Our Vision:
Healthy People in Vibrant Communities

Board of Health Meeting

St. Thomas Location: 1230 Talbot St. St. Thomas, ON
Talbot Boardroom; MS Teams Participation
Thursday, May 23, 2024
1:00 p.m.

AGENDA			
ITEM	**AGENDA ITEM**	**LEAD**	**EXPECTED OUTCOME**
1.0 CONVENING THE MEETING			
1.1	Call to Order, Recognition of Quorum • Introduction of Guests, Board of Health Members and Staff	Bernia Martin	
1.2	Approval of Agenda	Bernia Martin	Decision
1.3	Reminder to disclose Pecuniary Interest and the General Nature Thereof when Item Arises including any related to a previous meeting that the member was not in attendance for.	Bernia Martin	
1.4	Reminder that meetings are recorded for minute-taking purposes.	Bernia Martin	
2.0 APPROVAL OF MINUTES			
2.1	Approval of Minutes • April 18, 2024	Bernia Martin	Decision
2.2	Approval of Minutes • April 25, 2024	Bernia Martin	Decision
3.0 APPROVAL OF CONSENT AGENDA ITEMS			
3.1	**Letter: alPHa Letter to Minister Lecce re Vape, Tobacco and Nicotine Products in Schools** *May 2, 2024: The Association of Local Public Health Agencies (alPHa) and its affiliated sections commend recent measures addressing student wellbeing in schools, particularly regarding vape, tobacco, and nicotine products. Stressing public health's crucial role in education and enforcement, they highlight the need to prevent youth access for societal health improvement. They urge recognition of these measures within a comprehensive strategy, as outlined by the Chief Medical Officer of Health's call for a broader approach to substance use, citing rising vaping rates among youth.*	Bernia Martin	
3.2	**Letter: SWPH Letter to Minister of Finance Peter Bethlenfalvy re Alcohol Policy** *May 14, 2024: SWPH's response to Minister Bethlenfalvy notes the actions proposed in his February response to public health's advocacy regarding social responsibility in Ontario's alcohol marketplace are insufficient in protecting the health of vulnerable populations. The letter reiterates public health's call for stronger measures such as reducing retail density, maintaining or decreasing hours of sale, and strengthening pricing policies to mitigate alcohol-related issues. Highlighting the link between alcohol availability and problems like violence and chronic diseases, SWPH stresses the need for government consultation with health organizations and local public health to prioritize public safety over industry interests.*	Bernia Martin	

ITEM	AGENDA ITEM	LEAD	EXPECTED OUTCOME
4.0 CORRESPONDENCE RECEIVED REQUIRING ACTION			
5.0 AGENDA ITEMS FOR INFORMATION.DISCUSSION.ACCEPTANCE.DECISION			
5.1	SWPH Climate Change and Health Vulnerability Assessment Report for May 23, 2024	Amy Pavletic Michelle Alvey	Decision
5.2	Medical Officer of Health's Report for May 23, 2024	Dr. Tran	Decision
5.3	Chief Executive Officer's Report for May 23, 2024	Cynthia St. John	Decision
6.0 NEW BUSINESS/OTHER			
7.0 CLOSED SESSION			
8.0 RISING AND REPORTING OF THE CLOSED SESSION			
9.0 FUTURE MEETINGS & EVENTS			
9.1	• Board of Health Orientation: Thursday, June 27, 2024 at Noon • Board of Health Orientation: Thursday, June 27, 2024 at 1:00 p.m. ○ Oxford County Administration Building 21 Reeve Street, Woodstock, ON ○ Virtual Participation: MS Teams	Bernia Martin	
10.0 ADJOURNMENT			

April 18, 2024

Board of Health Special Session Meeting

Open Session Minutes

A special session of the Board of Health for Oxford Elgin St. Thomas Health Unit was held on Thursday, April 18, 2024 commencing at 9:00 a.m.

PRESENT:

Ms. C. Agar	Board Member
Mr. J. Couckuyt	Board Member
Mr. D. Mayberry	Board Member
Mr. G. Jones	Board Member (Vice-Chair)
Ms. B. Martin	Board Member (Chair)
Mr. S. Molnar	Board Member
Mr. M. Peterson	Board Member
Mr. J. Preston	Board Member
Mr. L. Rowden	Board Member
Mr. M. Ryan	Board Member
Mr. D. Shinedling	Board Member
Mr. D. Warden	Board Member
Ms. C. St. John	Chief Executive Officer (ex officio)
Dr. N. Tran	Medical Officer of Health (ex officio)
Ms. W. Lee	Executive Assistant

GUESTS:

Ms. J. Gordon	Administrative Assistant
Mr. Michael Schlesinger	Sense & Nous
Mr. Tony Yu*	Sense & Nous

**represents virtual participation*

REGRETS:

Mr. J. Herbert	Board Member

REMINDER OF DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF WHEN ITEM ARISES

1.1 CALL TO ORDER, RECOGNITION OF QUORUM

The meeting was called to order at 9:00 a.m.

S. Molnar joined the meeting at 9:04 a.m.

1.2 AGENDA

Resolution # (2024-BOH-0418-1.2)
Moved by M. Peterson
Seconded by D. Mayberry

That the agenda for the Southwestern Public Health Board of Health meeting for April 18, 2024 be approved.

Carried.

1.3 Reminder to disclose Pecuniary Interest and the General Nature Thereof when Item Arises.

1.4 Reminder that meetings are recorded for minute-taking purposes.

7.0 TO CLOSED SESSION

Resolution # (2024-BOH-0418-C7)
Moved by G. Jones
Seconded by M. Peterson

That the Board of Health move to closed session in order to consider one or more the following as outlined in the Ontario Municipal Act:

(a) the security of the property of the municipality or local board;
(b) personal matters about an identifiable individual, including municipal or local board employees;
(c) a proposed or pending acquisition or disposition of land by the municipality or local board;
(d) labour relations or employee negotiations;
(e) litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board;
(f) advice that is subject to solicitor-client privilege, including communications necessary for that purpose;
(g) a matter in respect of which a council, board, committee or other body may hold a closed meeting under another Act;
(h) information explicitly supplied in confidence to the municipality or local board by Canada, a province or territory or a Crown agency of any of them;
(i) a trade secret or scientific, technical, commercial, financial or labour relations information, supplied in confidence to the municipality or local board, which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons, or organization;
(j) a trade secret or scientific, technical, commercial or financial information that belongs to the municipality or local board and has monetary value or potential monetary value; or
(k) a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board. 2001, c. 25, s. 239 (2); 2017, c. 10, Sched. 1, s. 26.

Other Criteria:

(a) a request under the *Municipal Freedom of Information and Protection of Privacy Act*, if the council, board, commission or other body is the head of an institution for the purposes of that Act; or
(b) an ongoing investigation respecting the municipality, a local board or a municipally-controlled corporation by the Ombudsman appointed under the *Ombudsman Act*, an Ombudsman referred to in subsection 223.13 (1) of this Act, or the investigator referred to in subsection 239.2 (1). 2014, c. 13, Sched. 9, s. 22.

Carried.

