also really think that we need to question who the people that are representing us within politics are and why those people have that opportunity. I think that a lot of the time you are seeing specific types of people in those roles of leadership because they have been groomed essentially to be in those positions of power. They are maybe independently wealthy or they have the right connections or education, all of these systemic things that place the same — I feel like — types of people in those positions of authority."*

> *"I don't know if this is hearsay or a fact, but I have been told that these companies just pay people at the city off because they are not operating in the right zoning permits and things like that and it just kind of gets shuffled under the rug... We have been told that it is not always actually even testing the sound. It is just there to appease everybody in the neighbourhood and calm the chit-chat."*

Accountability and Enforcement

Dovetailing with concerns about money and influence, interviewees also mentioned *accountability and enforcement*. Interviewees called for polluting industries to be held to following the law and to face consequences if they do not. Similarly, interviewees also said that they expect government officials to be accountable for fulfilling their roles. They expressed frustration with seeing polluting industries face "a slap on the wrist". Justice was equated with rightful and timely consequences for harmful actions, and interviewees frequently did not feel that this was happening to the industries in their area.

> *"There are rules, regulations and practices that have been researched and developed as well as a level of accountability that must be imposed upon the companies working in the industry. Why is it that citizens have to point them out and bring attention to the government staff working in the environmental sector issues that were either observed, researched, etc.*

when the citizens should be relying on the expertise of the staff?!... Recent government legislation directed towards the recycling industry really only addresses issues of crime and theft related to metal recycling but does not address the recycling processes and practices that are so detrimental to our health and the environment."

"Main thing is accountability, being able to hold the business owner, the community, as well as the government. It's a team effort, I honestly say, because as the government sitting behind table you don't really know what's going on until you talk to the rest of the community what's going on. So honestly, accountability and communication and that two would be the biggest things for sure, if they could open up and tell us what's going on."

Trying to Get Help

In concert with the number one theme of feeling ignored by the government, almost all interviewees spoke frequently of *trying to get help*. They described different ways they tried to share their concerns, ranging from emails and phone calls to collecting and submitting petitions and evidence. Participants who hadn't previously tried to get help explained that they hoped that participating in the interview was fulfilling that task.

"I have taken government officials into the [industrial area] and shown them things that are in direct contravention of the existing laws. I have brought senior personnel from what was Sustainable Development at the time, to witness ongoing activities and practices in the industrial park only to be met with blank stares and zero acknowledgment of any wrongdoing. We have met with the minister at the time on multiple occasions to no avail. The portfolio was changed as well as the Minister responsible. The representatives kept on coming back to us telling us there's no issues, there's no problems, nothing.

It's just there seems to have been a constant denial of the facts, not hearsay but facts, and so we feel quite powerless in the face of that. For me it is really clear; if you are able to demonstrate to them there are issues here resulting from improper or illegal activities, something has to be done about that."

"It should be clear as to whose authority these things fall under. If we are talking to one group and it is not really their authority, having them—like knowing where to go to address the issue would be useful, having our city councilor participate would be useful and supporting us."

Political Will

There were specific mentions of *political will* when interviewees expressed frustration about the environmental hazards around them. This coincides with the struggles of feeling ignored by the government and trying to get help. Interviewees, especially those who had done activism to build a case for their ongoing concerns, felt that a lack of political will was a major reason why their articulated concerns were not being addressed. They also had the perspective that the political values of those in power do not coincide with what is needed to establish a safe and healthy environment for a community impacted by current and former industrial sites.

> *"We are on the edge of this site and there does not really seem to be the political will to enforce some of the environmental restrictions that some of these businesses may actually technically need to comply with."*

> *"In final analysis, the minister of the environment has the final say and can override everything and just grant the license without anything being really addressed and okayed and checked out, so that seems pointless if you are going to have that as the end result, then why bother with the process at all."*

> *"I don't know, there has to be a political will—it doesn't matter what party. There has to be a political will to listen to the people and not listening to people with deep pockets."*

The Government's Response

The government's response was mentioned as interviewees recounted their experiences, both good and bad, when trying to find help. Interviewees shared concerns about the motivations of politicians and government officials, especially when data gathered by residents and researchers appeared to have no effect on spurring action. Additionally, some interviewees acknowledged that government officials may be genuinely limited in what they are able to do to help. Finding the right person to ask for help also seems to be a challenging process. One interviewee said they had more success with contacting certain government workers directly than they did with 311 calls.

> *"Well, sometimes when you raise concerns with your councilor or MLA or whoever, you are kind of at the mercy of whatever response they give you, even if they go to the department and say here is the concern, they will come back with whatever response that department has given you and you are almost stuck with that response unless you want to push it further which is a huge*

amount of work and most people either don't have time, energy or resources or whatever, you know, to take that.

So, you are kind of stuck with it. On the other hand, if you are the person that's the elected person, if you are the councillor or the MLA, you pretty much are at the mercy of whatever that person in the department tells you, so I mean even if the person, the official, though your representative, is trying to do things in earnest, they are stuck with that response and being stuck between a resident that's really unhappy and our department that doesn't budge."

"We did a huge presentation to the city a couple of weeks ago... and we have been really surprised by the amount of attention it has gotten. We are going to be continuing the series of meetings with public works to discuss garbage and that sort of thing. We got the city coming in with trucks to do a major cleanup of the riverbank. We are hoping to get some of these encampments addressed. Like, they were very responsible, we weren't dealing with 311 and we weren't dealing with our city councillor, we were dealing directly with the civil servants, and that took some doing, but it is much more effective than either the city councillors or, you know, because they tend to be politicians, or 311, where 311 I understand is operating at 18% and you are lucky to get any attention at all."

Business Interests vs. Environment and Health

One several occasions, interviewees identified the conflict between *business interests vs environment and health*. They talked about coming up against this conflict when trying to advocate for their community's health. Many interviewees suggested that these competing interests prevent meaningful progress, especially when business is prioritized over environment and health. For interviewees, this dynamic plays a part in the larger issues of policy, accountability, enforcement, and zoning. If business is prioritized over environment and health, that choice impacts policymaking and enforcement choices as well.

There is a cost to all Governments and the citizens at all levels for not engaging in researching and creating legislation and the means to support the legislation that effectively addresses environmental and citizen health concerns. That lies in the ever-increasing healthcare system requirements caused by an unhealthy population that is a direct result form the current and longstanding practices of various Industries in and around our cities."

"Whenever... you have taken it as far as you can as a resident and they just, without addressing each issue, the environmental license is granted, it is

not very... reassuring, I guess, that you know care is being taken and there is precaution. It seems pointless because if you are going to gloss over things or not address it, then what assurance is there that anything is being addressed properly. In final analysis, the minister of the environment has the final say and can override everything and just grant the license without anything being really addressed and okayed and checked out, so that seems pointless if you are going to have that as the end result, then why bother with the process at all. It is a big waste of time for people because the process itself of having to prove that somebody is or a company or whatever is causing harm, well that's daunting for any resident."

Some of these businesses are new, so why are new businesses allowed to start up in an area that is basically closing down or shutting down and they know there's issues — so it is for the city and the government and the provincial government to act on those things."

Illegal Activity

Illegal activity was brought up as interviewees explained two broad categories of this concern. The first category relates to day-to-day safety and security concerns about theft of resalable scrap metal and accompanying drug trafficking activities in the neighbourhood. The second category refers to industries that might be ignoring the law or who might not be held accountable for suspected problems, such as emitting pollutants or buying scrap metal of questionable origins. In either case, interviewees said that these suspected activities impact their quality of life and future outlook, especially when no consequences are effectively served.

"For me it's really clear: if you are able to demonstrate to them there are issues here resulting from improper or illegal activities, something has to be done about that."

Licensing and Compliance

Licensing and compliance were cited when some interviewees talked about issues related to holding polluting industries accountable. Interviewees who said they had conducted their own research into neighbourhood industrial sites said they thought they had found evidence of some industrial businesses being out of compliance with their licenses, sometimes for years. Another interviewee questioned why new industrial businesses were being licensed to operate in an area with known land use conflicts and quality-of-life issues.

"There has been I would say a lot of contradiction in what we have seen when we have raised issues where we have even been able to look at bylaws and have been told that they are within their — they are in compliance or whatever the concern is and then later to find out that actually now they weren't in compliance."

Government Agencies

Interviewees mentioned *government agencies* a few times when retelling their experiences with trying to get help for their concerns. Some interviewees said that trying to find the right person was difficult, or that the person in the role was replaced multiple times. Another interviewee mentioned the Manitoba Hazardous Waste Management Corporation (MHWMC), which may have been a helpful organization except that it was dissolved or reorganized over time. When talking about trying to get help, another interviewee stated that 311 was difficult to access in a timely manner over the phone and often did not ultimately come through with help. However, this interviewee did say that they had better luck with reaching out to a family resource service.

"It should be clear as to whose authority these things fall under. If we are talking to one group and it is not really their authority, having them — like knowing where to go to address the issue would be useful, having our city councilor participate would be useful and supporting us."

"So, I have called 311. So mainly 311, but I have also called the fire department and I may have somehow got linked to the police, and I have also one time got linked to... Family Services... And the response I got 311 is just I think a platform where you just report it. So, it is what it is, like things are very slow... There was one Family Services, they are really good there, that was good. And I have called police where there were scenarios, but they don't ever, they just said oh thank you and they don't ever show up or anything like this."

Indigenous Rights and Interests

A few interviewees mentioned *Indigenous rights and interests*. One interviewee talked about the need for cultural sensitivity when both environmental activists and government officials try to work with communities with high numbers of Indigenous peoples. This interviewee also spoke about the ongoing work of building community relationships to protect intersectional community safety, whether environmentally or socially. Another interviewee felt that environmental justice is directly tied to need for decolonial approaches, including meaningful efforts for Land Back as reconciliation.

"Indigenous communities have very good reason not to trust white guys like me and standardized systems, so there is a need to reach out and ensure that their voices are valued... Indigenous Elders and Indigenous leaders in the community, they are not on my board or anything like that, but they let me know what is going on and they make sure I stick to the principles that we established at early stages. So, the ability in a very both formal and informal way to work with the Indigenous community in North Point Douglas... is crucial to anything you are wanting to do in the future."

"So, from an Indigenous point of view I also think that environmental justice has to do with Land Back and there are groups in the city talking about what does Indigenous urban design and urban planning, urban development look like."

Precedent

An interviewee identified the *precedent* that has been set based on past explosions and fires. The interviewee thought that the pattern of events was significant, not random, and gave the gravity of precedent to the situation. The interviewee feared that frequent explosions in the area would be seen as normal rather than abnormal, and therefore there wouldn't be urgency to find a way to stop it.

"There is precedent and so with this going on, it is not though it is nothing. There is precedent... And the fact that basically we have had [an explosion] incident 10 years ago, basically there's been precedent."

Harassment

An interviewee shared stories about *harassment* in response to their research and activism. They described a pattern of incidents of being followed and individuals approaching their home property. The interviewee also contacted the police about being pursued. The interviewee would report encounters to the police, but also described incidents where they drove directly to the police station upon realizing they were being followed in real time.

"I was actually being followed. Oh yes, I was actually being followed ... which started by two of my neighbours telling me there is someone... taking pictures of [my] house... ... . it got to the point where every day I would just drive over to the police station, take all of the people who were following me."

Community Development

Community development was brought up by a few interviewees with experience in community organizing. These individuals encountered challenges in their advocacy work when goals for community development were obstructed by uncooperative government officials as well as the unknowns of contaminated land. They also discussed the untapped potential of community organizing for improving neighbourhood life.

> *"I was heavily involved in the development of the [community centre] and we ran into the fact that that was a brown site, but with the help of... the architects for the project... they hired a company and they developed a system of where they were able to cover it up to such an extent that the kids could play and make it grow flowers and stuff, just not vegetables. "*

The remaining themes mentioned in the interviews had just one mention each, and many of these were closely related to more popular topics. These final topics include *suspected sources of pollution, oil refinery, federal support, sampling snow to indicate recent activity*, and *old gas stations*.

Analysis

SEVERAL CORE ISSUES arise from the data we gathered from the interviews with people who live near the industrial sites in Winnipeg. We will examine these issues as they relate to the initial research questions.

1. **What are the documented and undocumented environmental and health impacts of living, working, and/or playing near industrial development and brownfield sites in Winnipeg's inner city?**

First, it is important to explain our working definitions of "documented" and "undocumented" impacts in this report. We think of formal test results and reporting as "documented", while anecdotal information gathered through community research methods as, until now, "undocumented". This distinction also hints at the ways data may be prioritized in traditional research, where rigorous quantitative testing is sometimes seen as more valuable than qualitative research. The goal of community research and transformative research is to recognize the value and significance of qualitative research as well, especially research that is centred around marginalized groups and their lived experiences.

The documented environmental and health impacts of living, working, and playing near industrial sites were identified through the series of scientific tests conducted on our study areas by different entities over the years, with a focus on lead. High levels of lead in the soil in Point Douglas, St. Boniface, and Weston means that the local community is at risk for bone,

neurological, cardiovascular, and renal disorders because of lead. There is also an increased risk of generational lead-related illness for several reasons.

First, lead can be passed from a pregnant parent to a fetus. Second, lead tends to linger in the environment, as past testing suggests. Although recent testing shows that lead levels have decreased in some areas, there is still no known safe minimum for lead and therefore, cleanup should be taken seriously. Third, despite the end of leaded gasoline, paint, and water pipes, some of our study areas continue to have high lead levels indicated in test results, which is very likely related to the past and present operations of nearby industries.

The undocumented environmental and health impacts of living, working, and playing near industrial sites arise from the data we gathered in our interviews. This contributes new information to an existing gap in knowledge about living near industrial sites, which we discovered through our early research.

Our interviews revealed that people who live in our study areas felt they were seriously impacted in their everyday lives from nearby industrial activities. The effects identified by participants are multilayered, taking the form of both short-term and long-term impacts that reduce quality of life. Along with the distinct problems of noise and odours, interviewees were inhibited from enjoying the outdoors and other features of livability due to air polluted from dust and emissions. Many discussed poor health and concerning physical symptoms that they perceived to be directly related to the pollution in their area, such as feeling allergy-like symptoms, burning noses and throats, and coughing. The workers we interviewed also expressed fears for their safety when coming into the area for their workdays, citing flying shrapnel that could cause injury, damage their cars, or even damage the building they work in.

A surprising but understandable finding from our interviews was the ongoing impacts from fear and worry. Most interviewees were haunted by the fear of the unknown when their health and safety were concerned. They worried for their future, concerned about a range of impacts, from invisible contaminants causing illness someday to the day-to-day struggle of trying to live with stressful noise and odours.

Frustration was also a source of stress because many interviewees described trying to "do the right thing", such as reporting their concerns to government officials or gathering evidence about the impacts, only to have their bids for answers and change to be ignored. Exhaustion from these unheeded attempts became another obstacle as community activists found

themselves having to step back from their advocacy work from time to time. Interviewees felt that getting real answers and seeing real progress would relieve the pressure they endure, but those solutions have never appeared. The holding pattern of trying to get help and being ignored has become an onerous problem of its own with no known resolution in sight.

Finally, many interviewees strongly felt that they were being ignored and even victimized as the industrial activity went unchecked. Several pointed to their social class as a reason for being ignored. This perception is supported by our research on environmental injustice, which shows that the most heavily polluted areas in urban settings are often the poorest and most racialized. The situation in inner-city and mature communities in our study area is clearly an incidence of environmental injustice.

2. **Do people who live, work and/or play in Winnipeg's inner city, and particularly its poorer areas, have access to environmental justice? What means do residents and grassroots organizations have to address environmental health concerns through city planning and government decision-making processes?**

Community members in our study areas felt they have limited access to environmental justice when it comes to the regulation of toxic substances and access to legal/policy mechanisms to address concerns with environmental and health impacts. The top concern of our study participants was "feeling ignored by the government". This issue was mentioned forty-four times and summed up the core frustration of our interviewees. Any efforts that they have made to have the government address their problems have gone unanswered. All the while, their fears about health and safety continued to mount. Related and supporting themes were also prevalent throughout the data. When asked directly about what environmental justice meant to them, interviewees said that they wanted to be listened to and taken seriously. As described earlier, many interviewees have made a significant effort to build a case for their concerns and present them to government officials, only to be ignored.

Interviewees also wanted more input and control over the way land use decisions impact their health, such as how industries are regulated and allowed to operate in their neighbourhoods. They felt a stark divide between what community members find to be serious concerns and the opinions of officials and decision-makers. They had not encountered a clear path or procedure for average residents to ensure accountability and meaningful change to protect their neighbourhoods from polluting industries. Moreover, interviewees have

identified a lack of political will as an obstacle to their hopes for a cleaner environment and better health outcomes. All these indicators added up to a clear power imbalance between residents and governing bodies who are entrusted with managing the land, land uses, and industries that operate here. Interviewees felt that their elected representatives and government officials were not doing their jobs to protect residents and constituents.