8.0 RISING AND REPORTING OF CLOSED SESSION

Resolution # (2024-BOH-0418-C8)
Moved by M. Ryan
Seconded by D. Warden

That the Board of Health rise with a report.

Carried.

Resolution # (2024-BOH-0418-C3.1)
Moved by M. Peterson
Seconded by L. Rowden

That the Board of Health for Southwestern Public Health accept the Special Ad Hoc Strengthening Public Health Committee Report for April 18, 2024.

Carried.

10.0 ADJOURNMENT

The meeting adjourned at 11:50 a.m.

Resolution # (2024-BOH-0418-10)
Moved by M. Peterson
Seconded by J. Preston

That the meeting adjourn to meet again on Thursday, April 25, 2024, at 1:00 p.m.

Carried.

Confirmed: _____

April 25, 2024

Board of Health Meeting

Open Session Minutes

A meeting of the Board of Health for Oxford Elgin St. Thomas Health Unit was held on Thursday, April 25, 2024 commencing at 1:00 p.m.

PRESENT:

Ms. C. Agar	Board Member
Mr. J. Couckuyt	Board Member
Mr. J. Herbert	Board Member
Mr. G. Jones	Board Member (Vice-Chair)
Ms. B. Martin	Board Member (Chair)
Mr. S. Molnar	Board Member
Mr. M. Peterson	Board Member
Mr. J. Preston	Board Member
Mr. M. Ryan	Board Member
Mr. L. Rowden	Board Member
Mr. D. Shinedling	Board Member
Mr. D. Warden	Board Member
Ms. C. St. John	Chief Executive Officer (ex officio)
Dr. N. Tran	Medical Officer of Health (ex officio)
Ms. W. Lee	Executive Assistant

GUESTS:

Ms. J. Buchanan	Graham Scott Enns
Ms. J. Gordon	Administrative Assistant
Mr. P. Heywood	Program Director
Ms. S. MacIsaac	Program Director
Mr. D. McDonald	Director, Corporate Services and Human Resources
Ms. M. Nusink	Director, Finance
Ms. N. Rowe	Manager, Communications
Mr. I. Santos	Manager, Information Technology
Mr. D. Smith	Program Director

MEDIA:

Mr. R. Perry*	Aylmer Express

**represents virtual participation*

REGRETS:

Mr. D. Mayberry	Board Member

REMINDER OF DISCLOSURE OF PECUNIARY INTEREST AND THE GENERAL NATURE THEREOF WHEN ITEM ARISES

1.1 CALL TO ORDER, RECOGNITION OF QUORUM

The meeting was called to order at 12:58 p.m.

1.2 AGENDA

Resolution # (2024-BOH-0425-1.2)
Moved by J. Preston
Seconded by D. Warden

> That the agenda for the Southwestern Public Health Board of Health meeting for April 25, 2024 be approved.
>
> Carried.

1.3 Reminder to disclose Pecuniary Interest and the General Nature Thereof when Item Arises.

B. Martin indicated she would be in conflict regarding Item 2.0-2.1 Nomination of the Board of Health Chair to the alPHa Executive Board in the Chief Executive Officer's Open Session Report and would recuse herself from the discussion and leave the room at that time, whereby G. Jones would assume the duties of the Chair during that time.

B. Martin, M. Ryan, and M. Peterson indicated that as members of the Oxford County Council they would be in conflict regarding an item in the Chief Executive Officer's Closed Session Report related to matters of property and would recuse themselves from the discussion and leave the room at that time, whereby G. Jones would assume the duties of the Chair during that time.

1.4 Reminder that meetings are recorded for minute-taking purposes.

2.0 APPROVAL OF MINUTES

Resolution # (2024-BOH-0425-2.1)
Moved by J. Herbert
Seconded by S. Molnar

> That the minutes for the Southwestern Public Health Board of Health meeting for March 28, 2024 be approved.
>
> Carried.

AGENDA ITEMS FOR INFORMATION.DISCUSSION.DECISION

5.1 Chief Executive Officer Report for April 25, 2024

Jennifer Buchanan from Graham Scott Enns reviewed, in detail, the audited financial statements with the Board of Health.

J. Buchanan noted that this was a clean audit with no concerns expressed.

C. St. John expressed her appreciation for J. Buchanan and Graham Scott Enns' expertise in public health nuances, ongoing support, and overall excellence.

It was noted that the financial statements are available online for residents to access in the open session package for April 25, 2024 and previous audited statements are available on the SWPH website.

J. Buchanan left the room following her presentation to the Board of Health.

Resolution # (2024-BOH-0425-5.1-3.1)
Moved by G. Jones
Seconded by C. Agar

That Board of Health for Southwestern Public Health approve the audited financial statements for the period ending December 31, 2023.

Carried.

B. Martin recused herself from the room at 1:16 p.m. prior to the review and discussion of Resolution # 2024-BOH-0425-5.1-2.1, Nomination of the Board of Health Chair to the alPHa Executive Board. G. Jones assumed the role of the Chair.

The group indicated their full support for the Chair's nomination to the alPHa Board of Directors and alPHa Board of Health Section Executive. The group asked if there would be any value in seeking additional backing from SWPH's neighbouring health units or providing letters of support from the funding municipalities and C. St. John indicated she would incorporate these suggestions if appropriate. J. Preston indicated he would be pleased to sign the nomination form alongside G. Jones.

Resolution # (2024-BOH-0425-5.1-2.1)
Moved by J. Preston
Seconded by D. Warden

That the Board of Health for Southwestern Public Health approve the nomination of Bernia Martin to the alPHa Board of Directors and alPHa Board of Health Section Executive for the 2024-2026 period and further that two Board of Health members sign the nomination form as sponsors of this nomination.

Carried.

B. Martin returned to the room at 1:22 p.m. and resumed the duties of the Chair.

Resolution # (2024-BOH-0425-5.1-2.3)
Moved by J. Preston
Seconded by D. Warden

That the Board of Health for Southwestern Public Health approve the re-convening of the Governance Standing Committee, effective April 25, 2024.

Carried.

D. Shinedling, M. Peterson, and S. Molnar indicated their interest in joining the Governance Standing Committee.

D. Warden noted it may be of value for the Board to consider reconvening the Finance and Facilities Standing Committee as well.

Resolution # (2024-BOH-0425-5.1)
Moved by G. Jones
Seconded by M. Peterson

That the Board of Health for Southwestern Public Health appoint Graham Scott Enns as the auditing firm for the year ending December 31, 2024.

Carried.

Resolution # (2024-BOH-0425-5.1-3.4)
Moved J. Couckuyt
Seconded by M. Peterson

That the Board of Health for Southwestern Public Health accept SWPH's Monthly Financial Control Checklist for April 25, 2024.

Carried.

Resolution # (2024-BOH-0425-5.1-3.5)
Moved by J. Herbert
Seconded by J. Couckuyt

That the Board of Health for Southwestern Public Health approve the revised Credit Facility Agreement with RBC for April 25, 2024.

Carried.

J. Couckuyt noted with thanks, for the excellent rate afforded to SWPH in the swap agreement for the 1230 building that was negotiated by C. St. John in 2013.

Resolution # (2024-BOH-0425-5.1)
Moved by M. Peterson
Seconded by D. Warden

That the Board of Health accept the Chief Executive Officer's report, effective April 25, 2024.

Carried.

5.2 Medical Officer of Health's Report

Dr. Tran reviewed his report which also included a review of the Chief Medical Officer of Health's (CMOH) 2023 Annual Report which focussed on Tobacco/Vaping products, Cannabis, Alcohol, and Opioids.

Dr. Ninh Tran outlined four key areas of action for addressing substance use disorders: legislation, pricing, access, and harm reduction. The issue of substance abuse and its impact on society has been compounded by the Covid-19 pandemic, during which deaths and harms from tobacco, alcohol, and opioids have worsened. The government and society must collaborate to tackle these alcohol-related harms and other substance use issues.

Joe Preston pointed out that the legalization and decriminalization of marijuana could potentially generate additional funds for healthcare, but this expectation has not been fully realized.

Jim Herbert and Joe Preston noted the need for more help from well-funded agencies in Ontario to address addiction and mental health issues. Dr. Ninh Tran noted SWPH is actively working with local organizations such as the Canadian Mental Health Association (CMHA) on local responses and initiatives.

Dr. Ninh Tran indicated there are emerging issues with cannabis and vaping in the region, including healthcare costs and impaired driving. D. Shinedling asked what level of cannabis and vaping use is in the local area. Dr. Tran indicated that he does not have concrete numbers on hand, but there are growing concerns.

Marcus Ryan expressed concern about balancing political interests with evidence-based strategies in the report and noted that the CMOH's 2023 Annual Report lacks a degree of evidence-based direction. J. Preston remarked on the parental approach of the report.

S. Molnar asked for clarification about what further work SWPH will do to align with the CMOH's report and Dr. Tran indicated a follow-up report will be provided at a later date.

J. Preston noted that vaping is an issue and asked how its presence became so strong so quickly. Dr. Tran responded that the challenge for the Province is that it lacks the ability to respond nimbly to emerging substance use and its permutations and this is one example.

Resolution # (2024-BOH-0425-5.2)
Moved by D. Warden
Seconded by M. Peterson

That Board of Health for Southwestern Public Health accept the Medical Officer of Health's report for April 25, 2024.

Carried.

6.0 NEW BUSINESS

7.0 TO CLOSED SESSION

Resolution # (2024-BOH-0425-C7)
Moved by M. Peterson
Seconded by J. Preston

That the Board of Health move to closed session in order to consider one or more the following as outlined in the Ontario Municipal Act:

(a) the security of the property of the municipality or local board;
(b) personal matters about an identifiable individual, including municipal or local board employees;
(c) a proposed or pending acquisition or disposition of land by the municipality or local board;
(d) labour relations or employee negotiations;
(e) litigation or potential litigation, including matters before administrative tribunals, affecting the municipality or local board;
(f) advice that is subject to solicitor-client privilege, including communications necessary for that purpose;
(g) a matter in respect of which a council, board, committee or other body may hold a closed meeting under another Act;
(h) information explicitly supplied in confidence to the municipality or local board by Canada, a province or territory or a Crown agency of any of them;
(i) a trade secret or scientific, technical, commercial, financial or labour relations information, supplied in confidence to the municipality or local board, which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons, or organization;
(j) a trade secret or scientific, technical, commercial or financial information that belongs to the municipality or local board and has monetary value or potential monetary value; or
(k) a position, plan, procedure, criteria or instruction to be applied to any negotiations carried on or to be carried on by or on behalf of the municipality or local board. 2001, c. 25, s. 239 (2); 2017, c. 10, Sched. 1, s. 26.

Other Criteria:

(a) a request under the *Municipal Freedom of Information and Protection of Privacy Act*, if the council, board, commission or other body is the head of an institution for the purposes of that Act; or
(b) an ongoing investigation respecting the municipality, a local board or a municipally-controlled corporation by the Ombudsman appointed under the *Ombudsman Act*, an Ombudsman referred to in subsection 223.13 (1) of this Act, or the investigator referred to in subsection 239.2 (1). 2014, c. 13, Sched. 9, s. 22.

Carried.

8.0 RISING AND REPORTING OF CLOSED SESSION

Resolution # (2024-BOH-0425-C8)
Moved by M. Peterson
Seconded by J. Preston

That the Board of Health rise with a report.

Carried.

B. Martin, M. Peterson, and M. Ryan recused themselves from the room at 3:09 p.m. prior to the voting of Resolution # 2024-BOH-0425-C3.1-1.1. G. Jones assumed the role of Chair. The three board members also recused themselves from the room for all discussion on this matter.

Resolution # (2024-BOH-0425-C3.1-1.1)
Moved by J. Preston
Seconded by D. Warden

> That the Board of Health ratify the signing of the lease renewals of Southwestern Public Health's Woodstock locations effective May 1, 2024.

Carried.

B. Martin, M. Peterson, and M. Ryan returned to the room at 3:10 p.m. B. Martin resumed the duties of the Chair.

Resolution # (2024-BOH-0425-C3.1)
Moved by G. Jones
Seconded by J. Herbert

> That the Board of Health for Southwestern Public Health accept the Chief Executive Officer's Report for April 25, 2024.

Carried.

Resolution # (2024-BOH-0425-C3.2)
Moved by M. Ryan
Seconded by J. Preston

WHEREAS Southwestern Public Health is a recent amalgamation of Oxford County, Elgin County, and the City of St. Thomas; and

WHEREAS staff continue to work, as it has previously, in collaboration with all surrounding Health Units to enhance service delivery, build strong community partnerships, and provide continued advocacy for public health; and

WHEREAS the Province of Ontario has encouraged local public health agencies to consider amalgamations pursuant to its Strengthening Public Health initiative; and

WHEREAS the Board of Health recognizes that any merger of local public health agencies has risks and benefits to service level, community members, staff, and municipalities; and

WHEREAS Southwestern Public Health, Brant County Health Unit, and Haldimand-Norfolk Health Unit have engaged in a thorough period of consideration and due diligence with regard to the potential merger of the three health units; then

BE IT RESOLVED that the staff of Southwestern Public Health proceed as directed by the Board of Health in Report 2024-BOH-0425-C3.2 and verbal recommendation by the committee.

Carried.

D. Warden asked for a recorded vote.

Agar, Catherine	Yea
Couckuyt, Jack	Yea
Herbert, Jim	Yea
Jones, Grant	Yea
Martin, Bernia	Yea
Mayberry, David	Absent
Molnar, Stephen	Yea
Peterson, Mark	Yea
Preston, Joe	Yea
Rowden, Lee	Yea
Ryan, Marcus	Yea
Shinedling, Davin	Yea
Warden, David	Yea

The motion was unanimous and carried.

9.0 FUTURE MEETING & EVENTS

10.0 ADJOURNMENT

The meeting adjourned at 3:14 p.m.

Resolution # (2024-BOH-0425-10)
Moved by M. Peterson
Seconded by M. Ryan

That the meeting adjourns to meet again on Thursday, May 23, 2024, at 1:00 p.m. or earlier at the call of the Chair.