The legal and policy research supports our participants' experiences as the public has little to no recognized role in many important regulatory processes. For example, the public has no recognized role in the identification, investigation, and enforcement of the regulatory requirements under *The Contaminated Sites Remediation Act*, one of Manitoba's main pieces of legislation addressing toxic substance contamination. The main opportunity for public engagement in relevant provincial processes is through the submission of written feedback, participation in public hearings, and reporting potential contamination to the Department of Environment, Climate and Parks. There is limited opportunity for public engagement beyond this, including a lack of ability to initiate and participate in government investigations and court processes.

Manitobans also do not have recognized substantive environmental rights and limited procedural rights, which impacts the ability of citizens to access court processes and other legal tools to help protect themselves from negative environmental and health impacts. Environmental enforcement processes are weak, for example, in that the City of Winnipeg's legal penalties for violators of municipal legal requirements are minimal and most violators are given the opportunity to make changes in order to comply with relevant by-laws, which results in lowered fines or avoidance of fines completely. Citizens also lack access to a range of data that would otherwise help community members better hold government and industry accountable when negative impacts are experienced.

Although there have been access to information improvements at the provincial level since the contaminated sites registry was moved online in 2022, it is still difficult to access detailed information about provincial compliance and enforcement activities. There is a wide range of information available through the City of Winnipeg website and Open Data Portal, however, more analysis is needed to determine what data is available related to environmental and health impacts and contaminated sites. There is also a lack of access to funding opportunities that facilitate community-based data collection and independent environmental and health testing.

Overall, there is a need for more opportunities for meaningful public engagement, and the development of more legal and policy mechanisms that better enable citizens to engage in investigations, enforcement activities, and court processes, and access to more environmental and health data.

3. **What is the City of Winnipeg's strategy to deal with conflicts between industrial and other land uses, and the remediation/ redevelopment of brownfield sites? How can this be improved to increase the quality of life and access to environmental justice for all inner-city inhabitants, but especially its most marginalized people and communities?**

The City of Winnipeg does not to have a comprehensive policy or regulatory requirements addressing conflicts between industrial and other land uses, other than basic zoning requirements. The City of Winnipeg also does not have a comprehensive approach for the remediation and redevelopment of brownfield sites. Instead, there are only a few broad commitments made in recent policy documents like *OurWinnipeg 2045* and *Complete Communities 2.0*. Although the Government of Manitoba retains most legal responsibility for regulating contaminated and remediated sites, the City of Winnipeg could do more to influence land-use planning and the industrial operations in our project area by developing and updating local area plans and other applicable policies.

As discussed above, interview participants and members of our Advisory Committee made a range of general suggestions in terms of how access to environmental justice and quality of life can be improved for impacted community members. In the City of Winnipeg currently, most opportunities for community members to engage in regulatory processes involve participation in public consultations through the Engage Winnipeg website or various public hearings held by Council, Standing Committees, and The Municipal Board. There appears to be limited public opportunity to engage in investigations related to potential by-law violations, participate in enforcement processes, or undertake government-funded community-based data collection activities. Community participants suggested the creation of more legal and policy tools to increase their ability to engage in decision-making processes determining the use of land in urban areas, approval of proposed industrial operations, enforcement of existing regulatory provisions, and access to information.

The legal and policy research has yielded a range of potential opportunities at both the municipal and provincial levels for increased public engagement and improved access to environmental justice. This will be discussed in more

detail in the Recommendations Section, including the amendment of existing regulatory requirements to require more meaningful public involvement, better access to information mechanisms, and adoption of new legislation, such as an Environmental Bill of Rights, or Anti-SLAPP Legislation.

Overall, there appears to be some promising opportunities to strengthen regulatory requirements at the municipal level and improve access to environmental. However, more research is needed, including comparative research with other jurisdictions in Canada, to get a complete understanding of potential by-law reforms as most existing requirements are not directly relevant to the concerns of our project participants.

4. **Other Lessons Learned**

Although federal requirements were not a focus of this study, there appears to be potential for Manitobans in our project area to utilize the environmental regulatory processes at the federal level to better protect their health and their communities from harm. In particular, the legal processes and requirements under CEPA show considerable promise, depending on whether proposed amendments in Bill S-5 are successfully enacted.

There are also signs of better recognition of the need at the federal level for government programs and policies focused on improving the public's access to environmental justice. Furthermore, there is growing recognition of the serious consequences faced by Indigenous communities and other vulnerable populations because of systemic environmental racism.

The research and public advocacy activities undertaken at the federal level as part of this project have allowed our project team to gain important understanding of and experience with governance and parliamentary processes at the federal level. This work has confirmed the need for more research on the legal tools available at the federal level to assist Manitobans with their environmental justice needs and facilitate better protection of the environment and human health in our study area.

Implications for Environmental Justice

The primary takeaway from the interviews is that residents and workers are feeling the effects not only of the pollution itself, but also the lack of avenues to hold companies or the government accountable for the negative environmental and health impacts they have experienced. Real change seems out of reach for many interviewees, including those who have already

dedicated significant time and effort to seeking justice. Interviewees repeatedly described feeling ignored when engaging with government officials. Additionally, many of our project participants can be considered part of a vulnerable population, and therefore face more barriers in their efforts to have community concerns addressed by government. This compounds the struggles they face against pollution and the conflict in land use between industry and residential areas.

There is clearly a need for systemic change at all levels of government to better enable community access to environmental justice. The following recommendations reflect this reality and start the conversation in terms of the policy and legal changes needed to create a more inclusive regulatory system that better protects the environment and the health of all citizens.

Recommendations

We view the HEHN project as a beginning rather than a resolution. A lot of work will be needed to respond to the problems highlighted in this report, with the end goal of creating safe and healthy residential areas that are free from heavy industrial pollution. The research conducted for this project also inspired ideas for more projects and future research to build on the work. We hope that this work will be valuable not only for Winnipeggers but any community in Canada that might be seeking environmental justice.

Commitment to Environmental Justice

1. Recognize the environmental rights of Manitobans.

While there are no clear legal and policy solutions for some of the more general policy recommendations above, a very promising legal approach to improving the legal tools available to the public to engage in policy and legal processes is the recognition of the environmental human rights of Manitobans. This should occur at all levels of government (municipal, provincial, federal), but is particularly important at the provincial level as the Government of Manitoba has the most legal control over the policies and processes that citizens must navigate when faced with negative environmental and health consequences from industrial activities.

MbEN has long been advocating for the legal recognition of environmental human rights and strongly recommends the adoption of a stand-alone environmental bill of rights by the Government of Manitoba. This Act should

recognize both substantive and procedural environmental rights and create more mechanisms for independent oversight of government and industrial operations with the potential to cause negative environmental and health impacts. For example, the creation of an Environmental Commission position within the Government of Manitoba would be beneficial. We also recommend recognition of environmental human rights by the City of Winnipeg through the adoption of a municipal declaration and recognition of environmental rights in municipal policies. Finally, we support the recognition of the right to a healthy environment at the federal level in Bill S-5 and encourage the federal government to consider a more comprehensive approach, such as through the adoption of stand-alone federal environmental rights legislation.

2. Adopt a comprehensive environmental justice lens when reforming law and policy.

In order to ensure that government responses include consideration of vulnerable communities and capture a broad range of public concerns, it is imperative that an intersectional and environmental justice lens be applied when reviewing and reforming current laws and policies. Just as our research has been community-led, the solutions should also provide a meaningful seat at the table for people who are being impacted. There should be collaboration and empowerment, such as support for community members to pursue legal remedies, training in civilian science research, and policies that are effective and enforceable. Finally, environmental justice should not be considered separate from other types of social justice work, and interdisciplinary ideas and approaches should be included accordingly.

There has unfortunately been little recognition of environmental justice or related concepts like environmental racism and vulnerable populations in Canadian law and policy so far. It is therefore difficult to identify examples of good practice that could be applied in Manitoba to accomplish this goal. However, a few provincial jurisdictions have started to broaden the scope of language used in environmental legislation. For example, a definition for "environmental justice" has been incorporated into the *Environmental Rights Act* (s 17(1.1)(e)) in the Northwest Territories and there is proposed legislation at the federal level (Bill C-226) that, if enacted, will result in the development of a national strategy to assess, prevent and address environmental racism and advance environmental justice. The proposed legislation also establishes reporting requirements in relation to the strategy and collecting data, including on the socio-economic circumstances and the physical and mental effects on communities across Canada that are affected

by environmental racism. A similar approach, i.e. including definitions of environmental justice terminology and developing new policy approaches, could be adopted in Manitoba both at the provincial and municipal levels.

3. Adopt policies and laws that better protect community advocates.
Interview participants and Advisory committee members discussed a general fear of legal repercussions for undertaking public advocacy activities. Some of our community participants had directly experienced or had knowledge of others who faced threats of legal action from industrial corporations they had targeted in their advocacy campaigns as a source of their environmental and health concerns. For example, we heard of citizens who received cease and desist letters for making a Facebook post about their environmental concerns. It is a common legal tactic for industrial representatives to threaten legal action against environmental advocates, such as a civil defamation lawsuit. Although many of these threats do not progress past a letter from the company's legal representative, many citizens will discontinue their advocacy activities when faced with a legal threat as the potential legal and financial burden is extremely overwhelming. This type of legal threat against community advocates is often referred to as a Strategic Lawsuit Against Public Participation (SLAPP suit).

There are some existing protections in Manitoba that provide a basic model, for example *The Public Interest Disclosure (Whistleblower Protection) Act*, which protects employees who disclose wrongdoings in or relating to a public body. However, legal developments in other jurisdictions like Ontario and British Columbia are much more promising in terms of protecting environmental advocates from SLAPP suits. It is strongly suggested that Manitoba adopt similar anti-SLAPP legislation at the provincial level.

4. Undertake more research into the relationship between area incomes, levels of pollution, and ability to effectively ask for environmental intervention in Winnipeg.
Class issues figure prominently into experiences of institutional environmental injustice. The communities we studied most closely had some variety in their incomes and related factors but seemed to be equally unable to achieve environmental justice or be taken seriously when they raised environmental and health concerns. It would be informative to engage in an economic research project that tries to uncover a cutoff point for social class where environmental health is prioritized by those in power, therefore illustrating the range of what it means to be a vulnerable community. Additionally, the

project could look at the effectiveness and resources of community advocacy groups that try to fight for environmental protection.

There are no clear legal or policy solutions to fulfill this goal. Inclusion of funding and research requirements could be incorporated into an environmental justice policy or environmental regulatory requirements at all levels of government (municipal, provincial, federal). Governments could also commit funding to research that explores access to justice during annual budgeting processes.

Land Use Planning

5. Develop a more inclusive and comprehensive regulatory approach to the redevelopment of brownfield and contaminated/remediated sites in Winnipeg.

Interviewees speculated that the contamination could be adding to the perception of poverty in their neighbourhoods and inhibiting growth. Most North American cities including Winnipeg, need more infill housing to help prevent urban sprawl. Brownfields and contaminated sites in Winnipeg should be investigated as both an obstacle and an opportunity for improved infill development. Additionally, the link between real estate value and contaminated sites should be examined thoroughly for the full story of the financial impact. Contaminated sites can function as a financial liability or a form of debt and should be managed diligently.

MbEN has advocated in the past year for changes to *The Contaminated Sites Remediation Act* in Manitoba to ensure it is more comprehensive and better captures the principles of sustainable development. For example, we recommended a new section should be added to Part 2 of the CSRA that outlines the process for public reporting of potentially contaminated sites and the obligation of government to investigate and publicly report the outcome of a citizen-triggered investigation. There is also a need to consider updating the language of the CRSA to better align with the language used in international and federal sustainable development laws, policies, and publications. For example, there could be specific reference to and alignment with the Sustainable Development Goals (SDGs) in the Preamble, s 1(1) (Purpose), and s 1(2) (Principles of sustainable development). Overall, there is a need to take a modern approach and reform the CRSA to ensure the provincial approach to contaminated and remediated sites reflects more than just an industry perspective.

As discussed elsewhere in this report, there is minimal discussion of brownfield redevelopment at the municipal level, except for a few high-level commitments from the City of Winnipeg in *OurWinnipeg 2045* and *Complete Communities 2.0*. There is a need for more consultation with impacted community members and development of more comprehensive policies and corresponding municipal by-laws to address the redevelopment of land in our study area, ideally at the neighbourhood level. We recommend that work on these municipal policy changes be prioritized by Winnipeg's newly elected municipal government.

6. Relocate the freight trains away from residential zoned areas.

In relation to any efforts to restrain or remove industrial activity in residential neighbourhoods, freight trains should also be removed from residential areas. This type of project has been discussed time and again over the years, but nothing has ultimately happened. After the near catastrophe that occurred in 2012 when the St. Boniface fuel plant exploded around freight trains, the local residents we interviewed were still shaken by the event. They worry about what could happen if another explosion were to occur around freight train tanks full of combustible contents. In addition, the freight trains produce noise and heavy metal emissions of their own, adding to the pollution problems in the area.

There is no clear policy or legal solution that can be recommended to support this goal. Instead, community consultation needs to be undertaken with residents living in areas adjacent to Winnipeg's rail yards to develop both short and long-term policy goals that will ultimately result in better separation of residential areas from heavily polluting and dangerous industrial areas. This will likely require adjustment of current zoning by-laws, development plans, and potentially amendment of provincial planning legislation such as The Planning Act.

Improving Accountability and Enforcement

7. Adopt new legal tools and amend existing laws to improve enforcement of existing regulatory requirements and government accountability.

An important outcome for this project is to enable meaningful changes that stop the harmful pollution emitted from industrial activity. This could mean a variety of interventions. Legal interventions are described above. Licensing and zoning policies should be investigated to determine if they are sufficient

for enforcement or if they have been enforced consistently. Companies should be required to contain their recycling activities to prevent noise and emissions from entering the environment. Or the companies should be relocated to a place where industry does not conflict with residential activity. The key is to find ways to require political will and action from those who have the power to do so.

There are a range of potential legal and policy solutions to improve government accountability and enforcement of regulatory requirements at all levels. Many of the policy and legal reforms suggested above could be supported by strong enforcement mechanisms that create penalties for violators and remedies for those negatively impacted by the actions of industry and government. This includes adoption of environmental rights legislation, amendment of existing environmental and health legislation to include more procedural tools — such as the ability for citizens to trigger an independent investigation of government or industry operations, submit evidence of legal or policy violations, or have recognized legal standing to engage in court proceedings to seek legal remedies when negative environmental or health impacts are experienced. We recommend further community consultation to determine where stronger enforcement mechanisms are most needed, but ultimately to take a broad approach to improving the enforcement of environmental and health requirements in Manitoba. In particular, the adoption of environmental rights legislation and Anti-SLAPP legislation would both contribute to strengthening the ability of impacted community members to advocate on behalf of themselves and their neighbourhoods without facing severe legal and financial consequences.

8. Publish more enforcement data at both the municipal and provincial levels.

Our project participants have identified a need for a broad range of data to support their access to justice needs. This includes more access to enforcement data at all levels of government. Community perceptions of government actions and regulatory requirements that are supposed to protect the health of citizens and the environment have been strongly influenced by the lack of information about government enforcement activities. In many cases, it is not clear if there are any enforcement actions that have been taken because of community complaints. There is a strong sense of "regulatory capture", i.e. public perception that the interests of government and industry are aligned, resulting in the public interest in environmental and public health receiving limited consideration when important governance decisions are made.

There are a number of legal and policy approaches that could improve the availability of enforcement data, including the addition of government reporting requirements in provincial legislation and municipal by-laws (e.g., in the annual reports of government departments), creation of an online enforcement database with data corresponding with existing legislation and by-laws, and policy commitments to more funding for government agencies responsible for enforcement of environmental and health regulatory requirements. We recommend a broad approach to the development and adoption of new policy and legal mechanisms to require the publication of more enforcement data.

Independent Health and Environmental Research

9. Undertake more independent, community-based public health and environmental research. This includes, but is not limited to, collection of more information regarding:
- **a. Blood Lead Levels,**
- **b. Contamination of precipitation (e.g. rain, snow) and groundwater, and**
- **c. Urban wildlife and ecosystem impacts.**

Increased Independent Testing

Interviewees have repeatedly called for independent testing to occur more frequently to better capture local environmental conditions and ensure the resulting data can be relied upon by community advocates. They have lost trust in government testing, either because it doesn't lead to change or because some testing has been performed incorrectly. The interviewees want conditions to be monitored regularly by researchers who are not under the auspices of the government, and ideally at the behest of impacted communities. This approach would require sufficient support and training to build capacity in the community.

Public Health Data

A key recommendation identified by participants is to conduct a thorough public health study to address community questions and worries about their current and future health. Such a study should look at both physical health and mental health because interviewees said that both are impacted by living close to industrial and contaminated sites. The constant toll of worrying about safety was described as a problem in and of itself. The question

of health and safety is another discrete problem that fuels their concerns. Finally, actual symptoms that interviewees suffer from have caused problems for daily comfort and livability. All of these problems can be addressed by a close look into public health trends in the impacted areas and how they might relate to known contaminants that have shown up in test results over the years. This would provide much-needed answers and make it possible to come up with a plan to stop the hazards from continuing.