Carried.

Confirmed: _____

alPHa
Association of Local PUBLIC HEALTH Agencies

alPHa's members are the public health units in Ontario.

alPHa Sections:

Boards of Health Section

Council of Ontario Medical Officers of Health (COMOH)

Affiliate Organizations:

Association of Ontario Public Health Business Administrators

Association of Public Health Epidemiologists in Ontario

Association of Supervisors of Public Health Inspectors of Ontario

Health Promotion Ontario

Ontario Association of Public Health Dentistry

Ontario Association of Public Health Nursing Leaders

Ontario Dietitians in Public Health

PO Box 73510, RPO Wychwood
Toronto, Ontario M6C 4A7
E-mail: info@alphaweb.org

May 2, 2024

Hon. Stephen Lecce
Minister of Education
5th Flr, 438 University Ave,
Toronto, ON M7A 2A5

Dear Minister Lecce,

Re: Vape, tobacco and nicotine products in schools

On behalf of the Association of Local Public Health Agencies (alPHa) and its Boards of Health Section, Council of Ontario Medical Officers of Health Section, and Affiliate Associations, we are writing in response to your April 28 announcement of measures to improve student wellbeing in schools, particularly those related to vape, tobacco and nicotine possession and use. We appreciate your action of these important issues.

As you are aware, public health has an important mandate in addressing these issues, including education and enforcement, which you noted in the announcement. Preventing access to and use of vape, tobacco and other nicotine products by youth is one of the most important public health interventions to reduce their societal prevalence and we are pleased that you have chosen to focus on this as a path to improving healthy school environments.

Having acknowledged the importance of tackling this issue in our schools, we hope that you will recognize the measures you have announced as a potential component of the more comprehensive strategy that our members called upon your government to consider last year via *alPHa Resolution A23-02, Toward a Renewed Smoking, Vaping, and Nicotine Strategy in Ontario* (attached).

We also hope that you will consider this in the context of the Chief Medical Officer of Health's call for a comprehensive strategy to address substance use in general via his 2023 Annual Report, *Balancing Act, An All-of-Society Approach to Substance Use and Harms*, in which he cites rising rates of vaping among youth in grades 9 to 12 as a most concerning trend (p. 42).

Thank you again for working to improve student wellbeing. We look forward to working with you and welcome any questions you may have. Please have your staff contact Loretta Ryan, Executive Director, alPHa, at loretta@alphaweb.org or 647-325-9594.

Sincerely,

Dr. Charles Gardner
President

Copy: Hon. Sylvia Jones, Minister of Health
Nolan Quinn, Parliamentary Assistant to the Minister of Health
Dr. Kieran Moore, Chief Medical Officer of Health, Ontario

Encl.

The Association of Local Public Health Agencies (alPHa) is a not-for-profit organization that provides leadership to Ontario's boards of health. alPHa represents all of Ontario's 34 boards of health, medical officers and associate medical officers of health, and senior public health managers in each of the public health disciplines – nursing, inspections, nutrition, dentistry, health promotion, epidemiology, and business administration. As public health leaders, alPHa advises and lends expertise to members on the governance, administration, and management of health units. The Association also collaborates with governments and other health organizations, advocating for a strong, effective, and efficient public health system in the province. Through policy analysis, discussion, collaboration, and advocacy, alPHa's members and staff act to promote public health policies that form a strong foundation for the improvement of health promotion and protection, disease prevention and surveillance services in all of Ontario's communities.

RESOLUTION A23-02

TITLE: **Toward a Renewed Smoking, Vaping, and Nicotine Strategy in Ontario**

SPONSOR: **Simcoe Muskoka District Health Unit (SMDHU)**

WHEREAS commercial tobacco use remains the leading preventable cause of death and disease in Ontario and Canada; and

WHEREAS the direct and indirect financial costs of tobacco smoking are substantial and were estimated at $7 billion in Cancer Care Ontario and Public Health Ontario's 2019 report The Burden of Chronic Diseases in Ontario; and

WHEREAS the prevalence of cigarette smoking among Ontarians aged 15 years and older in 2020 was 9.9%, amounting to 1,222,000 people; and

WHEREAS the commercial tobacco control landscape has become more complex with the rapid rise of vaping among youth, as well as the concerning prevalence of waterpipe and cannabis smoking; and

WHEREAS the membership previously carried resolution A21-1 proposing policy measures to address youth vaping for implementation at the provincial and federal levels, several of which have yet to be implemented; and

WHEREAS the membership previously carried resolution A17-5 recommending that the provincial tobacco control strategy be aligned with the tobacco endgame in Canada; and

WHEREAS Ontario and Canada have made great strides in commercial tobacco control in Ontario, which are now endangered by the lack of a provincial strategy and infrastructure to support its continuation; and

WHEREAS disproportionate commercial tobacco and nicotine use and associated health burdens exist among certain priority populations;

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies write to the Ontario Minister of Health recommending that a renewed and comprehensive smoking, vaping, and nicotine strategy be developed with the support of a multidisciplinary panel of experts, local public health, and people with lived experience;

AND FURTHER that the Association of Local Public Health Agencies recommend that, in the development of a target for such a provincial strategy, the expert panel examine the sufficiency and inclusiveness of Canada's Tobacco Strategy target of less than 5% commercial tobacco use by 2035 with respect to all nicotine delivery products;

AND FURTHER that the Association of Local Public Health Agencies recommend that the pursuit of health equity be foundational to such a provincial strategy;

AND FURTHER that a copy be sent to the Chief Medical Officer of Health of Ontario.

St. Thomas Site
Administrative Office
1230 Talbot Street
St. Thomas, ON
N5P 1G9

Woodstock Site
410 Buller Street
Woodstock, ON
N4S 4N2

May 14, 2024

Honourable Peter Bethlenfalvy, Minister of Finance
Ministry of Finance
Frost Building South
7th Floor
7 Queen's Park Cres.
Toronto, ON M7A 1Y7

Sent by email to: peter.bethlenfalvy@ontario.ca

Honourable Sylvia Jones, Minister of Health
Ministry of Health
5th Floor
777 Bay St.
Toronto, ON M7A 2J3

Sent by email to: sylvia.jones@ontario.ca

Dear Minister Peter Bethlenfalvy and Minister Sylvia Jones,

Re: Correspondence on Social Responsibility, Modernizing the Alcohol Marketplace, and Product Sales.

The Oxford, Elgin, and St. Thomas Board of Health would like to express gratitude for your response to our letter, which discussed the proven harms alcohol causes our local community and the effective ways to decrease these harms. It is recognized that the Government of Ontario is in a delicate position, trying to balance less red tape and restrictions, with the need to lessen harm. However, the Board of Health believes the actions outlined in your response do not go far enough to protect our citizens from the harm alcohol causes and the impacts increased availability would have on our local community.

The interventions previously articulated are critical in reducing harm due to alcohol. The Board of Health would like to reiterate and encourage action on the following:

1. Reducing retail density, especially in neighbourhoods with low socio-economic status (SES).
2. Maintaining or decreasing hours of sale, with no exceptions.
3. Strengthen Ontario's alcohol pricing policies, including taxation and minimum unit pricing.
4. Applying a whole of government, health-in-all-policies approach to alcohol modernization with consideration for a provincial alcohol strategy.

Recognition must also be given to Dr. Moore's recent 2023 report, "Balancing Act," which clearly outlines the actions needed to decrease alcohol-related harms.

It cannot be forgotten that research shows that when alcohol becomes more available and affordable, the following problems increase: street and domestic violence, chronic diseases, sexually transmitted infections, road crashes, youth drinking, injury (1) and suicide. (2)

Local governments all over Ontario have declared intimate partner violence an epidemic, (3) including the City of Woodstock, which is within our jurisdiction. (4) There is an established link between alcohol consumption, violence, and severity of violence, especially as it relates to intimate partner violence and male to female sexual violence. (5) Increasing access to alcohol is not going to make intimate partner violence better. It is recognized that drinking past two drinks per occasion increases the risk of violence and injuries for the drinker and those around them. (6)

Over 3,400 people in Canada were hospitalized, and 847 died due to motor vehicle collisions (MVCs) attributed to any substance use in 2020, of which the leading cause of death was alcohol. The economic cost of premature deaths due to MVCs related to alcohol was $175.9 million. (7) Not to mention the increased rates of chronic disease and the added strains on hospital services, such as hospitalizations and ER visits, that an increase in alcohol consumption will bring. (2,8,9)

The issues mentioned above will have monetary costs, including increasing healthcare costs, lost productivity, criminal justice costs, and other direct costs. (10) When these losses are tallied, alcohol revenue does not cover the costs it creates. Alcohol contributed to a deficit of $1.947 billion in Ontario, meaning we lose $0.34 per standard drink sold. (11)

Your response specifically mentioned government consultation with industry in the coming months. We hope that the government will recognize that industry interests must be balanced. Industry has a conflict of interest because they gain more of a profit from higher consumption of alcohol and may not have the public's health and safety top of mind. (1,12,13) We urge the Ontario government to consult health organizations and local public health in the coming months to uphold Ontario's standards for health and safety regarding alcohol.

Knowing that the government takes these concerns seriously, we hope that further consultation will be done with health organizations and local public health on the plans for the additional $10 million in funding over the next five years to support social responsibility and public health efforts to ensure alcohol is sold in ways that do not increase harms to our local citizens.

Once again, we implore the Ontario Government to carefully incorporate a health-based alcohol policy in the best interest of our local communities. Thank you for your time and consideration.

Sincerely,

Peter Heywood
Southwestern Public Health, Program Director

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Southwestern Public Health Report

Climate Change and Health Vulnerability Assessment Report

MEETING DATE:	May 23, 2024
SUBMITTED BY:	Michelle Alvey, Health Promoter, Environmental Health and Amy Pavletic, Program Manager, Environmental Health
SUBMITTED TO:	☒ Board of Health
PURPOSE:	☐ Decision ☐ Discussion ☒ Receive and File
AGENDA ITEM #	5.1
RESOLUTION #	2024-BOH-0523-5.1
REPORT TITLE:	Climate Change and Health Vulnerability Assessment Report

REPORT HIGHLIGHTS

This report communicates the results of an assessment of the health vulnerability of the Southwestern Public Health (SWPH) region to climate change impacts. It provides an understanding of the baseline vulnerabilities to climate change, focuses on a range of climate-related health impacts on vulnerable populations, and compiles existing actions and future recommendations for SWPH to consider. Specifically, it has four objectives:

1. Outline climate-associated health risks facing the SWPH region.
2. Highlight vulnerable populations in the SWPH region and the potential impacts of climate change.
3. Describe ongoing climate action undertaken by SWPH.
4. Propose recommendations to plan for future climate change impacts.

The Climate Change and Health Vulnerability Assessment aims to identify policies and programs that can increase the resilience of SWPH communities with a particular focus on those who are most vulnerable to these impacts. Additionally, the assessment and subsequent recommendations identify a need to address climate change's challenges in exacerbating social and environmental determinants of health, widening health inequities, and resulting disparities. This report identifies opportunities for SWPH to incorporate climate change action into existing functions and to develop new programming where necessary to prevent and reduce the severity of future climate-related health risks.

The Climate Change Vulnerability Assessment identified a number of actions to increase community resilience to address the health impacts of climate change:

1. Develop a comprehensive and co-produced risk reduction and prevention strategy for extreme weather conditions.
2. Review and enhance coordination mechanisms with area municipalities on land use planning.
3. Build and strengthen partnerships with agencies, organizations, and individuals beyond jurisdictional boundaries.
4. Create a communications plan to share up-to-date data on health risk information with recommendations spanning all hazards and health impacts for the region, including the psychosocial dimensions.
5. Establish a monitoring and evaluation framework to assess the impact of climate actions and interventions
6. Promote and advocate for social capital-building activities**.**
7. Develop a climate-compatible sustainable food system strategy.

Accountability

The Board of Health oversees the implementation of the Healthy Environments and Climate Change Guideline, Ontario Public Health Standard. The Healthy Environments Program Standard aims to reduce exposure to health hazards and promote the development of healthy built and natural environments. The standard also requires SWPH to work with others to mitigate and help with adaptation to existing and emerging risks, including the impacts of a changing climate. The requirements include:

- Identifying risk factors through environmental surveillance and epidemiological analysis, priority health needs, and health impacts associated with climate change to inform activities and programs;
- Collaborating with community partners to develop effective strategies to reduce exposure to health hazards associated with climate change and promote healthy natural and built environments;
- Implementing public health interventions to reduce exposures to health hazards, including climate change mitigation and adaptation actions;
- Developing communication strategies to address local needs about climate change to ensure the public and stakeholders are aware of the links between their actions and climate change; and
- Engaging in community and multi-sectoral collaboration with municipal and other relevant partners to promote healthy built and natural environments.

Purpose/Approach

To provide the Board of Health with information on the results of the Climate Change and Health Vulnerability Assessment for Oxford County, Elgin County, and the City of St. Thomas.

Evidence/Data

In the past two decades, climate science established with high confidence that a rise in global temperatures has contributed to a changing climate. As a result, a wide array of rapid-onset extreme weather events such as forest fires, severe storms, and floods, have increased in intensity and frequency. Alongside these events, there is also an increase in slower-onset natural hazards including the spread of disease vectors, droughts, and elevated temperatures. [(1)]

These accelerated changes in the climate system have intensified impacts on communities and are expected to continue to pose significant risks to human health and well-being. Public health plays a critical role in reducing climate-related health risks, and addressing these risks requires a focus on enhancing the resilience of communities and systems through adaptation strategies. To better understand these risks and vulnerabilities specific to health, public health agencies across Canada and

the world are conducting climate change and health vulnerability assessments. The data and evidence in these reports help to inform public health action.