Blood Lead Level Testing

A significant information gap identified by our research was a lack of accessible data about blood lead levels in Winnipeg. A 2019 report that raised concern about blood lead levels in Winnipeg children cited speculative blood lead levels, which were determined by modeling (Intrinsik Corp, 2019). There is no history of in vivo comprehensive blood lead level testing programs for children in Winnipeg. It is hard to fully understand the scope of harm and the needed interventions without this information. Therefore, we think that there should be serious consideration of blood lead level testing for children and adults, even for a pilot number of years, to gain context about the impact of known lead contamination. Lead poisoning, as described elsewhere in this report, is a serious public health risk with lasting consequences for generations.

When the issue of blood lead testing was raised in Winnipeg after the 2019 Intrinsik report publication, public health officials declined to pursue widespread screening for lead unless clinically significant symptoms were observed. They cited practical and ethical obstacles to implementing testing (Sanders, 2020), a claim that deserves more investigation. When considering the resources needed to implement testing, there should be consideration of the costs of preventative and mitigative care vs. the costs of unchecked lead exposure, especially in Winnipeg where high lead contamination in the soil is known.

Research into Contamination of Precipitation and Groundwater

This report has mostly focused on air and soil pollution. But based on our background research, it is probable that water has been affected as well. Impacted waters potentially include groundwater, nearby rivers and surface water, and even the local municipal supply. Snow was tested in a 2020 research project and revealed high levels of contamination (F. S. Solademi, 2020), which suggests that rain is probably affected as well. If soil is heavily contaminated, then the rain, snow, and runoff probably carry contamination

into the watershed. Every angle is needed to get the full picture of health and environmental problems, which will improve transparency and the ability to plan for a solution to the contamination's effects.

Research into Wildlife and Ecosystem Impacts

Although there has been a primary focus on impacts to human health in this report, there is also a known problem with the safety of garden vegetables grown around the area due to emissions. Interviewees also discussed garbage building up in woodland areas and the visible death of the tree canopy. These alarming conditions in residential natural settings suggest that there is even more environmental degradation happening in the wild areas near industrial sites. Therefore, it is imperative that ecological research be carried out to gain more information and determine the remedial course of action to protect the ecosystem at large.

Legal and Policy Solutions

The focus of community participants on the lack of independent, publicly-available environmental and health data was surprising to our team members who were studying the policy and legal aspects of this project. As discussed above, when it comes to facilitating government commitments to funded independent research and community-based data collection, there are no clear legal or policy solutions. The collection of environmental and health data can be facilitated through several federal and provincial laws, such as the *Canadian Environmental Protection Act*, *The Environment Act*, *The Public Health Act*, and other legislation addressing environmental justice and recognition of environmental human rights. This can include the creation of an independent body to undertake environmental and health testing, funding provisions, government and industry reporting requirements, and access to information provisions. Governments could also commit funding to facilitate independent environmental and health testing during annual budgeting processes. MbEN recommends further consultation with Manitobans to determine how best to meet their data needs and determine which approaches should be adopted to best facilitate access to environmental justice.

Conclusion

THE HEHN PROJECT was developed to explore the first-hand experiences of Winnipeg's residents in the inner city and mature neighbourhoods who live near industrial and contaminated sites and identify available legal tools and policies that support better environmental protection and access to environmental justice. We purposely chose to approach this project with an environmental justice lens and a community-based research approach. Through community interviews, we identified the difficulties of living near industrial sites and the gaps in knowledge around the true consequences of living and working in these areas. Top community concerns include heavy metal contamination, noise, explosions, and emotional stress. Interviewees felt ignored despite their ongoing efforts to seek government assistance and find effective solutions for their problems.

An examination of current laws and policies at the provincial and municipal levels indicate that there are currently few, if any, legal and policy mechanisms that enable residents to hold government and industry accountable for toxic contamination caused by industrial activities. Enforcement of existing environmental and health laws is also weak and there is a lack of publicly available enforcement data. At the federal level, there are some promising legal developments such as Bill S-5, which will update the *Canadian Environmental Protection Act, 1999* (CEPA), and Bill C-226 which will require the federal government to develop a legal framework to address environmental racism and environmental justice in Canada. However, there continues to be a need for significant legal reform at the provincial and mu-

nicipal levels to better empower Manitobans to address their environmental and health concerns.

Our analysis of the qualitative data collected during interviews with community members yielded several important insights. First, residents and workers in areas affected by industrial and contaminated sites are greatly impacted by pollution, both physically and mentally. Their ability to enjoy the outdoors is affected by contaminated soil in their gardens, unpleasant noise and odours, and garbage accumulation. Impacted community members also described a range of mental and physical health concerns. Secondly, residents correctly perceive that they have little or no meaningful role in environmental and land-use processes that impact the safety of their neighbourhoods. Third, the City of Winnipeg lacks a comprehensive plan to remediate and redevelop brownfield sites. In short, Winnipeggers who live near industrial and contaminated sites experience a range of negative impacts, feel neglected by the elected officials that are supposed to protect their interests, and suffer from environmental injustice.

The recommendations we developed based on our research and feedback from community members identify a range of potential options that could relieve the environmental injustices that are pervasive in our research area. We are calling for immediate attention to the environmental justice needs of Winnipeg's inner city and mature neighbourhoods and the adoption of an access to justice lens. There is a need for further research into the socioeconomic factors that make it more difficult for community members to address harmful pollution and the legal recognition of the environmental rights of Manitobans. We also need to fill knowledge gaps in public health and environmental health, including comprehensive blood testing for lead exposure and more ecological research about pollution impacts.

Other recommendations include the creation of independent bodies, greater data transparency for the public, and sufficient funding. Additionally, land-use planning should be modified to become more inclusive and geared toward improved sustainability, as described in international and federal law. Current zoning standards should be enforced or changed to prevent land-use conflicts between residential and industrial activities, and there should be a commitment to moving freight trains away from neighbourhoods. In general, enforcement should be consistent and enforcement data should be made publicly available.

In closing, the project team behind the HEHN project hopes that our work will enable meaningful and effective changes for the residents and workers who confided in us and shared their fears about nearby industrial

activities. We hope that our research, data, analysis, and recommendations will pave a clear path forward toward strong environmental protections and better public access to environmental justice. We need a better approach that includes effective enforcement, fewer negative impacts on residents and workers, and fewer land-use conflicts that impact the lives of nearby residents. We welcome other communities with similar problems to take inspiration from our work, so that they too may identify and change their experiences of environmental injustice. Together, we hope to amplify community voices in ongoing conversations about environmental justice and empower all Canadians to better protect themselves and their neighbourhoods.

Bibliography

Alexandruk, H. (2015, December 11). *Fire at a St.Boniface metal shredding facility Thursday afternoon—Winnipeg | Globalnews.ca*. Global News. https://globalnews.ca/news/2394843/fire-at-a-st-boniface-metal-shredding-facility-thursday-afternoon/

American Lung Association. (2021, February 12). *Volatile Organic Compounds*. https://www.lung.org/clean-air/at-home/indoor-air-pollutants/volatile-organic-compounds

Annable, K. (2018a, November 27). *Tests commissioned by CBC show lead contamination persists in North Point Douglas | CBC News*. CBC. https://www.cbc.ca/news/canada/manitoba/soil-lead-point-samples-1.4921442

Annable, K. (2018b, November 29). Unsafe lead levels remain at Weston School's sports field, gov't officials say winter minimizes risk. CBC, 1–7.

Annable, K. (2019, May 31). New test results show lead contamination in St. Boniface gardens up to 10 times recommended level. *CBC*, 1–7.

Annable, K., Nicholson, K., & Ct, A. (2018, September 13). *"Absolutely floored": Residents never told of lead contamination in Point Douglas soil because NDP sat on info*. 11.

BBC. (2022). *Location of inner city—Urban environments—National 4 Geography Revision*. BBC Bitesize. https://www.bbc.co.uk/bitesize/guides/zk32pv4/revision/3

Canada & Health Canada. (2013). *Final human health state of the science report on lead*. Health Canada. http://epe.lac-bac.gc.ca/100/201/301/weekly_checklist/2013/internet/w13-08-U-E.html/collections/collection_2013/sc-hc/H144-4-2012-eng.pdf

Cantor, A. G. (2019). *Screening for Elevated Blood Lead Levels in Children: A Systematic Review for the U.S. Preventive Services Task Force* (Vol. 174).

CBC News. (2012, November 20). *Fuel plant explosion rattled Winnipeg firefighters | CBC News*. CBC. https://www.cbc.ca/news/canada/manitoba/fuel-plant-explosion-rattled-winnipeg-firefighters-1.1285811

CBC News. (2015a, May 25). *Man critically injured in explosion, fire near storage container outside carpet store | CBC News*. CBC. https://www.cbc.ca/news/canada/manitoba/explosion-shakes-homes-in-st-boniface-critically-injures-1-1.3086305

CBC News. (2015b, December 11). *St. Boniface metal shredder fire raises safety concerns | CBC News*. CBC. https://www.cbc.ca/news/canada/manitoba/st-boniface-residents-raise-concerns-about-metal-shredder-hit-by-fire-1.3360174

Centers for Disease Control and Prevention. (2009). *Mercury Fact Sheet*.

Chauhan, S., Saini, N., & Yadav, V. (2014). Recent trends of volatile organic compounds in ambient air and its health impacts: A review. *International Journal For Technological Research In Engineering, 1*, 2347–4718.

City of Winnipeg. (2011). *OurWinnipeg: Complete Communities*. https://www.winnipeg.ca/interhom/cityhall/ourwinnipeg/pdf/completecommunities.pdf

Cooper, S. (2014, September 23). Recycling Auto Shredder Residue. *Waste Advantage Magazine*. https://wasteadvantagemag.com/recycling-auto-shredder-residue/

Cossu, R., & Williams, I. D. (2015). Urban mining: Concepts, terminology, challenges. *Waste Management, 45*, 1–3.

Dacey, E. (2017, August 18). Testing reveals toxic heavy metals in St. Boniface soil. *CBC*, 1–5.

De Sousa, C. (2001). Contaminated sites: The Canadian situation in an international context. *Journal of Environmental Management, 62*(2), 131–154. https://doi.org/10.1006/jema.2001.0431

Development, C. of W. P., Property &., & Winnipeg, C. of. (2019). *City of Winnipeg: Planning, Property & Development Department: Maps* [Zoning Map]. https://www.winnipeg.ca/ppd/maps_aerial.stm

Dickman, J. (2017, January). *Universal versus Targeted Screening*. Toxic-Free Future. https://toxicfreefuture.org/research/children-at-risk/universal-versus-targeted-screening/

Environmental Protection Agency. (2003). *Particle Pollution and Your Health*. Environmental Protection Agency.

French-Canadian Genealogist. (2021). *Saint-Boniface—The Foundation of French in the West* (pp. 1–13). The French-Canadian Genealogist.

Frew, N. (2019, December 17). Testing suggests 1 in 5 Winnipeg homes with lead pipes have unsafe levels of lead in drinking water. *CBC*, 1–6.

Froese, I. (2020, January 13). Trustee asks if province slow to fix contaminated soil at Winnipeg school because neighbourhood is poor. CBC, 1–5.

Gerdau Industries. (2012, February 15). *Automobile Shredder Residue—Materials Safety Data Sheet*. https://www2.gerdau.com/sites/default/files/downloadable_files/Automobile%20Shredder%20Residue%20_ASR_%20MSDS%20_NA_%202-15-12.pdf

Gerrard, J. (2020). *Lead and Crime in Manitoba*: (pp. 1–127). Manitoba Liberal Caucus. https://www.jongerrardmla.ca/wcm-docs/banners/Lead_and_Crime_in_Manitoba_Jon_Gerrard_Report_20201021112827.pdf

Gochfeld, M., & Burger, J. (2011). Disproportionate Exposures in Environmental Justice and Other Populations: The Importance of Outliers. *American Journal of Public Health*, 101(S1), S53–S63. https://doi.org/10.2105/AJPH.2011.300121

Goines, L., & Hagler, L. (2007). Noise Pollution: A Modem Plague. *Southern Medical Journal, 100*(3), 8.

Goldsborough, G., & Kramer, N. (2021, March 4). *Historic Sites of Manitoba: Weston School (1410 Logan Avenue, Winnipeg)*. http://www.mhs.mb.ca/docs/sites/westonschool.shtml

Gosine, A., & Teelucksingh, C. (2008). *Environmental Justice & Racism in Canada: An Introduction*. Emond Montgomery Publications Ltd.

Government of British Columbia. (2007). *Brownfields and Brownfield Redevelopment*. https://www2.gov.bc.ca/assets/gov/environment/air-land-water/site-remediation/docs/fact-sheets/fs38.pdf

Government of Canada. (2021). *Health Impacts of Air Pollution in Canada: Estimates of morbidity and premature mortality outcomes – 2021 Report*. Government of Canada.

Government of Manitoba. (2010). *Sampling Report: Surface Soil Lead Levels in Winnipeg, Manitoba: 2007 & 2008* (No. 2009–03; pp. 1–33). Government of Manitoba. https://s3.documentcloud.org/documents/4873722/Y2011.pdf

Government of Manitoba. (2016a). *Guide To The Contaminated Sites Remediation Act (CSRA)*. https://www.gov.mb.ca/sd/envprograms/contams/pdf/guidlines/guide_to_the_contaminated_sites_remediation_act_e.pdf

Government of Manitoba. (2016b). *Contaminated/Impacted Sites Program Frequently Asked Questions*. https://www.gov.mb.ca/sd/envprograms/contams/pdf/faq.pdf

Government of Manitoba. (2017, May 3). *The Manitoba Contaminated/Impacted Sites Program*. https://mpda.ca/wp-content/uploads/2017/05/2017-05-03-Manitoba-Contaminated-Impacted-Sites-Program.pdf

Government of Manitoba. (2018). *2018 Winnipeg Lead in Soil Survey*.

Government of Manitoba. (2021). *Lead Factsheet*. Government of Manitoba.

Government of Manitoba. (2022, October 14). *The Contaminated Sites Remediation Act*, SM 1996, c 40, C.C.S.M. c. C205. Queen's Printer of Manitoba.

Government of Manitoba. (2022, Oct 14). *Contaminated Sites Remediation Regulation*, MR 105/97. Queen's Printer of Manitoba.

Government of Manitoba (2022). Contaminated Sites Registry. https://www.gov.mb.ca/sd/waste_management/contaminated_sites/registry/index.html

Government of Manitoba. (2022, October 14). *C.C.S.M. c. C205*. Queen's Printer of Manitoba. https://web2.gov.mb.ca/laws/statutes/ccsm/c205e.php

Health Canada. (2019, December 5). *What we heard: Defining vulnerable populations* [Education and awareness]. https://www.canada.ca/en/health-canada/services/chemical-substances/consulting-future-chemicals-management-canada/what-we-heard-defining-vulnerable-populations.html

Heath Canada. (2021). *Sixth report on human biomonitoring.pdf* (No. 6; pp. 1–367). Health Canada.

Hildebrandt, S. (2021). *Residents 'frustrated' with inaction on soil contamination*. 1–5.

Intrinsik. (2019). *Assessment of Elevated Concentrations of Lead in Soil in Winnipeg Neighbourhoods* (p. 323). https://gov.mb.ca/asset_library/en/proactive/2019_2020/soil-report-summary-of-findings.pdf

Intrinsik Corp. (2019). *Intrinsik Report: Summary of Findings, Lead Concentrations in Winnipeg Soil.pdf.*

ISM. (2022). *Mesh and Micron Sizes Chart*. https://www.industrialspec.com/resources/mesh-and-micron-sizes/

Lane, H. M., Morello-Frosch, R., Marshall, J. D., & Apte, J. S. (2022). Historical Redlining Is Associated with Present-Day Air Pollution Disparities in U.S. Cities. *Environmental Science & Technology Letters*, acs.estlett.1c01012. https://doi.org/10.1021/acs.estlett.1c01012

MacLean, C. (2018, December 1). High lead levels in soil a lingering reminder of Point Douglas's industrial past. *CBC*, 7.

Manitoba Clean Environment Commission. (2020). *CEC Review of Legislation and Programs for Sites Impacted by Development* (pp. 1–154). Government of Canada.

McAlpine, J. (2020, February 7). *How Big is a Micron?* Benchmark. https://www.bench.com/setting-the-benchmark/how-big-is-a-micron

McMenamin, S. B., Hiller, S. P., Shigekawa, E., Melander, T., & Shimkhada, R. (2018). Universal Lead Screening Requirement: A California Case Study. *American Journal of Public Health, 108*(3), 355–357. https://doi.org/10.2105/AJPH.2017.304239

Miller, C. J., Runge-Morris, M., Cassidy-Bushrow, A. E., Straughen, J. K., Dittrich, T. M., Baker, T. R., Petriello, M. C., Mor, G., Ruden, D. M., O'Leary, B. F., Teimoori, S., Tummala, C. M., Heldman, S., Agarwal, M., Roth, K., Yang, Z., & Baker, B. B. (2020). A Review of Volatile Organic Compound Contamination in Post-Industrial Urban Centers: Reproductive Health Implications Using a Detroit Lens. *International Journal of Environmental Research and Public Health, 17*(23), 8755. https://doi.org/10.3390/ijerph17238755

O'Grady, K., & Perron, A. (2011). Reformulating Lead-Based Paint as a Problem in Canada. A*merican Journal of Public Health, 101*(Suppl 1), S176–S187. https://doi.org/10.2105/AJPH.2011.300185

Parsons, & Intrinsik Corp. (2022). *Lead in Soil Testing Program for Winnipeg, MB*.