Client/Community Focused Feedback

This report was informed by an internal and external advisory committee involving representatives from various local organizations and staff from SWPH working in climate change-relevant program areas. To facilitate discussion, the results of the literature review and existing vulnerability assessments in Ontario were shared, along with climate projection data for the region. The engagement process emphasized the need for a strong commitment to equity, the importance of considering inequities in addressing climate change vulnerability and identifying recommendations that are actionable and tangible.

Limitations

While the report has taken an evidence-based approach, there are some limitations to the report that should be taken into consideration when reviewing its contents.

The first limitation is with internal and external advisory committee engagement. While the external advisory group represents various organizations, the number of committee members is limited, due to the timeframe of the project. Recommendations were inputted anonymously, and as such, ideas cannot be attributed to specific participants.

The second limitation to be noted is the availability of data and evidence. The information presented in this report captures the best available data available at the time of the report and therefore should be taken into consideration while reading. Health data does not always capture data directly related to climate hazards. Yearly trends from health data help illustrate impacts experienced by climate-related health risks. In addition, health data was not always available for the exact geographic location covered by SWPH. Larger databases for the province and area help to inform the findings of this report.

Next Steps

The development of a comprehensive Climate and Health Action Plan (CHAP) is an important next step for SWPH to put the findings of the climate change and health vulnerability assessment to work. The CHAP should encompass resource management strategies, a dedicated budget, and a robust evaluation framework. The proposed recommendations and activities identified in the Climate Change and Health Vulnerability Assessment will undergo a feasibility assessment, prioritizing them based on community needs, potential impact, and resource requirements. To ensure successful implementation and track our progress, the establishment of clear and measurable indicators will be prioritized. Aligning these indicators with those of our community partners will foster collaboration, enhance the CHAP's effectiveness, and contribute to its long-term success in achieving shared climate change and health goals.

MOTION: 2024-BOH-0523-5.1
That the Board of Health for Southwestern Public Health receive the Climate Change and Health Vulnerability Assessment and its associated recommendations for May 23, 2024.

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Climate Change and Health Vulnerability Assessment

Michelle Alvey, Health Promoter
Amy Pavletic, Program Manager
Environmental Health

Southwestern Public Health
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Oxford · Elgin · St.Thomas

University of Waterloo | Waterloo Climate Institute

Assessment of Health Vulnerability from Climate Change for Oxford County, Elgin County, and the City of St. Thomas

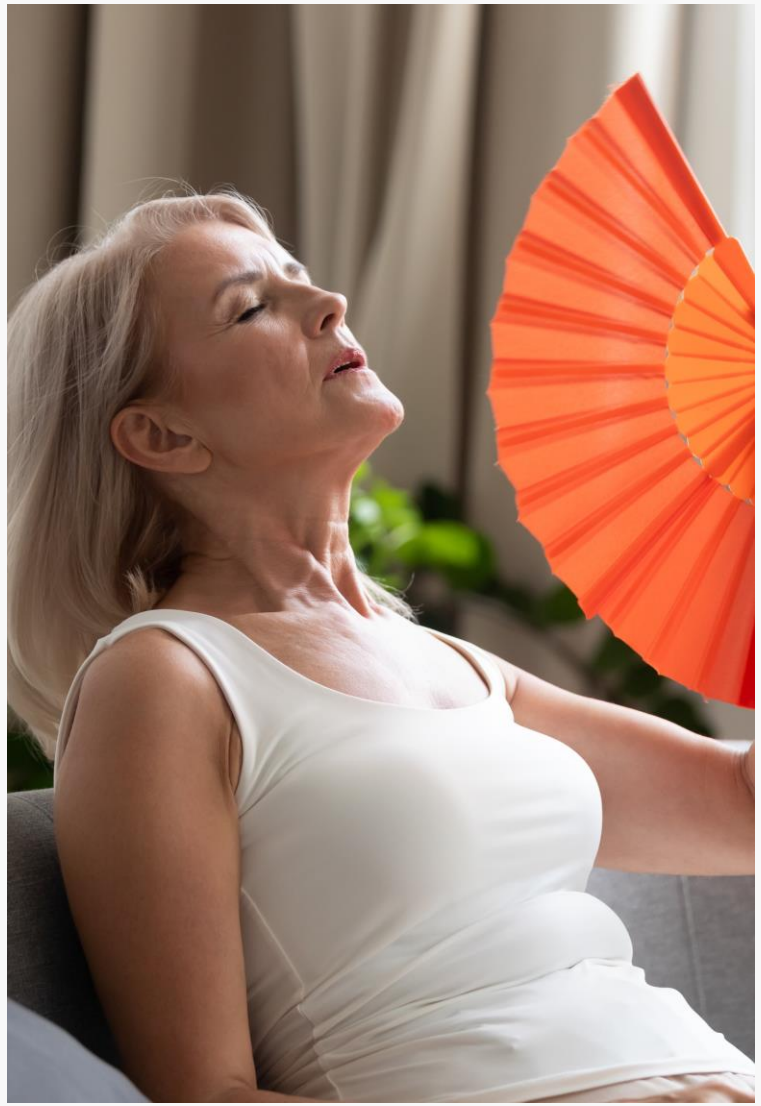
April 2024

Prepared by:
Waterloo Climate Institute – University of Waterloo

Purpose and Objectives

To conduct an assessment of the vulnerability of communities in the region to the health impacts of climate change.

1. Outline climate-associated health risks facing the SWPH region.
2. Highlight vulnerable populations in the SWPH region and the potential impacts of climate change.
3. Describe ongoing climate action undertaken by SWPH.
4. Propose the next steps to plan for future climate change impacts.