Pindera, E., & Piché, G. (2021, September). Witness tip leads to arson suspect's arrest in Point Douglas warehouse blaze. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2021/09/29/witness-tip-leads-to-arson-suspects-arrest-in-point-douglas-warehouse-blaze

Pursaga, J. (2022, March 30). Warehouse to be demolished after a series of arsons and break-ins. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2022/03/30/business-owner-has-had-enough

Rollaston, K. (2022). New law, scrap yard bust take bite out of catalytic converter thefts. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2022/09/20/new-law-scrap-yard-bust-take-bite-out-of-catalytic-converter-thefts

Samuel, J. (2007). Public Advocacy and People-Centred Advocacy: Mobilising for Social Change. *Development in Practice, 17*(4/5), 615–621.

Sanders, C. (2020, January). Jan 2020: Widespread testing for lead not needed: province. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2020/01/30/widespread-testing-for-lead-not-needed-province

Skerritt, J. (2012, October). Oct 2012: Firefighters were close when exploding tanker shot fireball into the air. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2012/10/02/black-smoke-to-a-fireball

Slabbekoorn, H. (2019). Noise pollution. *Current Biology, 29*(19), R957–R960. https://doi.org/10.1016/j.cub.2019.07.018

Solademi, F. S. (2020). *Environmental Study of Mission Industrial Area and South St. Boniface Neighborhood, Winnipeg, Canada*. (p. 257). University of Manitoba.

Solademi, F., & Thompson, S. (2020). Spatial Analysis of Heavy Metal Emissions in Residential, Commercial and Industrial Areas Adjacent to a Scrap Metal Shredder in Winnipeg, Canada. *Journal of Geoscience and Environment Protection, 08*(05), 359–386. https://doi.org/10.4236/gep.2020.85023

Stansfeld, S. A., & Matheson, M. P. (2003). Noise pollution: Non-auditory effects on health. *British Medical Bulletin, 68*(1), 243–257. https://doi.org/10.1093/bmb/ldg033

Statistics Canada, & City of Winnipeg. (2016a). *Inkster East Neighbourhood Cluster*. https://winnipeg.ca/census/2016/Clusters/Inkster%20East%20Neighbourhood%20Cluster/Inkster%20East%20Neighbourhood%20Cluster.pdf

Statistics Canada, & City of Winnipeg. (2016b). *Point Douglas South Neighbourhood Cluster.* https://winnipeg.ca/census/2016/Clusters/Point%20Douglas%20South%20Neighbourhood%20Cluster/Point%20Douglas%20South%20Neighbourhood%20Cluster.pdf

Statistics Canada, & City of Winnipeg. (2016c). *St. Boniface East Neighbourhood Cluster.* https://winnipeg.ca/census/2016/Clusters/St.%20Boniface%20East%20Neighbourhood%20Cluster/St.%20Boniface%20East%20Neighbourhood%20Cluster.pdf

US EPA, O. (2022, January 4). *What are volatile organic compounds (VOCs)?* [Overviews and Factsheets]. https://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs

Vijayan, S. K., Kibria, M. A., & Bhattacharya, S. (2022). A Study on Pyrolysis of Pretreated Automotive Shredder Residue—Thermochemical Calculations and Experimental Work. *Frontiers in Sustainability, 3*. https://www.frontiersin.org/articles/10.3389/frsus.2022.811226

Waldman, B., & Piché, G. (2021, September). Sep 2021: Point Douglas warehouse fire draws large-scale response. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2021/09/28/point-douglas-warehouse-fire-draws-large-scale-response

Winnipeg Free Press staff. (2012, October). Oct 2012: Witnesses describe fireball, intense heat at massive St. Boniface fire. *Winnipeg Free Press*. https://www.winnipegfreepress.com/breakingnews/2012/10/01/flammable-chemicals-raise-fears-in-city-fire

Winnipeg Free Press staff. (2015). *May 2015: Man seriously hurt in explosion behind Archibald carpet store.* https://www.winnipegfreepress.com/breakingnews/2015/05/25/explosion-fire-at-carpet-store-on-archibald

Winnipeg, C. of. (2022). *Neighbourhood Cluster Profiles—2016 Census—Census—City of Winnipeg.* https://winnipeg.ca/census/2016/Clusters/default.asp

World Health Organization Regional Office for Europe. (2013). *Health Effects of Particulate Matter: Policy Implications for countries in Eastern Europe, Cacausus, and Central Asia*.

Wotton, D. L. (1982). *Lead Particulate Analysis In Air And Soil Of The City Of Winnipeg.* 72.

Xing, Y.-F., Xu, Y.-H., Shi, M.-H., & Lian, Y.-X. (2016). The impact of PM2.5 on the human respiratory system. *Journal of Thoracic Disease, 8*(1), E69–E74. https://doi.org/10.3978/j.issn.2072-1439.2016.01.19

Zhong, R., & Popovich, N. (2022, March 9). How Air Pollution Across America Reflects Racist Policy From the 1930s. *The New York Times*. https://www.nytimes.com/2022/03/09/climate/redlining-racism-air-pollution.html

References: Regulatory Overview

Primary Sources:

Manitoba:

The Animal Diseases Act RSM 1987, c A85, CCSM c A85

The Animal Liability Act SM 1998, c 8, CCSM c A95

The Auditor General Act, SM 2001, c 39, CCSM c A180

Contaminated Sites Remediation Regulation, Man Reg 105/97 [CSR Reg]

The City of Winnipeg Charter SM 2002 c 39

The Conservation Agreements Act SM 1997, c 59, CCSM c C173

The Contaminated Sites Remediation Act, SM 1996 c 40, CCSM c C205 [CSRA]

The Dangerous Goods Handling and Transportation Act RSM 1987 c D12

The Environment Act SM 1987–88 c 26, CCSM c E125

The Freedom of Information and Protection of Privacy Act, SM 1997, c 50, CCSM c F175

The Groundwater and Water Well Act SM 2012, c 27.

Hazardous Waste Regulation, M.R. 195/2015

The Health System Governance and Accountability Act SM 1996 c 53, CCSM c H26.5

The Heritage Resources Act SM 1985–86 c 10, CCSM c H39.1

Licensing Procedures Regulation, MR 163/88

The Municipal Act SM 1996 c 58, CCSM c M225

The Municipal By-law Enforcement Act SM 2013 c 47

The Ombudsman Act RSM 1987 c O45, CCSM c O45

PCB Storage Site Regulation, M.R. 474/88

Provincial Planning Regulation MR 81/2011, Part 4, s 6

The Personal Health Information Act SM 1997 c 51, CCSM c P33.5

The Planning Act, SM 2005 c 30, CCSM c P80, s 4(3)

The Planning Amendment and City of Winnipeg Charter Amendment Act enacted in 2021 SM 2021 c 36 (Bill 37, 3rd Session, 42nd Legislature)

The Public Health Act SM 1996 c 40; CCSM c C205

The Public Interest Disclosure (Whistleblower Protection) Act, SM 2006 c 35, CCSM C P217

Sagkeeng v Government of Manitoba et al, 2021 MBCA 88

The Water Protection Act SM 2005 c26

The Watershed Districts Act RSM 1987, c C175, CCSM c W95

The Workplace Safety and Health Act, RSM 1987 c W210, CCSM c W210

Water and Wastewater Facility Operators Regulation, MR 77/2003

Waste Management Facilities Regulation, MR 37/2016

The Waste Reduction and Prevention Act SM 1989–90, c 60.

City of Winnipeg:

City of Winnipeg, "311 City Services", online: https://www.winnipeg.ca/311-city-services

City of Winnipeg, "Combined Sewer Overflow (CS)) Master Plan", online: https://www.winnipeg.ca/waterandwaste/sewage/csoMasterPlan.stm

City of Winnipeg, "Complete Communities Direction Strategy 2.0" (2002), at 6, online: https://www.winnipeg.ca/interhom/cityhall/ourwinnipeg/Documents/Complete-Communities-Direction-Strategy-2.0.pdf

City of Winnipeg, *Downtown Winnipeg Zoning By-Law* No 100/2004 (23 June 2004).

City of Winnipeg, *Engage Winnipeg Policy*, Policy No CO-013 (September 26, 2019)

City of Winnipeg, "OurWinnipeg 2045 Development Plan" (2022), online: https://www.winnipeg.ca/interhom/cityhall/ourwinnipeg/Documents/Our-Winnipeg-2045.pdf

City of Winnipeg, *Neighbourhood Liveability By-law* No 1/2008 (1 November 2008)

City of Winnipeg, *Sewer By-Law* No. 106/2018 (13 December 2018)

City of Winnipeg, *Solid Waste By-Law* No. 110/2012 (18 July 2012)

City of Winnipeg, *Taking Title to Vacant and Derelict Buildings By-law* No 89/2010 (15 December 2010)

City of Winnipeg, *The City of Winnipeg Zoning By-law* No 200/06 (1 March 2008)

City of Winnipeg, *The Municipal By-law Enforcement Act (MBEA) Enabling By-law* No 59/2016 (18 May 2016)

City of Winnipeg, *Vacant and Derelict Buildings By-law* No. 35/2004 (19 May 2004)

City of Winnipeg, *Vacant Buildings By-Law* No. 79/2010 (21 July 2010)

Other:

Canada, *Canadian Environmental Protection Act*, 1999, SC 1999, c 33

Canada, *Food and Drugs Act*, RSC 1985, c F-27

Canada, *Impact Assessment Act*, SC 2019, c 28, s 1

Canada, *Perfluorooctane Sulfonate Virtual Elimination Act*, SC 2008, c 13

Bill C-28, *the Strengthening Environmental Protection for a Healthier Canada Act*, 43rd Parliament, 2nd Sess. (2020)

Bill C-226, *the National Strategy Respecting Environmental Racism and Environmental Justice Act*, 44th parl, 1st sess, (Elizabeth May)

Bill S-5, *the Strengthening Environmental Protection for a Healthier Canada Act*, 44th parl, 1st sess. (2021)

British Columbia, *Protection of Public Participation Act* SBC 2019 c 3

Ontario, *Courts of Justice Act*, RSO 1990 c C43, s 137.1

Ontario, *Environmental Bill of Rights*, S.O. 1993, c. 28

Quebec, *Charter of Human Rights and Freedoms*, CQLR, c. C-12

Quebec, *Environment Quality Act*, CQLR,c. Q-2

Northwest Territories, *Environmental Rights Act*, R.S.N.W.T., 1988, c. 83 (Supp)

Nunavut, *Environmental Rights Act*, RSNWT (Nu) 1988, c 83 (Supp)

Yukon, *Environment Act*, R.S.Y. 2002, c. 76

Secondary Sources:

Auditor General Manitoba, "Citizen Concerns", online: https://www.oag.mb.ca/audit-reports/citizen-concerns/

Canadian Environmental Law Association, "Submissions to the House of Commons Standing Committee on Environment and Sustainable on Bill S-5, An Act to Amend the Canadian Environmental Protection Act, 1999" (2022), at 38–40, online: https://cela.ca/wp-content/uploads/2022/10/Bill_S-5-HC_submissions_Sept_2022.pdf

Canadian Environmental Law Association, "Webinar 4: CEPA and Vulnerable Populations, Electromagnetic Frequency and Biotechnology" (October 26, 2022), online: https://cela.ca/wheres-the-protection-webinar-series-cepa/

Chalifour, Nathalie, "Environmental Justice and the Charter: Do environmental injustices infringe sections 7 and 15 of the Charter? (2015) 28 JELP 89

City of Winnipeg, online: https://www.winnipeg.ca/interhom/

City of Winnipeg, "Budget", online: https://winnipeg.ca/interhom/budget/default.stm

City of Winnipeg, "By-Law Investigations: Neighbourhood Liveability, Property Standards, & Licensing", online: https://data.winnipeg.ca/Neighbourhood-Liveability-Property-Standards-Licen/By-Law-Investigations/eye3-guud

City of Winnipeg, "Community By-law Enforcement Services", online: https://winnipeg.ca/cms/BLES/default.stm

City of Winnipeg, Decision Making Information System, online: https://clkapps.winnipeg.ca/DMIS/

City of Winnipeg, "FIPPA Request Responses", online: https://data.winnipeg.ca/Organizational-Support-Services/Fippa-Request-Responses/pfbi-rm6v

City of Winnipeg, "Local Area Plans", online: https://www.winnipeg.ca/ppd/CityPlanning/LocalAreaPlan/default.stm

The City of Winnipeg, "Multi-year budget: 2022 update", online: https://winnipeg.ca/interhom/Budget/2022-budget/default.stm

City of Winnipeg, Open Data Portal, online: https://data.winnipeg.ca/

City of Winnipeg, "Public Hearing Process", online: https://winnipeg.ca/Clerks/cityHall/PublicHearingProcess.stm

City of Winnipeg, "Zoning — An Overview", online: https://www.winnipeg.ca/ppd/zoning/default.stm

Clean Environment Commission, online: http://www.cecmanitoba.ca/cecm/

Collins, Lynda and Heather McLeod-Kilmurray, *The Canadian Law of Toxic Torts* (Thomson Reuters, 2014); David Grinlinton, "The Continuing Relevance of Common Law Property Rights and Remedies in Addressing Environmental Challenges" (2017) 62:3 McGill Law Journal 633

Collins, Lynda and Jasmine Van Schouwen, "Regulatory Negligence in Environmental Law", Chapter 14 in Allan Ingelson (ed), *Environment in the Courtroom* (University of Calgary Press, 2019), online: https://www.canlii.org/en/commentary/doc/2019CanLIIDocs4411

Department of Environment, Climate and Parks, "Contaminated Sites Registry", online: https://www.gov.mb.ca/sd/waste_management/contaminated_sites/registry/index.html

Department of Environment, Climate and Parks, "Environmental Compliance and Enforcement: Branch Contact Information", online: https://www.gov.mb.ca/sd/about/environmental-stewardship/environmental-compliance-and-enforcement/contacts.html [https://perma.cc/5B4T-S2HK]

Department of Environment, Climate and Parks, "Public Registry", online: https://www.gov.mb.ca/sd/eal/registries/index.html

Department of Environment, Climate and Parks, "Environmental File Search", online: https://www.gov.mb.ca/sd/permits_licenses_approvals/efs/index.html

Department of Health, Seniors and Active Living, "Contact a Manitoba Public Health Inspector", online: https://forms.gov.mb.ca/cmphi/

Doelle, Meinhard & John Sinclair (eds.), The Next Generation of Impact Assessment: A Critical Review of the Canadian Impact Assessment Act (Toronto, Canada: Irwin Law, 2021)

Durocher, André, *Environmental Class Actions in Canada*, 2nd ed. (Thomson Reuters, 2021)

Fast, Heather and Dr. Patricia Fitzpatrick, "Modernizing Environmental Protection in Manitoba: *The Environmental Rights Act* as One Component of Environmental Reform" (2017) 30.3 Journal of Environmental Law and Practice 267.

Fort Richmond & University Heights Neighbourhood Association, "Reporting By-law Infractions", online: http://www.neighbourhoodassociation.ca/residents/reporting-bylaw-infractions/

Government of Canada, "Impact Assessment Agency of Canada", online: https://www.canada.ca/en/impact-assessment-agency.html

Government of Canada, "Impact Assessment Process Overview", online: https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/impact-assessment-process-overview.html

Government of Canada, "LEGISinfo: C-226", online: https://www.parl.ca/LegisInfo/en/bill/44-1/c-226

Government of Canada, "LEGISinfo: S-5", online: https://www.parl.ca/LegisInfo/en/bill/44-1/S-5

Government of Canada, "Understanding CEPA", online: https://www.canada.ca/en/services/environment/pollution-waste-management/understanding-environmental-protection-act.html

Government of Manitoba, Access to Information (FIPPA), online: https://www.gov.mb.ca/openmb/infomb/fippa.html

Government of Manitoba, "Backgrounder: Capital Planning Region Regulation", online: https://news.gov.mb.ca/asset_library/BG-Capital_Planning_Region_Consultation-MR.pdf

Government of Manitoba, Budget 2022, online: https://www.gov.mb.ca/budget2022/index.html

Government of Manitoba, "EngageMB", online: https://engagemb.ca/

Government of Manitoba, EngageMB: Budget 2022, online: https://engagemb.ca/budget-2022

Government of Manitoba, EngageMB: Budget 2022 Public Meetings, online: https://engagemb.ca/budget-2022-public-meetings

Government of Manitoba, EngageMB: Budget 2022 Telephone Town Hall, online: https://engagemb.ca/budget-2022-telephone-town-hall

Government of Manitoba, "InfoMB", online: https://www.gov.mb.ca/openmb/infomb/index.html

Government of Manitoba, "Manitoba Regulatory Consultation Portal", online: https://reg.gov.mb.ca/home

Government of Manitoba, "Manitoba Regulatory Consultation Portal: Capital Planning Region Regulation", online: https://reg.gov.mb.ca/detail/7444876

Government of Manitoba, "The Public Health Act", online: https://www.gov.mb.ca/health/publichealth/act.html

Government of Manitoba, "Information Bulletin — Environmental Assessment and Licensing under The Environment Act" (2018), online: https://www.gov.mb.ca/sd/pubs/environmental-approvals/info_eal_2018_10_19.pdf

Impact Assessment Agency of Canada, "Canadian Impact Assessment Registry", online: https://iaac-aeic.gc.ca/050/evaluations/index

Impact Assessment Agency of Canada, "Vivian Sand Project", online: https://iaac-aeic.gc.ca/050/evaluations/proj/80974

Mallet, James S, *Municipal Powers, Land Use Planning, and the Environment: Understanding the Public's Role* (Environmental Law Centre of Albera, 2005), 2005 CanLIIDocs 209, 5–7, online: https://www.canlii.org/en/commentary/doc/2005CanLIIDocs209

Manitoba Clean Environment Commission, "Review of Legislation and Programs for Sites Impacted by Development" (2020), online: https://meia.mb.ca/wp-content/uploads/2021/09/CEC-Legislation-Review-Report.pdf

Manitoba Conservation and Climate, Annual Report 2020–2021, 38–45, online: https://www.gov.mb.ca/sd/pubs/annual-reports/annual_report_2020_21.pdf

Manitoba Health, "Health Protection Reports", online: https://www.manitoba.ca/health/publichealth/environmentalhealth/protection/report.html

Manitoba Health, "The Personal Health Information Act: Information for the Pubic", online: https://www.gov.mb.ca/health/phia/public.html

Manitoba Law Reform Commission, "Manitoba's Environmental Assessment and Licensing Regime under The Environment Act" (2015), online: http://www.manitobalawreform.ca/pubs/pdf/130-full_report.pdf

Manitoba Ombudsman, "Complaints", online: https://www.ombudsman.mb.ca/info/complaints.html

McCleod-Kilmurray, Heather, "Hollick and Environmental Class Actions: Putting the Substance into Class Action Procedure" (2002) 34 Ottawa L. Rev. 263

Potts, David A, and Erin Stoik, *Guide to the Law and Practice of Anti-SLAPP Proceedings* (Irwin Law, 2022).