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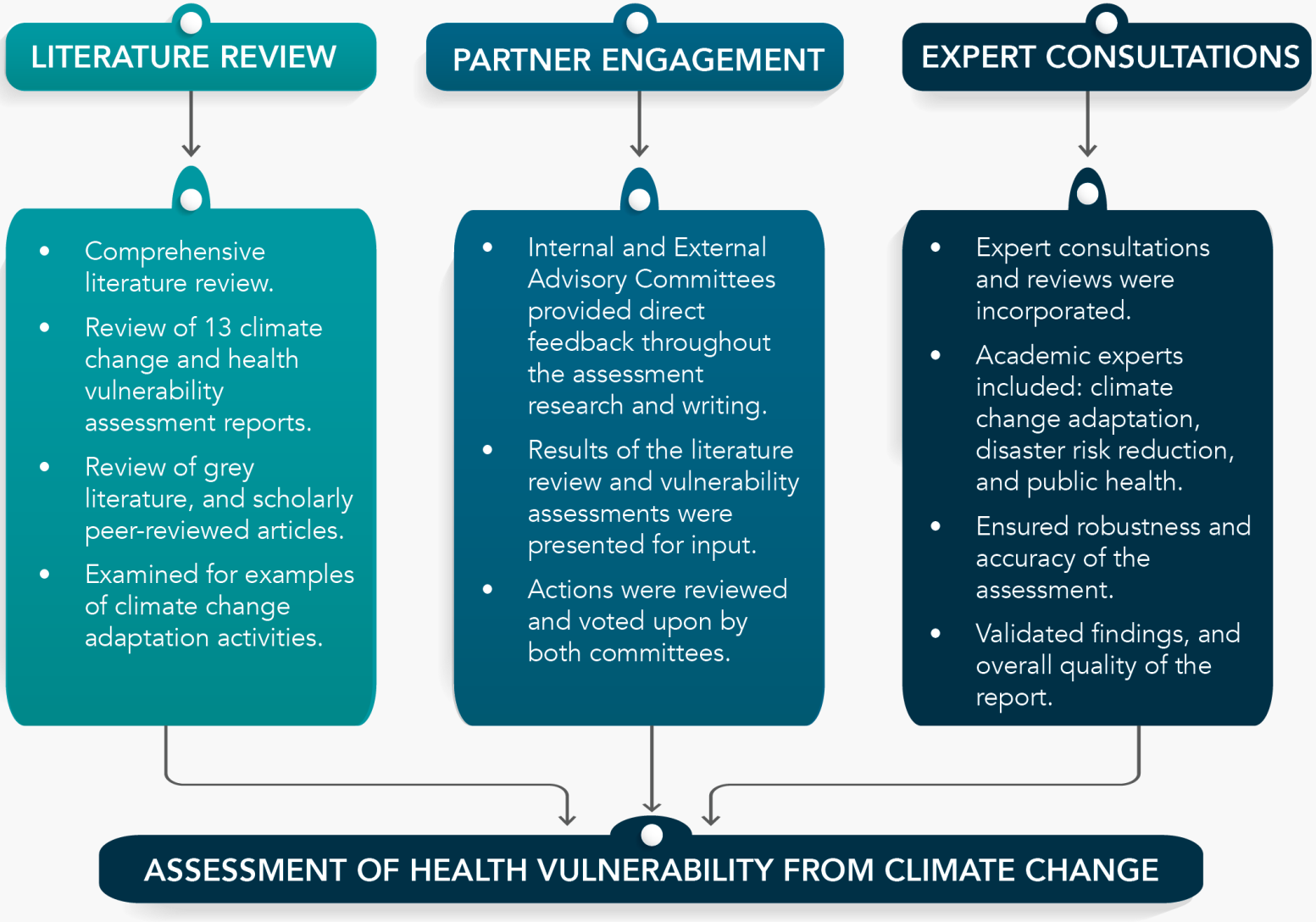
Assessment Approach



WATERLOO Climate Institute

UNIVERSITY OF WATERLOO

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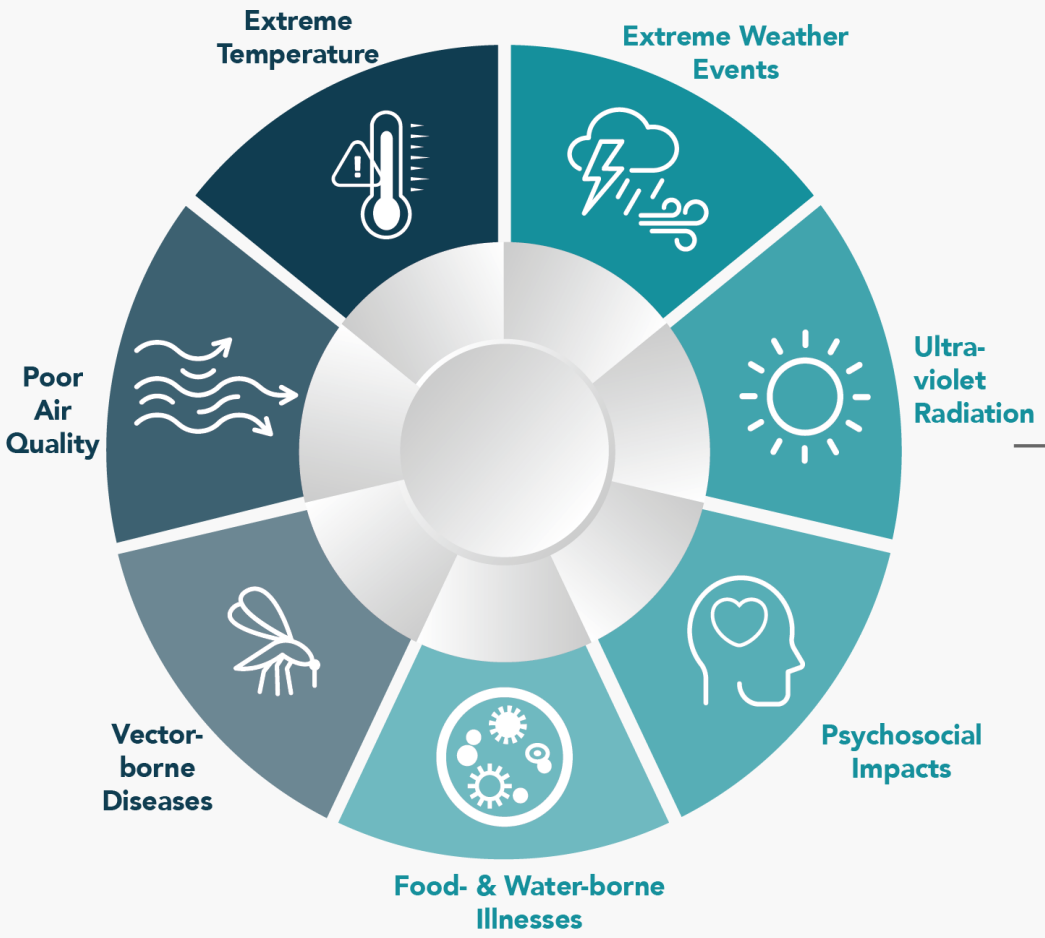
Expert Engagement

External Advisory Committee	
Brad Hertner	Grand River Conservation Authority
Brian Connors	Director of Parks and Recreation, City of Woodstock
Bryan Smith	Oxford Coalition for Social Justice
Heather Sheridan	Director of Social Services, City of St. Thomas
Jess Huber	St. Thomas Public Library
Keegan Marshal-DeSutter	IISAN Ingersoll Indigenous Solidarity Awareness Network
Kevin Mc Clure	Central Elgin Municipal Planner
Patricia Marshal-DeSutter	IISAN Ingersoll Indigenous Solidarity Awareness Network
Paul Jenkins	CEO, St. Thomas and District Chamber of Commerce
Petrusia Hontar	YWCA/St. Thomas-Elgin Local Immigration Partnership
Sarah Hamulecki	Director of Strategic Initiatives Oxford County

Internal Advisory Committee	
Allison McIntosh	Public Health Inspector, Environmental Health
Amy Pavletic	Program Manager, Healthy Environments
Blake Schwartzentruber	Public Health Inspector, Environmental Health
Carolyn Richards	Program Manager, Foundational Standards
Gemma Urbani	Public Health Planner, Foundational Standards
Karrie Skillings	Public Health Nurse, Healthy Growth And Development
Kendall Chambers	Dietitian, Chronic Disease Prevention and Well-being
Marcia Van Wylie	Program Manager, Chronic Disease and Injury Prevention
Meagan Lichti	Public Health Nurse, Chronic Disease Prevention and Well-being
Ninh Tran	Medical Officer of Health, Southwestern Public Health
Rebecca Wallace	Public Health Nurse, Chronic Disease Prevention and Well-being