Scott, Michaelin & Chris Tollefson, ''Strategic Lawsuits Against Public Participation: The British Columbia Experience" (2010) 19 RECIEL 45

Standing Committee on Environment and Sustainable Development, "Healthy Environment, Healthy Canadians, Healthy Economy: Strengthening the Canadian Environmental Protection Act, 1999" (2017), at 40–42 (Recommendation 36), online: https://www.ourcommons.ca/DocumentViewer/en/42-1/ENVI/report-8/

Stefaniuk, John, "The Planning Amendment and City of Winnipeg Charter Amendment Act — What's In, What's Out and What's Next?" (October 20, 2021)

Stuart, Barry "Environmental Sentencing: Making the Best of a Blunt Instrument", Chapter 23 in Allan Ingelson (ed), Environment in the Courtroom (University of Calgary Press, 2019), online: https://www.canlii.org/en/commentary/doc/2019CanLIIDocs4411

The Legislative Assembly of Manitoba, "Committees", online: https://www.gov.mb.ca/legislature/committees/index.html

The Legislative Assembly of Manitoba, "Petition Guidelines", online: https://www.gov.mb.ca/legislature/business/petition_guidelines.html

The Legislative Assembly of Manitoba, "Process for Passage of a Private Bill in the Legislative Assembly of Manitoba", online: https://www.gov.mb.ca/legislature/business/privatebillguidelines.pdf

Winnipeg Metropolitan Region, "About Plan 2050", online: https://20to50.ca/about-plan-2050/

Winnipeg Metropolitan Region, "Plan 20–50: draft version 2.0: Regional Growth Plan for the Winnipeg Metropolitan Region" (2021)

Winnipeg Regional Health Authority, "Community Health Assessment", online: https://wrha.mb.ca/research/community-health-assessment/

Winnipeg Regional Health Authority, Winnipeg Health Region Community Health Assessment (2019), online: https://wrha.mb.ca/files/cha-2019-full-report.pdf

Appendix 1

Other Types of Heavy Metal Contaminants Common in Industrial Areas

Arsenic

Arsenic is an element and metalloid substance that is found naturally in soils and anthropogenically in pesticides, smelting, many consumer products, and from fossil fuel combustion. Food, water, soil, house dust, and ambient air are all notable sources of human exposure to arsenic. Inhalation and oral intake are the most common access routes, and arsenic may accumulate in the blood, liver, spleen, kidneys, lungs, skin, bone, and muscle. Over time of long exposure, arsenic will also accumulate in hair and nails as well as skin (Heath Canada, 2021, p. 36).

Arsenic exposure causes a variety of symptoms in humans. In the short term, exposure will cause gastrointestinal discomfort and altered sensations in the muscles and extremities, such as burning or tingling. In the long term, arsenic exposure can weaken lung function and cause circulatory and blood pressure abnormalities. While some of the skin effects of arsenic are non-cancerous, drinking water contaminated with arsenic is associated with cancers of the skin and internal organs. Some research also suggests that exposure to arsenic during pregnancy may affect fetal and children's health, although more investigation is needed. The Canadian Environmental

Protection Act 1999 lists arsenic on the Schedule 1 of toxic substances and is subject to federal-level monitoring and controls (Heath Canada, 2021, p. 37).

Cadmium

Cadmium is an elemental metal that is released naturally from land weathering, forest fires, and volcanic emissions (Heath Canada, 2021, p. 69). Man-made sources of cadmium come from smelting, refining, fuel, and waste combustion. Cadmium is also used in the manufacture of nickel-cadmium batteries and metal building products (wires, sheets, pipes). Human exposure to cadmium comes from these industrial processes, cigarette smoke, food, water, and inhaling contaminated dust. Deterioration of galvanized steel pipes can leach cadmium into water. Absorption through food can be reduced through good nutrition and adequate dietary minerals (Heath Canada, 2021, p. 70).

Absorbed cadmium has many effects on the body. Inhalation is a significant pathway of absorbing cadmium, where it then settles into the kidneys and liver, with the kidneys being most vulnerable to cadmium saturation. Chronic inhalation can also increase the risk of emphysema in the lungs. Environment Canada, Health Canada, and the International Agency for Research on Cancer all suspect cadmium of being carcinogenic through inhalation. Inorganic cadmium is listed as a Schedule 1 substance under the Canadian Environmental Protection Act 1999 and is subject to controls and management (Heath Canada, 2021, p. 70).

Chromium

Chromium is a metal that has diverse oxidation states and associated features. For example, chromium trivalent (III) is an important nutrient while chromium hexavalent (VI) is toxic. The two states can shift from one to the other, depending on the environment. Chromium is primarily released into the environment via industrial means, with some natural sources from weathering and volcanic eruption. Smelting, refining, fossil fuel production and combustion, and industrial manufacturing are key sources of chromium. Chromium also is an important component of electrical and automobile manufacturing, which is important when considering the hazards of automobile shredders. A top source of exposure to chromium is living near industrial activity or a contaminated area (Heath Canada, 2021, p. 79).

Chromium can be absorbed into the body through ingestion, inhalation, and through the skin. Chromium (VI) is often reduced to chromium (III) and highly reactive molecules in the body. Chromium can be found in many parts of the body, including blood, the liver, lungs, spleen, and kidneys. Chromium may also be transferred to a fetus through the placenta or to an infant via breastmilk (Heath Canada, 2021, p. 79). The effects of chronic exposure to chromium have been researched in industrial workers. Respiratory effects may include nose bleeds, irritation of the nasal lining, bronchitis, pneumonia, respiratory tract cancers, skin ulcers, dermatitis, altered sperm cells, and DNA damage (Heath Canada, 2021, p. 80).

Mercury

Mercury is a metal that manifests in three forms: elemental, inorganic, and organic. Mercury's unusual elemental features have caused it to be used in many electronic devices, laboratory activities, some health products, and fluorescent lightbulbs. Elemental mercury flows at room temperature and is a traditional ingredient in glass thermometers (Centers for Disease Control and Prevention, 2009, p. 1). Manufacture and sale of products that use mercury in their functioning have been either banned or strictly controlled in Canada (Heath Canada, 2021, p. 83).

Inorganic mercury arises when the atoms bond with other elements to form salts and can be found naturally in the environment via volcanic activity and erosion (Centers for Disease Control and Prevention, 2009, p. 1) (Heath Canada, 2021, pp. 82–83). Organic mercury occurs in combination with carbon atoms, a process made possible through interactions with microorganisms in water or soil (Centers for Disease Control and Prevention, 2009, p. 1). Organic mercury is further distinguished into the forms of methylmercury and dimethylmercury (Heath Canada, 2021, p. 82) (Centers for Disease Control and Prevention, 2009, p. 1). There are a variety of man-made sources of inorganic mercury, such as mining, smelting, power plants, cement production, landfills, sewage, and wastewater (due to high excretion rates through fecal matter and urine) (Heath Canada, 2021, p. 82–83). Mercury is listed as a Schedule 1 toxic substance under the Canadian Environmental Protection Act, 1999 (Heath Canada, 2021, p. 84).

Because of the way inorganic mercury transforms into organic mercury and then methylmercury in the environment, it tends to accumulate in the ecosystem, including animals and humans. Methylmercury is mainly

absorbed in the digestive tract, where it then is spread throughout the body's tissues, especially the kidneys and through the blood-brain barrier (Heath Canada, 2021, p. 83). (Centers for Disease Control and Prevention, 2009, p. 1). Besides ingestion, mercury can enter the body through inhalation. A fetus can be exposed to mercury via the umbilical cord, and an infant can ingest mercury via breast milk (Heath Canada, 2021, p. 83). Elemental mercury is mainly absorbed through the lungs and has similar absorption patterns as methylmercury (Heath Canada, 2021, p. 83). Inorganic mercury exposure is common in individuals with dental fillings (Heath Canada, 2021, p. 83). Inorganic mercury also collects in body tissues but does not absorb as easily through the digestive tract, nor does it cross as easily into the placenta or through the blood-brain barrier (Heath Canada, 2021, p. 83).

Mercury has pervasive toxic effects in humans (F. S. Solademi, 2020, p. 141), primarily manifesting as neurological symptoms. Effects include dysfunction in vision, hearing, smell, taste, and touch. A person may feel tingling in their limbs, difficulty walking and speaking, memory loss, mood disturbance, and sleep problems (Heath Canada, 2021, p. 83). A fetus or child who has been exposed to mercury can experience problems with nervous system development, ranging from problems with fine motor function to learning difficulties (Heath Canada, 2021, p. 84) Fetuses exposed to mercury in utero are also at risk of developing cerebral palsy (Centers for Disease Control and Prevention, 2009, p. 2).

Appendix 2

Interview Questions

Questions For Community Members

For brevity, these questions do not include the ethics-mandated preamble

A. Industrial Developments and Brownfield Sites in Winnipeg:

1. What area(s) of the City of Winnipeg do you live and work in?
2. If you also work in this area, what is your role?
3. How long have you lived or worked in this area?
4. Are there any industrial developments or brownfield sites of concern nearby? Why are you concerned about these developments/sites? Here are some definitions of what we mean:

    - industrial development: a land-use development that involves a manufacturing or industrial process, and includes, but is not limited to, metal recycling, electric power production, food and food by-product processing, paper production, agri-chemical production, chemical processes, storage facilities, mining and excavation processes, and processes using mineral products.
    - brownfield site: a property where the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

B. Environmental and Health Impacts:

Documented Impacts

5. What, if any, of the following impacts have you experienced as a result of living, working, and/or doing other activities near industrial developments and brownfield sites in your area?

   - exposure to toxic substances — e.g. lead, asbestos
   - negative health impacts — e.g. cancer, asthma, developmental issues
   - exposure to dumped garbage, used needles, etc.
   - lack of access to healthy green spaces
   - noise related to industrial activity

Undocumented Impacts

6. Are there any other impacts you have experienced that were not included on the above list?
7. Of these impacts you have experienced, which are most concerning to you?
8. During the time you have been associated with this area, have you noticed a change over time?

C. Engaging with Government:

9. What does "access to environmental justice" mean to you? What role should the government play in achieving access to environmental justice?
10. Have you tried to get help with the concerns you discussed above from the City of Winnipeg or the Government of Manitoba? If so, how?

D. Policy and Legal Improvements:

11. What improvements should be made to political and legal process to improve your ability to address concerning health and environmental impacts in your area?

12. Do you have any other recommendations for change at the municipal or provincial levels?

Questions For Professionals

For brevity, these questions do not include the ethics-mandated preamble

A. Industrial Developments and Brownfield Sites in Winnipeg:

1. What area(s) of the City of Winnipeg do you work in?
2. What is your professional role in relation to this area?
3. How long have you worked in this area?
4. Are there any industrial developments or brownfield sites of concern nearby? Why are you concerned about these developments/sites? Here are some definitions of what we mean:
   - industrial development: a land-use development that involves a manufacturing or industrial process, and includes, but is not limited to, metal recycling, electric power production, food and food by-product processing, paper production, agri-chemical production, chemical processes, storage facilities, mining and excavation processes, and processes using mineral products.
   - brownfield site: a property where the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

B. Environmental and Health Impacts:

Documented Impacts

5. What, if any, of the following impacts have you experienced as a result of working, and/or doing other activities near industrial developments and brownfield sites in your area?
   - exposure to toxic substances — e.g. lead, asbestos
   - negative health impacts — e.g. cancer, asthma, developmental issues

- exposure to dumped garbage, used needles, etc.
- lack of access to healthy green spaces
- noise related to industrial activity

Undocumented Impacts

6. Are there any other impacts you have experienced that were not included on the above list?
7. Of these impacts you have experienced, which are most concerning to you?
8. During the time you have been associated with this area, have you noticed a change over time?

C. Engaging with Government:

9. What does "access to environmental justice" mean to you? What role should the government play in achieving access to environmental justice?
10. Have you tried to get help with the concerns you discussed above from the City of Winnipeg or the Government of Manitoba? If so, how?

D. Policy and Legal Improvements:

11. What improvements should be made to political and legal process to improve your ability to address concerning health and environmental impacts in your area?
12. Do you have any other recommendations for change at the municipal or provincial levels?

Appendix 3

Interviewee Quotes Describing Environmental Justice

"Obviously environmental justice means that the people who are impacted by problems in the environment have access to methods to improve that and one of the parts of that is that people have information. That information is available so that they can seek justice."

"Well, I think first of all that when we have been able to demonstrate to government officials (again at all levels and both elected and hired officials) some of the issues that are in plain sight, we should expect an appropriate response!"

"Well, access to environmental justice should be a fundamental right of all people. There is a balance that needs to be struck between industry and human/environmental health, but I think that if we know that there are negative consequences that can easily be resolved, especially ones that are already mandated by environmental law, then that is something that we need to really take into consideration. Access to environmental justice should not really be a question, it should be a right."

I think that — I mean our systems of dealing with the environment, pollution, climate change; all of these things need to be re-evaluated. We are always I think coming up against progress, against capitalism, against business and I mean, at the end of the day if you are not able to thrive in an area and be a healthy person, happy person, then what are we really doing... — like what

good is it to have a business if you are making the people around you sick. What good is it to be recycling or thinking about inducive materials if you are not doing it in a way that — or if you are doing in a way that — I mean studies have shown that it is detrimental to the health of residents of the area. I think that we need to be having an environment first approach to policy and I don't think that we should be weighing business versus environment equally."

"Well, to me it would mean that when you raise a concern that it's specifically responded to in a specific way, yes... we assume that that is what happening but it doesn't feel like that's what's happening. It's more a glossed over kind of response and generalization, not specific to that situation or minimized and that you hear, Oh, it's — if something is measured well it's low, it's low level. Well, low level? What does that really mean? And there are some things at low level that are actually pretty harmful. So, the environmental justice would mean that you are shown the data and how it's — and it is an ongoing thing not just one of, you raise it one time but an ongoing monitoring and they can tell you exactly what's coming off of the site. They generally don't seem to be able to do that."

"It means that I guess when an issue is brought up — I don't think — I guess when an issue is brought up it is taken seriously and the city and the province or whoever is responsible both take action and solve the problems."

"I don't know, they should play some type of role to hear the concerns of the surrounding area and not just basically — they should listen to people that are not involved what is going on and it impacts their lives in a negative way and they have nothing to do with it, but it impacts their lives, then they should listen... not just the workers, but also people in the surrounding area that live in the area. It is one thing working in the area, but there are people that live in the area, and that thing that happened 10 years ago people in the area had to be evacuated and they were living in the area. So, they are impacted more."

"The garbage that is in our community like people come they dump it illegally. It is like, oh it is Point Douglas, we will just go throw it there, and it can be very hard to get them to actually do anything, and I think environmental justice to me would be like we get the same level of attention as when someone from River Heights calls 311... I think that more rights should be given to residents who have concerns, because they are the ones — businesses parachute in for a workday and then they leave. We are there all day, all night, 24x7. We see what goes on and yet our concerns are almost always ignored... it would be nice to see legislation or some kind of process that supersedes that sort of consistent transition between governments that are little more amenable to working with people who are

you know more oppressed, if you want to use those words, with as opposed to protecting people at the top of the heap who already have all the advantages. It would be nice to see something entrenched in there, like the environmental racism that we talked about. It would really be nice to see people have a claim based on human rights violations. You violated my right to clean air, you violated my right to clean water, you violated my right to live in peace and quiet."

"I think environmental justice to me would mean that everybody is given a fair playing field when they pick an area to live in, that there should be environmental testing and impacts done in these neighbourhoods and if tests are coming up where there is concerning results, that there should be justice for the citizens..."

"What is needed to improve — like I don't know what needs to be done internally, but I think I just I guess want to be heard and I don't know what avenue I need to take to. I am not a very loud person, I guess I don't want going out there broadcasting but I just I don't really have a avenue where I feel like I am getting heard, or that is like someone is actually responding."

"Environmental justice to me means that somebody is willing to be held accountable or someone is going to be held accountable for what they have done... social justice is the way to, I guess to hold somebody accountable and making sure that they are making decisions. So the way that the government should do it is make creating policies that are focusing right on the environment..."

"So, to me environmental justice means that we live in a way that can contribute to our health and well being. We live in ways that we know are determinants of health, we create systems that support health. Which means we address how certain populations experience more poverty and discrimination, and how that affects health. We understand how oppression [works] as a determinant of health. This means we also live in environments that build support for people in their community to have agency."

"I think it is creating an environment in the entire sense of the world in the sense that the lived-in space of the plants and the spaces you are walking around, but also just the senses that you encounter while doing that too...like having an auditory environment that is pleasant and enjoyable, same thing with smells and stuff not having uncomfortable smells wafting about all the time, but yes like environmental justice was the phrase...yes, creating a space like a living environment where people can, not just exist but thrive, where it encourages them to really attain all that they are capable of and it doesn't put roadblocks in their way..."

Appendix 4

Bill S-5 Senate Submission

April 26, 2022

Standing Committee on Energy, the Environment and Natural Resources
The Senate of Canada
Ottawa, Ontario
Canada, K1A 0A4
enev@sen.parl.gc.ca

The Honourable Steven Guilbeault
Minister of Environment and Climate Change
Steven.Guilbeault@parl.gc.ca

Re: Proposed Amendments to Bill S-5, Strengthening Environmental Protection for a Healthier Canada Act

In this submission, the Manitoba Eco-Network (MbEN), with the support of the local organizations indicated below, recommends that the Senate Standing Committee on Energy, the Environment and Natural Resources amend the current text of Bill S-5, the *Strengthening Environmental Protection for a Healthier Canada Act* before its third reading. In particular, MbEN recommends the Committee adopt the reforms to Bill S-5 proposed by the Canadian Environmental Law Association (CELA).[197] Bill S-5 is an important

opportunity to improve Manitobans' access to environmental justice and help fill legal gaps in our provincial regime regulating the use and clean-up of toxic substances. However, in its current form, it appears that Bill S-5 will do little to improve meaningful public involvement in the regulation of toxic substances and better protect the health of Manitobans.

Seeking Environmental Justice in Manitoba

Since 1988, Manitoba Eco-Network (MbEN) has promoted positive environmental action by supporting people and groups in our community. MbEN's programming focuses on policy advocacy, engagement in consultation processes and developing capacity building tools that benefit the environmental non-profit sector and our member groups. We are a public interest environmental organization seeking to promote and facilitate good environmental governance and the protection of Manitoba's environment for the benefit of current and future generations.

In the past few years, MbEN has engaged with a range of individuals and organizations in Manitoba who have serious concerns about toxic substance contamination in the areas they live and work in. This led to the development of our *Healthy Environment, Healthy Neighbourhood* project (HEHN), which is aimed at increasing access to environmental justice for citizens in the City of Winnipeg, with a focus on the inner-city and low-income and marginalized individuals. This project was created after community groups from areas affected by industrial pollution reached out to MbEN for help. Their efforts to secure meaningful remedies for the harms to their communities have been unsuccessful. In response, MbEN designed this project to document community members' experiences, explore legal remedies, and identify gaps in the legal framework.

One of the main problems we have identified so far is the very limited role of the public in the identification, investigation, monitoring, and clean-up of toxic contamination in the areas where they live and work. This has created a situation where Manitobans have little to no legal power to trigger the investigation and clean-up of toxic contamination in their neighbourhoods, participate in monitoring, follow-up or enforcement activities and initiate legal proceedings in situations where industry or government has not taken appropriate action. Manitobans also lack access to information about contaminated sites, ongoing investigations, monitoring and follow-up data (air, water, soil), and related public health data, among other things.

There are many examples of the struggles endured by residents in our study areas of St. Boniface, Point Douglas, and the Weston School area as

they have attempted to protect themselves and their families from toxic contamination. For example, soil, air, water, and snow sampling for lead has been conducted multiple times in Winnipeg since the 1970s, and more recently since 2016.[198] Tests repeatedly show that the levels of lead and other toxic substances are elevated well beyond acceptable limits. In some cases, the levels of certain contaminants like lead have been found to be ten to fifteen times the recommended limit. Lead in drinking water and household paint are also serious problems in Winnipeg. Homes built before 1990 are likely to have lead water pipes or lead solder in water pipes.[199] Vulnerable populations who reside in such older housing, especially children, are at serious risk from exposure to these toxic chemicals found in their homes and surrounding communities.[200]

Despite a range of evidence showing elevated levels of toxic substances in their communities, community organizations like the South St. Boniface Residents' Association and the Point Douglas Residents' Committee have struggled to find meaningful solutions that allow them to protect their health and surrounding environment. Inadequate access to government reports and test results, delayed or lack of notification of contamination, and ineffective government enforcement of legislative requirements have created numerous barriers preventing access to environmental justice.[201] Residents in these areas are frustrated and have expressed grief that they can no longer undertake activities, like growing vegetables in their backyard, that improve their lives and help achieve food sovereignty and security in their neighbourhoods.

Our work in the community has made it clear that Manitobans need legal reforms at the federal and provincial levels that improve their access to environmental justice, which requires:

- a recognized and meaningful role for the public in legal and policy processes related to the regulation of toxic substances and contaminated, remediated and brownfield sites;
- public access to detailed information such as investigation reports, medical information about potential health impacts, follow-up and monitoring data (air, soil, water), and compliance and enforcement activities;
- effective government regulation of a broader range of industrial activities, including industrial metal shredders;
- stricter regulation of toxic, persistent and bio-accumulative substances (e.g. lead, arsenic, cadmium, nickel, mercury, aluminum)

- legal standing for citizens so they can better protect their legal rights and hold industry and government accountable for actions that threaten their health and surrounding environment;
- stronger environmental enforcement mechanisms.

Reform of CEPA and Bill S-5

MbEN was pleased to see the introduction of Bill C-28, the *Strengthening Environmental Protection for a Healthier Canada Act* in Fall 2021 and its re-introduction as Bill S-5 in February 2022. We were hopeful the proposed amendments to the *Canadian Environmental Protection Act, 1999* (CEPA) would strengthen environmental protections for all Canadians, including Manitobans. However, in its current form, it appears that Bill S-5 will do little to improve meaningful public involvement in the regulation of toxic substances and better protect the health of Manitobans. There is a need for significant reform of Bill S-5 to ensure CEPA remains an effective legislative mechanism that protects Canadians from the health and environmental consequences of toxic contamination. There is also a need to better empower Canadians to protect their environmental rights. MbEN fully endorses the amendments to Bill S-5 proposed by CELA and recommends the Committee adopt them all. Some examples are provided below.

Definitions:

MbEN agrees with CELA that the addition of more defined terms, such as "cumulative effects", "environmental justice principle", and "meaningful involvement" would help clarify the scope of their meaning and application within the CEPA regulatory framework. We also support the expanded definition of "vulnerable population" proposed by CELA, which better acknowledges the systemic environmental racism associated with toxic substances and contaminated sites.

The Right to a Healthy Environment:

There is a need for significant amendment to Bill S-5, as proposed by CELA, to ensure recognition of the right to a healthy environment in CEPA is effective and enforceable. This includes removing any language regarding the balancing of the right with economic or other factors and removing the barriers to the existing remedy available under s 22 of CEPA which have so far prevented its use. All Canadians, including Manitobans, need to be better empowered

to protect their health and their environment from toxic contamination, which includes the ability to initiate legal proceedings against industry or government when their actions (or inaction) violate our environmental rights. It is also important that these sections enabling Canadians to protect their rights and engage in legal processes include corresponding funding opportunities to reduce financial barriers to participation.

Regulated Toxic Substances List:

MbEN agrees with CELA that the proposed changes to Schedule 1 of CEPA in Bill S-5 should be repealed. Changing the title of Schedule 1 will create legal uncertainty and risks the constitutionality of the Act. Dividing the Schedule into two parts will also result in toxic chemicals of concern to the community members we have been working with, such as lead, cadmium, arsenic, and nickel, no longer being subject to prohibition. All substances currently included in Schedule 1 should remain eligible for all risk management actions (e.g. bans, substitution, etc.).

Pollution Hot Spots Regulations:

Bill S-5 repeals ss 330(3) and (3.1) of CEPA which is supposed to facilitate the development geographically targeted regulations to help with pollution "hot spots". While it is very important that CEPA is strengthened to better address pollution hot spots, such as those identified by MbEN in downtown and mature neighborhoods in Winnipeg, MbEN feels the changes to Bill S-5 proposed by CELA that would instead retain ss 330(3) and (3.1) and extend the authority to make such regulations to other sections of the Act, would better allow regulators to address pollution hot spots across Canada.

Ambient Air Quality Standards:

There is a need to better protect Canadians from ambient air quality problems. However, despite the recommendations of the 2017 Standing Committee on Environment and Sustainable Development in its review of CEPA, Bill S-5 does not contain any proposed reforms to address this problem. MbEN has engaged with many community members in Manitoba concerned with the impact of industrial activity on the air quality in their neighborhoods and feel that legally binding and enforceable ambient air quality standards would help Manitobans to better hold industry accountable. We therefore support CELA's proposed additions to Bill S-5 which would require the creation of legally binding and enforceable ambient air quality standards.

Bill S-5 is an important opportunity to improve Manitobans' access to environmental justice and help fill legal gaps in our provincial regime regulating the use and clean-up of toxic substances. Through the HEHN project, MbEN's work with community groups has consistently shown that residents and community members have few effective tools to protect their physical, emotional, and community health from harmful and long-lasting pollution. Above all, the purpose of Bill S-5 and CEPA should be to protect the environment and people from harm. We ask that you reform Bill S-5 to improve environmental safety and access to environmental justice.

MbEN appreciates your consideration of our comments and recommendations for reform of Bill S-5. We welcome future opportunities to engage with members of the Senate to ensure the highest level of environmental protection measures are enacted and the right to a healthy environmental is meaningfully recognized to help us protect Manitoba's environment for the benefit of current and future generations.

Sincerely,
Glen Koroluk, Executive Director, MbEN

With the support of the Advisory Committee of the HEHN Project:

Alexandra Caporale	Resource Manager and Director of the HEHN Project, MbEN
Heather Fast	Policy Advocacy Director, MbEN
Catherine Flynn	Point Douglas Residents Committee
Greg Selinger	Former Premier of Manitoba, Community Facilitator
Guy Jourdain	Legal Consultant
Jennifer Chen	Winnipeg School Division Trustee
Dr. Jon Gerrard	MLA River Heights
Lea Mutch	Manitoba Public Health Association
Malaya Marcelino	MLA for Notre Dame
Michelle Berger	Resident of South St. Boniface, community advocate
Sarah Cooper	Downtown Resident, Assistant Professor, University of Manitoba (City Planning)
Shirley Thompson	Associate Professor, University of Manitoba (Natural Resources Institute)

Appendix 5

Bill C-226 Advocacy Letter

May 9, 2022

The Honourable Steven Guilbeault
Minister of Environment and Climate Change
Steven.Guilbeault@parl.gc.ca

and

Manitoba's Members of Parliament

Re: Support for Bill C-226, The National Strategy Respecting Environmental Racism and Environmental Justice Act

The Manitoba Eco-Network (MbEN) urges you to vote in support of Bill C-226, the *National Strategy Respecting Environmental Racism and Environmental Justice Act* when it receives its second reading in the House of Commons. If passed, this legislation will allow policy makers to better address ongoing environmental racism in Canada and improve access to environmental justice for all Canadians.

Seeking Environmental Justice in Manitoba

Since 1988, Manitoba Eco-Network (MbEN) has promoted positive environmental action by supporting people and groups in our community. MbEN's programming focuses on policy advocacy, engagement in consultation processes and developing capacity building tools that benefit the environmental non-profit sector and our member groups. We are a public interest environmental organization seeking to promote and facilitate good environmental governance and the protection of Manitoba's environment for the benefit of current and future generations.

In recent years, we have been seeking to better address the ongoing environmental racism occurring in Manitoba and improve public access to environmental justice. To MbEN, environmental racism and environmental justice are important concepts that we recognize can mean different things to different people depending on where they live and work, and the types of interactions they have had with the corporations and government decision-makers involved in environmental governance processes and natural resource developments.

Environmental racism acknowledges the fact that Indigenous, Black and other racialized communities are disproportionately burdened with exposure to toxic substances and other environmental hazards due to policies and practices that have forced them to live in proximity to polluting industries and natural resource developments.[202] These health and environmental hazards have been linked to high rates of cancer, reproductive diseases, respiratory illnesses, and other health problems in these communities. In Manitoba, examples of environmental racism include the development and operation of hydroelectricity and water control infrastructure projects and the disproportionate exposure of Indigenous, Black, and other racialized communities to toxic substances in inner-city and mature neighbourhoods in the City of Winnipeg.

The environmental justice movement emerged in Canada in response to the problems caused by systemic environmental racism. At its core, environmental justice is focused on equity, empowerment, and meaningful policy and legal change. As a member of this movement, MbEN has been advocating for improved public access to environmental justice through our policy advocacy activities and our *Healthy Environment, Healthy Neighbourhood* (HEHN) project, which is focused on the inner-city and low-income and marginalized individuals in the City of Winnipeg. This project was created after community groups from areas affected by industrial pollution

reached out to MbEN for help. Their efforts to secure meaningful remedies for the harms to their communities have been unsuccessful. In response, MbEN designed this project to document community members' experiences, explore legal remedies, and identify gaps in the legal framework. Areas for the HEHN project encompass communities that are marginalized in some way, typically by Indigenous identity, newcomer status, and being low-income. Marginalized communities are more vulnerable to exposure to harmful pollution and may also have less power to demand that the pollution be cleaned up.

There are many examples of the struggles endured by residents as they have attempted to protect themselves and their families from toxic contamination. For example, soil, air, water, and snow sampling for lead and other toxics has been conducted multiple times in Winnipeg since the 1970s, and more recently since 2016.[203] Tests repeatedly show that the levels of lead and other toxic substances are elevated well beyond acceptable limits. In some cases, the levels of certain contaminants have been found to be ten to fifteen times the recommended limit. Lead in drinking water and household paint are also serious problems in Winnipeg. Homes built before the mid-1950s are likely to have lead water pipes and homes built before 1990 will have lead solder to connect water pipes.[204] Vulnerable populations who reside in such older housing, especially children, are at serious risk from exposure to these toxic chemicals found in their homes and surrounding communities.[205]

Despite a range of evidence showing elevated levels of toxic substances in their communities, community neighbourhood organizations have struggled to find meaningful solutions that allow them to protect their health and surrounding environment. Inadequate access to government reports and test results, delayed or lack of notification of contamination, and ineffective government enforcement of legislative requirements have created numerous barriers preventing access to environmental justice.[206] Residents in these areas are frustrated and have expressed grief that they can no longer undertake activities, like growing vegetables in their backyard, that improve their lives and help achieve food sovereignty and security in their neighbourhoods.

Our work in the community has made it clear that Manitobans need legal reforms at the federal and provincial levels that improve their access to environmental justice, which requires:

- a recognized and meaningful role for the public and community organizations in legal and policy processes related to the regulation of toxic substances, contaminated, remediated and brownfield sites,

and industrial practices with potential to cause negative health or environmental impacts;

- public access to detailed information such as investigation reports, medical information about potential health impacts, follow-up and monitoring data (air, soil, water), and compliance and enforcement activities;
- funding and compensation to document the impacts of toxic, persistent and bio-accumulative substances (e.g. lead, arsenic, cadmium, nickel, mercury, aluminum) and help those facing negative health consequences as a result of exposure.
- legal standing for citizens so they can better protect their legal rights and hold industry and government accountable for actions that threaten their health and surrounding environment; and
- stronger environmental enforcement mechanisms.

The Importance of Bill C-226

There is an urgent need to address the decades of environmental racism that have disproportionately burdened Indigenous, Black, and other racialized communities with exposure to toxic substances, a range of negative health impacts, and environmental destruction. While more substantive legal change will be required in the future to adequately address this issue, Bill C-226 is an important first step for the Government of Canada.

Bill C-226 will commit the Minister of Environment and Climate Change to creating a legal framework to examine how race, socio-economic status and living in areas near environmental hazards intersect to shape health outcomes in these communities. This framework must include measures to:

- Collect data and statistics relating to the location of environmental hazards and negative health outcomes in communities that have been affected by environmental racism;
- Assess the administration and enforcement of environmental laws in each province; and
- Address environmental racism in relation to possible policy and law reforms, involvement of community groups in policy-making,

funding and compensation for affected communities, and access of affected communities to clean air and water.

Bill C-226 is an important legal development that centres race in environmental policy-making and decision-making, since the communities that are disproportionately harmed are most often Indigenous, Black or otherwise racialized. The collection and public availability of more data documenting environmental hazards and health outcomes will allow everyone, including provincial and municipal governments, to use it to better inform the decisions that impact marginalized communities. This Bill has the potential to improve access to environmental justice for all Canadians, including Manitobans, and should receive support from all political parties.

MbEN appreciates your consideration of our comments and recommendation to support Bill C-226 as it progresses through the House of Commons. We welcome future opportunities to engage with Manitoba's Members of Parliament and the Minister of Environment and Climate Change to ensure the highest level of environmental protection measures are enacted and the right to a healthy environmental is meaningfully recognized to help us protect Manitoba's environment for the benefit of current and future generations.

Sincerely,

Heather Fast B.A., J.D., LL.M., Policy Advocacy Director
Alexandra Caporale, HEHN Project Coordinator

Endnotes

1 "Visible minority refers to whether a person is a visible minority or not, as defined by the *Employment Equity Act*. The *Employment Equity Act* defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour." The main groups designated as visible minorities are South Asian, Chinese, Black, Filipino, Arab, Latin American, Southeast Asian, West Asian, Korean and Japanese." https://www12.statcan.gc.ca/census-recensement/2021/ref/98-500/006/98-500-x2021006-eng.cfm

2 Please note that this section of the report uses a different style of referencing source material than other sections. This section is intended to provide legal information that can be utilized by those seeking regulatory change, and therefore uses a citation style that aligns with legal academic publications so source material can be more effectively identified and used for legal purposes (e.g., specific sections of relevant laws and regulations).

3 *The Contaminated Sites Remediation Act*, SM 1996 c 40, CCSM c C205 [CSRA]; *Contaminated Sites Remediation Regulation*, Man Reg 105/97 [CSR Reg]; Manitoba Clean Environment Commission, "Review of Legislation and Programs for Sites Impacted by Development" (2020), online: https://meia.mb.ca/wp-content/uploads/2021/09/CEC-Legislation-Review-Report.pdf [CEC 2020]

4 CSRA, ibid, s 1(1), CSR Reg, s 1.1(2).

5 CSRA, ibid, s 2.

6 CEC 2020, supra note 3, at 83.

7 CSRA, supra note 3, s 3.1.

8 CRSA, ibid, s 2.

9 CRSA, ibid, s 2.

10 CSRA, ibid, s 4(1).

11 CSRA, ibid, s 54.

12 CSRA, ibid, s 54–55(1).

13 Department of Environment, Climate and Parks, "Contaminated Sites Registry", online: https://www.gov.mb.ca/sd/waste_management/contaminated_sites/registry/index.html

14 CSR Reg, supra note 3, s 2–7.

15 See for example, *The Dangerous Goods Handling and Transportation Act* RSM 1987 c D12, *Hazardous Waste Regulation*, M.R. 195/2015; *PCB Storage Site Regulation*, M.R. 474/88; *The Water Protection Act* SM 2005 c26, *The Groundwater and Water Well Act* SM 2012, c 27.

16 *The Public Health Act* SM 1996 c 40; CCSM c C205; Government of Manitoba, "The Public Health Act", online: https://www.gov.mb.ca/health/publichealth/act.html.

17 Department of Health, Seniors and Active Living, "Contact a Manitoba Public Health Inspector", online: https://forms.gov.mb.ca/cmphi/; Manitoba Health, "Health Protection Reports", online: https://www.manitoba.ca/health/publichealth/environmentalhealth/protection/report.html

18 Winnipeg Regional Health Authority, "Community Health Assessment", online: https://wrha.mb.ca/research/community-health-assessment/; Winnipeg Regional Health Authority, *Winnipeg Health Region Community Health Assessment* (2019), online: https://wrha.mb.ca/files/cha-2019-full-report.pdf. See also: *The Health System Governance and Accountability Act* SM 1996 c 53, CCSM c H26.5.

19 *The Personal Health Information Act* SM 1997 c 51, CCSM c P33.5; Manitoba Health, "The Personal Health Information Act: Information for the Pubic", online: https://www.gov.mb.ca/health/phia/public.html

20 *The Workplace Safety and Health Act*, RSM 1987 c W210, CCSM c W210.

21 *The Environment Act* SM 1987–88 c 26, CCSM c E125; Manitoba Law Reform Commission, "Manitoba's Environmental Assessment and Licensing Regime under The Environment Act" (2015), online: http://www.manitobalawreform.ca/pubs/pdf/130-full_report.pdf [MLRC 2015]; Government of Manitoba, "Information Bulletin – Environmental Assessment and Licensing under The Environment Act" (2018), online: https://www.gov.mb.ca/sd/pubs/environmental-approvals/info_eal_2018_10_19.pdf.

22 *Licensing Procedures Regulation*, MR 163/88.

23 Department of Environment, Climate and Parks, "Public Registry", online: https://www.gov.mb.ca/sd/eal/registries/index.html

24 *The Planning Act*, SM 2005 c 30, CCSM c P80, s 4(3).

25 *The Municipal Act* SM 1996 c 58, CCSM c M225; *The City of Winnipeg Charter* SM 2002 c 39.

26 *The Planning Act*, supra note 24.

27 See for example, *The Environment Act*, supra note 21, s 3(2), 20–24; CSRA, supra note 3, s 54, 63–64.

28 Barry Stuart, "Environmental Sentencing: Making the Best of a Blunt Instrument", Chapter 23 in Allan Ingelson (ed), *Environment in the Courtroom* (University of Calgary Press, 2019), online: https://www.canlii.org/en/commentary/doc/2019CanLIIDocs4411

29 CSRA, supra note 3, s 53(3); *The Environment Act*, supra note 21, s 33(1).

30 CSRA, ibid, s 53(4); *The Environment Act*, ibid, s 33(2).

31 *The Public Interest Disclosure (Whistleblower Protection) Act*, SM 2006 c 35, CCSM C P217.

32 CSRA, supra note 3, s 53(3)-(4); *The Environment Act*, supra note 21, s 33(1)–(2).

33 Manitoba Conservation and Climate, Annual Report 2020–2021, 38–45, online: https://www.gov.mb.ca/sd/pubs/annual-reports/annual_report_2020_21.pdf

34 Lynda Collins and Heather McLeod-Kilmurray, *The Canadian Law of Toxic Torts* (Thomson Reuters, 2014); David Grinlinton, "The Continuing Relevance of Common Law Property Rights and Remedies in Addressing Environmental Challenges" (2017) 62:3 McGill Law Journal 633; André Durocher, *Environmental Class Actions in Canada*, 2nd ed. (Thomson Reuters, 2021); Heather McCleod-Kilmurray, "Hollick and Environmental Class Actions: Putting the Substance into Class Action Procedure" (2002) 34 Ottawa L. Rev. 263. See also: Nathalie Chalifour, "Environmental Justice and the Charter: Do environmental injustices infringe sections 7 and 15 of the Charter? (2015) 28 JELP 89; Lynda Collins and Jasmine Van Schouwen, "Regulatory Negligence in Environmental Law", Chapter 14 in Allan Ingelson (ed), *Environment in the Courtroom* (University of Calgary Press, 2019), online: https://www.canlii.org/en/commentary/doc/2019CanLIIDocs4411

35 *The Ombudsman Act* RSM 1987 c O45, CCSM c O45; Manitoba Ombudsman, "Complaints", online: https://www.ombudsman.mb.ca/info/complaints.html; *The Auditor General Act*, SM 2001, c 39, CCSM c A180; Auditor General Manitoba, "Citizen Concerns", online: https://www.oag.mb.ca/audit-reports/citizen-concerns/

36 Department of Environment, Climate and Parks, supra note 13.

37 Department of Environment, Climate and Parks, supra note 23.

38 Government of Manitoba, "InfoMB", online: https://www.gov.mb.ca/openmb/infomb/index.html

39 Department of Environment, Climate and Parks, "Environmental File Search", online: https://www.gov.mb.ca/sd/permits_licenses_approvals/efs/index.html

40 *The Freedom of Information and Protection of Privacy Act*, SM 1997, c 50, CCSM c F175; Government of Manitoba, Access to Information (FIPPA), online: https://www.gov.mb.ca/openmb/infomb/fippa.html

41 Heather Fast and Dr. Patricia Fitzpatrick, "Modernizing Environmental Protection in Manitoba: *The Environmental Rights Act* as One Component of Environmental Reform" (2017) 30.3 Journal of Environmental Law and Practice 267. [Fast & Fitzpatrick].

42 Ontario, *Environmental Bill of Rights*, S.O. 1993, c. 28; Quebec, *Charter of Human Rights and Freedoms*, CQLR, c. C-12; Quebec, *Environment Quality Act*, CQLR,c. Q-2; Yukon, *Environment Act*, R.S.Y. 2002, c. 76; Northwest Territories, *Environmental Rights Act*, R.S.N.W.T., 1988, c. 83 (Supp); *Environmental Rights Act*, RSNWT (Nu) 1988, c 83 (Supp).

43 Fast & Fitzpatrick, supra note 41, at 303.

44 Manitoba, Bill 20, *The Environmental Rights Act*, 2016, 5th Sess, 40th Leg, 2016 (Nevakshanoff))

45 British Columbia, *Protection of Public Participation Act* SBC 2019 c 3; Ontario, *Protection of Public Participation Act, 2015*, SO 2015 c 23; Ontario, *Courts of Justice Act*, RSO 1990 c C43, s 137.1; Michaelin Scott & Chris Tollefson, "Strategic Lawsuits Against Public Participation: The British Columbia Experience" (2010) 19 RECIEL 45; David A Potts and Erin Stoik, *Guide to the Law and Practice of Anti-SLAPP Proceedings* (Irwin Law, 2022).

46 Ontario 2015, ibid.

47 British Columbia 2019, supra note 45.

48 CSRA, supra note 3, s 16(1).

49 CSRA, ibid, s 16(2), 45(5); Clean Environment Commission, online: http://www.cecmanitoba.ca/cecm/

50 Department of Environment, Climate and Parks, "Environmental Compliance and Enforcement: Branch Contact Information", online: https://www.gov.mb.ca/sd/about/environmental-stewardship/environmental-compliance-and-enforcement/contacts.html [https://perma.cc/5B4T-S2HK].

51 MLRC 2015, supra note 21, 47–57.

52 MLRC, ibid, p 84–86.

53 S*agkeeng v Government of Manitoba et al*, 2021 MBCA 88, online: https://www.canlii.org/en/mb/mbca/doc/2021/2021mbca88/2021mbca88.html

54 Government of Manitoba, EngageMB, online: https://engagemb.ca/; Government of Manitoba, Manitoba Regulatory Consultation Portal, online: https://reg.gov.mb.ca/home; The Legislative Assembly of Manitoba, "Committees", online: https://www.gov.mb.ca/legislature/committees/index.html; The Legislative Assembly of Manitoba, "Petition Guidelines", online: https://www.gov.mb.ca/legislature/business/petition_guidelines.html; The Legislative Assembly of Manitoba, "Process for Passage of a Private Bill in the Legislative Assembly of Manitoba", online: https://www.gov.mb.ca/legislature/business/privatebillguidelines.pdf

55 Government of Manitoba, Budget 2022, online: https://www.gov.mb.ca/budget2022/index.html; Government of Manitoba, EngageMB: Budget 2022, online: https://engagemb.ca/budget-2022; Government of Manitoba, EngageMB: Budget 2022 Public Meetings, online: https://engagemb.

ca/budget-2022-public-meetings; Government of Manitoba, EngageMB: Budget 2022 Telephone Town Hall, online: https://engagemb.ca/budget-2022-telephone-town-hall.

56 Government of Manitoba, EngageMB: Budget 2022, *ibid*.

57 James S Mallet, Municipal Powers, Land Use Planning, and the Environment: Understanding the Public's Role (Environmental Law Centre of Albera, 2005), 2005 CanLIIDocs 209, 5–7, online: https://www.canlii.org/en/commentary/doc/2005CanLIIDocs209.

58 *The Municipal Act*, supra note 25; The City of Winnipeg Charter, supra note 25.

59 *The Municipal Act*, ibid, Part 7.

60 For example, see *The Animal Diseases Act* RSM 1987, c A85, CCSM c A85; *The Animal Liability Act* SM 1998, c 8, CCSM c A95; *The Conservation Agreements Act* SM 1997, c 59, CCSM c C173; *The Dangerous Goods Handling and Transportation Act* RSM 1987, c D12, CCSM c D12, s 43; *The Heritage Resources Act* SM 1985–86 c 10, CCSM c H39.1; *The Watershed Districts Act* RSM 1987, c C175, CCSM c W95.

61 Mallet, supra note 57, at 16–19.

62 *The Planning Amendment and City of Winnipeg Charter Amendment Act enacted in 2021* SM 2021 c 36 (Bill 37, 3rd Session, 42nd Legislature) [Amendment Act]. See also: John Stefaniuk, "The Planning Amendment and City of Winnipeg Charter Amendment Act – What's In, What's Out and What's Next?" (October 20, 2021).

63 The Capital Planning Region consists of the territory within the boundaries of the following municipalities: the City of Winnipeg, the City of Selkirk, the Town of Niverville, the Town of Stonewall, the Village of Dunnottar; and the Rural Municipalities of Cartier, East St. Paul, Headingley, Macdonald, Ritchot, Rockwood, Rosser, Springfield, St. Andrews, St. Clements, St. Francois Xavier, Taché and West St. Paul. [Amendment Act, *ibid*, s 3] Note: the sections of the Amendment Act that create these changes have not yet been proclaimed and are not yet in force.

64 Winnipeg Metropolitan Region, "About Plan 2050", online: https://20to50.ca/about-plan-2050/

65 Government of Manitoba, "Manitoba Regulatory Consultation Portal: Capital Planning Region Regulation", online: https://reg.gov.mb.ca/detail/7444876; Government of Manitoba, "Backgrounder: Capital Planning Region Regulation", online: https://news.gov.mb.ca/asset_library/BG-Capital_Planning_Region_Consultation-MR.pdf

66 For example, the only mention of contaminated or brownfield sites in the Draft Plan 2050 is in the glossary section of the document. (Appendix C: Glossary) [Winnipeg Metropolitan Region, "Plan 20–50: draft version 2.0: Regional Growth Plan for the Winnipeg Metropolitan Region" (2021)].

67 Amendment Act, supra note 62.

68 *The Planning Act*, supra note 24.

69 *The Planning Act*, ibid, s 13, 14.

70 *The Planning Act*, ibid, s 31–39. See also: The City of Winnipeg Charter, supra note 25, Division 4, s 273–274.

71 *The Planning Act*, ibid, s 62(1).

72 *Provincial Planning Regulation* MR 81/2011, Part 4, s 6. [Planning Reg]

73 *The City of Winnipeg Charter*, supra note 25, s 224, s 234, s 235.

74 *The Planning Act*, supra note 24, Part 4; Planning Reg, supra note 72, Part 4.

75 Planning Reg, ibid, Part 4, s 4(1).

76 Planning Reg, ibid, s 4(2).

77 Planning Reg, ibid.

78 Planning Reg, ibid, s 4(1).

79 *The Planning Act*, supra note 24, s 63(1).

80 City of Winnipeg, "*OurWinnipeg 2045* Development Plan" (2022), online: https://www.winnipeg.ca/interhom/cityhall/ourwinnipeg/Documents/Our-Winnipeg-2045.pdf [OurWinnipeg 2045]

81 OurWinnipeg 2045, ibid, 5.

82 City of Winnipeg, "Complete Communities Direction Strategy 2.0" (2002), at 6, online: https://www.winnipeg.ca/interhom/cityhall/ourwinnipeg/Documents/Complete-Communities-Direction-Strategy-2.0.pdf [Complete Communities]

83 City of Winnipeg, "Local Area Plans", online: https://www.winnipeg.ca/ppd/CityPlanning/LocalAreaPlan/default.stm

84 OurWinnipeg 2045, supra note 80; Complete Communities, supra note 82, 169.

85 OurWinnipeg 2045, ibid; Complete Communities, ibid.

86 OurWinnipeg 2045, ibid, 35.

87 OurWinnipeg 2045, ibid. See also, page 8.

88 Complete Communities, supra note 82, at 140.

89 *The Planning Act*, supra note 24, s 68 (Part 5).

90 City of Winnipeg, *Downtown Winnipeg Zoning By-Law* No 100/2004 (23 June 2004).

91 City of Winnipeg, T*he City of Winnipeg Zoning By-law* No 200/06 (1 March 2008). [Winnipeg Zoning By-law]

92 *The Planning Act*, supra note 24, s 71; City of Winnipeg, "Zoning – An Overview", online: https://www.winnipeg.ca/ppd/zoning/default.stm. See pages 21, 24, 26 for zoning maps of our project area.

93 *The Planning Act*, ibid, s 71.

94 *The Planning Act*, ibid.

95 Winnipeg Zoning By-law, supra note 91, s 50. See for example, Manufacturing General (M2) and Manufacturing heavy (M3) districts [s 56(4)-(5)]; Downtown Winnipeg Zoning By-law, supra note 89, s 100(3).

96 Winnipeg Zoning By-law, *ibid*, s 60. Downtown Winnipeg Zoning By-law, *ibid*, s 200(5)(i).

97 The Director may consider "excessive noise, odour, fumes, dust, toxic material, and vibration likely to be generated". [Winnipeg Zoning By-law, ibid, s 61(2)]

98 *The City of Winnipeg Charter*, supra note 25, s 248; The Planning Act, supra note 24, s 94(1).

99 *The City of Winnipeg Charter*, ibid, s 247(3).

100 *The City of Winnipeg Charter*, ibid, s 247(4); The Planning Act, supra note 24, s 97(2).

101 *The City of Winnipeg Charter*, ibid, s 253–254; *The Planning Act*, ibid, Part 7: Conditional Uses, s 103–118.

102 *The City of Winnipeg Charter*, ibid, s 240.2(5); *The Planning Act*, ibid, s 147.

103 *The City of Winnipeg Charter*, ibid, s 240.2(2).

104 *The City of Winnipeg Charter*, ibid, s 240; The Planning Act, supra note 24, s 150.

105 *The City of Winnipeg Charter*, ibid, s 240(1.1).

106 *The Planning Act*, supra note 24, s 138.

107 *The Planning Act*, ibid, s 139.

108 City of Winnipeg, *Neighbourhood Liveability By-law* No 1/2008 (1 November 2008), Part 3: s 53–57.

109 Neighbourhood Liveability By-law, ibid, Part 3: s 53–57, s 2 ("garbage").

110 Neighbourhood Liveability By-law, ibid, Part 5: s 65–71.

111 City of Winnipeg, *Vacant Buildings By-Law* No. 79/2010 (21 July 2010); City of Winnipeg, *Taking Title to Vacant and Derelict Buildings By-law* No 89/2010 (15 December 2010); City of Winnipeg, *Vacant and Derelict Buildings By-law* No. 35/2004 (19 May 2004). A "vacant" building is a building that is not being used or occupied. [*Vacant Buildings By-law*, s 2(1)] A "derelict property" is property that contains a vacant dwelling or non-residential building that is not in compliance with the derelict building by-law. [*Taking Title to Vacant and Derelict Buildings By-law*, s 2, The City of Winnipeg Charter, supra note 25, s 190(1)]

112 OurWinnipeg 2045, supra note 80, at 44

113 OurWinnipeg 2045, ibid, at 44, 74.

114 Vacant Buildings By-Law, supra note 111, Schedule A.

115 Taking Title to Vacant and Derelict Buildings By-law, supra note 111.

116 City of Winnipeg, *Sewer By-Law* No. 106/2018 (13 December 2018); City of Winnipeg, "Combined Sewer Overflow (CS)) Master Plan", online: https://www.winnipeg.ca/waterandwaste/sewage/csoMasterPlan.stm; City of Winnipeg, *Solid Waste By-Law* No. 110/2012 (18 July 2012).

117 City of Winnipeg Charter, supra note 25, s 161, 182(1)(g), 209(2)(e), 236(2)(m), 236(2)(t).

118 Solid Waste By-law, supra note 116, s 2; Sewer By-law, supra note 116, s 2, Schedule A, s 4.

119 Solid Waste By-law, ibid, s 5(3).

120 For example, *The Environment Act*, supra note 21; Waste Management Facilities Regulation, MR 37/2016; Water and Wastewater Facility Operators Regulation, MR 77/2003; *The Waste Reduction and Prevention Act* SM 1989–90, c 60.

121 Mallet, supra note 57, at 8–9; *The City of Winnipeg Charter*, supra note 25, s 175.

122 City of Winnipeg, *The Municipal By-law Enforcement Act (MBEA) Enabling By-law* No 59/2016 (18 May 2016), s 11 [The MBEA Enabling By-law]; *The Municipal by-law Enforcement Act* SM 2013 c 47, Sch. B. See the City of Winnipeg By-law Screen Services "By-laws" website for a list of by-laws that the City is authorized to issue penalty notices for under the MBEA Enabling By-law: https://winnipeg.ca/bylawscreening/bylaws.stm.

123 For example, violators certain provisions of the *Neighbourhood Liveability By-law* face a fine of $1,000-$2,000 (individual) or $4,000-$5,000 (corporation). [Neighbourhood Liveability By-law, supra note 108, Schedule B]

124 The MBEA Enabling By-law, supra note 122, s 4, Schedule A.

125 The MBEA Enabling By-law, ibid, s 5.

126 Fort Richmond & University Heights Neighbourhood Association, "Reporting By-law Infractions", online: http://www.neighbourhoodassociation.ca/residents/reporting-bylaw-infractions/ [FRUHNA]

127 The MBEA Enabling By-law, supra note 122, Part 5, s 16–21.

128 FRUHNA, supra note 126.

129 *The City of Winnipeg Charter*, supra note 25, s 180–188.

130 City of Winnipeg, "Community By-law Enforcement Services", online: https://winnipeg.ca/cms/BLES/default.stm

131 *The City of Winnipeg Charter*, supra note 25, s 177–178.

132 *The City of Winnipeg Charter*, ibid, s 177(3).

133 *The City of Winnipeg Charter*, ibid, s 177(2).

134 *The City of Winnipeg Charter*, ibid, s 184–189.

135 *The Planning Act*, supra note 24, s 181.

136 *The Planning Act*, ibid, s 182.

137 *The Planning Act*, ibid, s 181.

138 City of Winnipeg, online: https://www.winnipeg.ca/interhom/

139 City of Winnipeg, Decision Making Information System, online: https://clkapps.winnipeg.ca/DMIS/

140 City of Winnipeg, Open Data Portal, online: https://data.winnipeg.ca/

141 City of Winnipeg, "By-Law Investigations: Neighbourhood Liveability, Property Standards, & Licensing", online: https://data.winnipeg.ca/Neighbourhood-Liveability-Property-Standards-Licen/By-Law-Investigations/eye3-guud

142 City of Winnipeg, "FIPPA Request Responses", online: https://data.winnipeg.ca/Organizational-Support-Services/Fippa-Request-Responses/pfbi-rm6v

143 City of Winnipeg, "311 City Services", online: https://www.winnipeg.ca/311-city-services

144 City of Winnipeg, *Engage Winnipeg Policy*, Policy No CO-013 (September 26, 2019). [Engage Winnipeg Policy]

145 Engage Winnipeg Policy, ibid, s 1.

146 Engage Winnipeg Policy, ibid, s 1, s 7.3.

147 *The City of Winnipeg Charter*, supra note 25, s 17(4), s 191(2), s 227(1), s 236.1, s 255(3).

148 *The City of Winnipeg Charter*, ibid, s 189.

149 *The City of Winnipeg Charter*, ibid, s 225(2).

150 *The City of Winnipeg Charter*, ibid, s 230.

151 *The City of Winnipeg Charter*, ibid, s 236.1(7)-(9).

152 *The City of Winnipeg Charter*, ibid, s 249.

153 *The City of Winnipeg Charter*, ibid, s 251(3).

154 *The City of Winnipeg Charter*, ibid, s 256(2).

155 *The City of Winnipeg Charter*, ibid, s 270(2).

156 *The City of Winnipeg Charter*, ibid, s 427.

157 *The City of Winnipeg Charter*, ibid, s 512.

158 *The City of Winnipeg Charter,* ibid, s 82–83.

159 *The City of Winnipeg Charter*, ibid, s 113–121, s 277–278.

160 *The City of Winnipeg Charter*, ibid, s 280.

161 City of Winnipeg, "Public Hearing Process", online: https://winnipeg.ca/Clerks/cityHall/PublicHearingProcess.stm

162 *The City of Winnipeg Charter*, supra note 25, s 122(3).

163 *The City of Winnipeg Charter*, ibid, s 426(1).

164 *The City of Winnipeg Charter*, ibid, s 124–127.

165 *The City of Winnipeg Charter,* ibid, s 124(1).

166 *The City of Winnipeg Charter,* ibid.

167 *The City of Winnipeg Charter*, ibid.

168 *The City of Winnipeg Charter*, ibid.

169 *The City of Winnipeg Charter*, ibid, s 465.

170 *The City of Winnipeg Charter*, ibid, s 265(4).

171 The City of Winnipeg, "Budget", online: https://winnipeg.ca/interhom/budget/default.stm

172 The City of Winnipeg, "Budget", ibid.

173 The City of Winnipeg, "Budget", ibid.

174 The City of Winnipeg, "Multi-year budget: 2022 update", online: https://winnipeg.ca/interhom/Budget/2022-budget/default.stm.

175 *Canadian Environmental Protection Act*, 1999, SC 1999, c 33. [CEPA]

176 CEPA, ibid, Preamble; Government of Canada, "Understanding CEPA", online: https://www.canada.ca/en/services/environment/pollution-waste-management/understanding-environmental-protection-act.html

177 Government of Canada, ibid.

178 CEPA, supra note 175, Part 3, Part 4.

179 CEPA, ibid, Part 2, s 11–42.

180 Bill S-5, the Strengthening Environmental Protection for a Healthier Canada Act, 44th parl, 1st sess. (Sen. Marc Gold); See also, Government of Canada, "LEGISinfo: S-5", online: https://www.parl.ca/LegisInfo/en/bill/44-1/S-5

181 *Food and Drugs Act*, RSC 1985, c F-27; *Perfluorooctane Sulfonate Virtual Elimination Act,* SC 2008, c 13.

182 Bill C-28, the *Strengthening Environmental Protection for a Healthier Canada Act*, 43rd Parliament, 2nd Sess. (2020), online: https://www.parl.ca/legisinfo/en/bill/43-2/c-28.

183 See Appendix 4. See also: Canadian Environmental Law Association, "Webinar 4: CEPA and Vulnerable Populations, Electromagnetic Frequency and Biotechnology" (October 26, 2022), online: https://cela.ca/wheres-the-protection-webinar-series-cepa/

184 Bill S-5, supra note 180, s 2(3), 3(1)(a)(i), 4(2), 5.1(2)(a), 7, 16(2), 20. "Vulnerable population" means a group of individuals within the Canadian population who, due to greater susceptibility or greater exposure, may be at an increased risk of experiencing adverse health effects from exposure to substances. [Bill S-5, s 4(2)].

185 Bill S-5, ibid.

186 Bill S-5, ibid, s 2(1), 5, 7.

187 CEPA, supra note 175, s 22; Canadian Environmental Law Association, "Submissions to the House of Commons Standing Committee on Environment and Sustainable on Bill S-5, *An Act to Amend the Canadian Environmental Protection Act, 1999*" (2022), at 38–40, online: https://cela.ca/wp-content/uploads/2022/10/Bill_S-5-HC_submissions_Sept_2022.pdf

188 Standing Committee on Environment and Sustainable Development, "Healthy Environment, Healthy Canadians, Healthy Economy: Strengthening the C*anadian Environmental Protection Act, 1999*" (2017), at 40–42 (Recommendation 36), online: https://www.ourcommons.ca/DocumentViewer/en/42-1/ENVI/report-8/; CELA, ibid, 5, 30–31.

189 Bill S-5, supra note 180, s 58; CELA, ibid, 15–19.

190 Bill S-5, ibid, s 54; CELA, ibid, 20–21.

191 Bill C-226, the *National Strategy Respecting Environmental Racism and Environmental Justice Act*, 44th parl, 1st sess, (Elizabeth May). See also: Government of Canada, "LEGISinfo: C-226", online: https://www.parl.ca/LegisInfo/en/bill/44-1/c-226.

192 See Appendix 5.

193 *Impact Assessment Act*, SC 2019, c 28, s 1; Government of Canada, "Impact Assessment Agency of Canada", online: https://www.canada.ca/en/impact-assessment-agency.html; Government of Canada, "Impact Assessment Process Overview", online: https://www.canada.ca/en/impact-assessment-agency/services/policy-guidance/impact-assessment-process-overview.html; Meinhard Doelle & John Sinclair (eds.), *The Next Generation of Impact Assessment: A Critical Review of the Canadian Impact Assessment Act* (Toronto, Canada: Irwin Law, 2021).

194 *The Environment Act*, supra note 21.

195 Impact Assessment Agency of Canada, "Canadian Impact Assessment Registry", online: https://iaac-aeic.gc.ca/050/evaluations/index

196 See for example: Impact Assessment Agency of Canada, "Vivian Sand Project", online: https://iaac-aeic.gc.ca/050/evaluations/proj/80974.

Appendix 4:

197 CELA, *Proposed Amendments Submitted to the Ministers of Environment and Climate Change and Health on Bill S-5, An Act to Amend the Canadian Environmental Protection Act, 1999*, etc. (March 2022), online: https://cela.ca/wp-content/uploads/2022/03/CELA-Proposed-Amendments-to-Bill-S-5-CEPA_03Mar22.pdf; CELA, *Submissions to the Minister of Environment and Climate Change and Health on Bill C-28, An Act to Amend the Canadian Environmental Protection Act, 1999*, etc. (February 2022), online: https://cela.ca/wp-content/uploads/2022/02/Submission_CEPA.pdf

198 See for example, Elisha Dacey, "Testing Reveals Toxic Heavy Metals in St. Boniface Soil," CBC, August 18, 2017; Kristin Annable, "Unsafe Lead Levels Remain at Weston School's Sports Field, Gov't Officials Say Winter Minimizes Risk," *CBC*, November 29, 2018; Cameron MacLean, "High Lead Levels in Soil a Lingering Reminder of Point Douglas's Industrial Past," *CBC*, December 1, 2018; Kristin Annable, "New Test Results Show Lead Contamination in St. Boniface Gardens up to 10 Times Recommended Level," CBC, May 31, 2019; Cameron MacLean, "Fences Going Back up around Weston School Field Pending More Tests for Lead in Soil," CBC, April 12, 2019; Government of Manitoba, "Sampling Report: Surface Soil Lead Levels in Winnipeg, Manitoba: 2007 & 2008" (Government of Manitoba, May 2011), https://s3.documentcloud.org/documents/4873722/Y2011.pdf; Intrinsik Corp, "Summary of Findings, Lead Concentrations in Winnipeg Soil" (2019), https://gov.mb.ca/asset_library/en/proactive/2019_2020/soil-report-summary-of-findings.pdf;

199 Nicholas Frew, "Testing Suggests 1 in 5 Winnipeg Homes with Lead Pipes Have Unsafe Levels of Lead in Drinking Water," CBC, December 17, 2019; Jim Maloway, "Replace Lead Water Pipes," Winnipeg Free Press, May 12, 2021.

200 (Gochfeld & Burger, 2011, pp. S54–S59)

201 (Annable et al., 2018)

Appendix 5:

202 Adnil Gosine & Cheryl Teelucksingh, *Environmental Justice and Racism in Canada: An Introduction* (Toronto, Can: Emond Montgomery Publications Ltd., 2008); Kaitlyn Mitchell & Zacharay D'Onofrio, "Environmental Injustice and Racism in Canada: The First Step is Admitting We Have a Problem" (2016) 29 Journal of Environmental Law and Practice 305; Ingrid Waldron, *There's Something in the Water: Environmental Racism in Indigenous and Black Communities* (Black Point, NS: Fernwood Publishing, 2018).

203 See for example, Elisha Dacey, "Testing Reveals Toxic Heavy Metals in St. Boniface Soil," *CBC*, August 18, 2017; Kristin Annable, "Unsafe Lead Levels Remain at Weston School's Sports Field, Gov't Officials Say Winter Minimizes Risk," *CBC*, November 29, 2018; Cameron MacLean, "High Lead Levels in Soil a Lingering Reminder of Point Douglas's Industrial Past," CBC, December 1, 2018; Kristin Annable, "New Test Results Show Lead Contamination in St. Boniface Gardens up to 10 Times Recommended Level," *CBC*, May 31, 2019; Cameron MacLean, "Fences Going Back up around Weston School Field Pending More Tests for Lead in Soil," CBC, April 12, 2019; Government of Manitoba, "Sampling Report: Surface Soil Lead Levels in Winnipeg, Manitoba: 2007 & 2008" (Government of Manitoba, May 2011), https://s3.documentcloud.org/documents/4873722/Y2011.pdf; Intrinsik Corp, "Summary of Findings, Lead Concentrations in Winnipeg Soil" (2019), https://gov.mb.ca/asset_library/en/proactive/2019_2020/soil-report-summary-of-findings.pdf;

204 Nicholas Frew, "Testing Suggests 1 in 5 Winnipeg Homes with Lead Pipes Have Unsafe Levels of Lead in Drinking Water," CBC, December 17, 2019; Jim Maloway, "Replace Lead Water Pipes," Winnipeg Free Press, May 12, 2021.

205 (Gochfeld & Burger, 2011, pp. S54–S59) See also: City of Winnipeg, "Lead in water", online: <https://winnipeg.ca/waterandwaste/water/lead.stm>

206 (Annable et al., 2018)



CCPA
CANADIAN CENTRE
for POLICY ALTERNATIVES
MANITOBA OFFICE