Climate Change Impacts and Risks



Extreme Temperature
Extreme heat resulting in heat-related illness or death

Extreme Weather Events
Damages to living residence, injuries, or death

Poor Air Quality
Impacts on respiratory and heart-related disease or death

Psychosocial Impacts
Post-traumatic stress disorder (PTSD), anxiety, depression

Ultraviolet Radiation
Exposure impacts, sunburn, eye cataracts, skin cancer, or death

Vector-borne & Zoonotic Diseases
Lyme disease and West Nile virus

Food- & Water-borne Illnesses
Pathogens in food and water increase due to climate change

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Vulnerable Populations

- People experiencing homelessness
- Those living below the poverty line
- The Amish Communities
- The Low-German Speaking Mennonite Communities
- LGBTQ2S+
- Indigenous communities
- Outdoor workers/outdoor farm workers
- Temporary Migrant (agriculture) workers
- Women, especially single-parent households
- Men, especially those who make their living outdoors
- Immigrants
- Older adults

Reducing Health Impacts of Climate Change

100+ activities and actions identified across all hazards and impacts, and evaluated by three criteria:

- suitability (or fit) of the action for the region;
- how well the action addresses local needs; and,
- the potential impact of the action on reducing vulnerability.

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QUICK WINS

Activities that typically require little investment/few additional resources and often capitalize on existing processes that require only minor tweaks to achieve results.

BEST BUYS

Activities that typically require modest investment/some additional resources and produce the greatest returns on investment toward the outcome of interest.

GAME CHANGERS

Activities that typically require greater investments/additional resources, including time as well as changes in processes and/or governance procedures, to undertake activities that are transformative in nature.

Next Steps

The development of a comprehensive Climate and Health Action Plan (CHAP) is an important next step for SWPH to put the findings of the climate change and health vulnerability assessment to work. The CHAP should encompass resource management strategies, a dedicated budget, and a robust evaluation framework. The proposed recommendations and activities identified in the Climate Change and Health Vulnerability Assessment will undergo a feasibility assessment, prioritizing them based on community needs, potential impact, and resource requirements. To ensure successful implementation and track our progress, the establishment of clear and measurable indicators will be prioritized. Aligning these indicators with those of our community partners will foster collaboration, enhance the CHAP's effectiveness, and contribute to its long-term success in achieving shared climate change and health goals.

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Questions

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Assessment of Health Vulnerability from Climate Change for Oxford County, Elgin County, and the City of St. Thomas

Prepared by:
Waterloo Climate Institute – University of Waterloo

May 2024

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About This Report

This report was completed for Southwestern Public Health by the Waterloo Climate Institute.

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Acknowledgements:
The authors thank the representatives from Southwestern Public Health and members of the Advisory Committees as well as those who participated in engagement processes to better understand health risks posed by climate change locally.

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Cynthia St. John, CEO, Southwestern Public Health

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Suggested citation:

SWPH 2024 "*Assessment of Health Vulnerability from Climate Change for Oxford County, Elgin County, and the City of St. Thomas*". Chen, T., Yeung, Y., Elliott, S., DiBella, J. Waslander, E. and Huynh, T.

Abbreviations

CIW - Canadian Index of Wellbeing

COPD - Chronic obstructive pulmonary disease

CSWB - Community Safety and Well-being Plan (Aylmer-Elgin-St. Thomas)

ED - Emergency department

GCMs - Global climate models

GIS - Geographic Information Systems

HEPP - Healthy Equity and Priority Populations

IPCC - Intergovernmental Panel on Climate Change

LGBTQ2S+ - Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, and Two-spirit

LGS - Low German Speaking Mennonite Communities

LIM-AT - Low-income measure after tax

NAPS - National Air Pollution Surveillance

NbS – Nature-based solutions.

NFB - Nutritious Food Basket

OHIP - Ontario Health Insurance Plan

PHO - Public Health Ontario

PTSD - post-traumatic stress disorder

RGI - Rent-geared-to-income

SPCO - Social Planning Council of Oxford County

SSP - Socio-economic pathway

SWPH - Southwestern Public Health

UV/UVR - Ultraviolet radiation

How to Read This Document

This report describes several key areas of the assessment of climate change and health vulnerability to support the development of adaptation options for Oxford County, Elgin County, and the City of St. Thomas.

The report is structured according to three goals. First, it begins by outlining the current landscape of the Southwestern Public Health (SWPH) region. This includes past climate impacts, demographics, and the existing built, social, and economic landscapes. Additionally, the report summarizes adaptation planning and practices from the literature and other public health units in Ontario to identify important trends, gaps and lessons learned. Second, it provides an overview of localized climate projections that are anticipated to impact the SWPH region. With a focus on addressing equity, vulnerable populations within the SWPH region are identified with information that elucidates how climate change exacerbates their vulnerabilities. Third, the report incorporates input from both internal (to SWPH) and external advisory groups, and evidence-based activities from the literature, to present recommended actions for health resilience and climate adaptation. These recommendations are organized into two groups: activities for SWPH to consider; and, activities for external partners and organizations to consider.

The authors encourage partners to use the evidence presented in this report to further support the development of climate change adaptation and mitigation initiatives and consider how the health impacts of climate change can be reduced through appropriate community actions.

Executive Summary

In the past two decades, climate science established with high confidence that the rise in global temperatures, as highlighted by the Intergovernmental Panel on Climate Change (IPCC), has contributed to a changing climate. As a result, a wide array of rapid-onset extreme weather events such as forest fires, severe storms, and floods, have increased in intensity and frequency. Alongside these events, there is also an increase in slower-onset natural hazards including the spread of disease vectors, droughts, and elevated temperatures.

These accelerated changes in the climate system have intensified impacts on communities and are expected to continue to pose significant risks to human health and well-being. Public health units play a critical role in reducing climate-related health risks, and addressing these risks requires a focus on enhancing the resilience of communities and systems through adaptation strategies. To better understand these risks and vulnerabilities specific to health, public health agencies across Canada and the world are conducting climate change and health vulnerability assessments. The data and evidence in these reports help to inform public health action.

Climate change projections and climate-related health impacts in southern Ontario

Southern Ontario has already witnessed notable climate changes over the past two decades, including an increase in the average annual air temperature in the province of between 1 to 1.5°C over the past century (Ministry of the Environment, Conservation, and Parks, 2023).

Given these changes to the regional and global climate, and the resulting impacts the region is already experiencing, and which will intensify, SWPH in collaboration with the University of Waterloo's Climate Institute, has conducted an assessment of the vulnerability of communities in the region to the health impacts of climate change. This report summarizes this assessment, which drew on a comprehensive review of existing climate change health vulnerability assessments in the province, academic literature, partner engagements, and expert contributions to analyze and present recommendations.

The report outlines various projected climate change impacts in the region, including extreme temperatures, extreme weather events, vector-borne diseases, air quality, and ultraviolet radiation. For example, a recent review by SWPH indicates that by the 2080s, Oxford and Elgin Counties and the City of St. Thomas can expect a significant increase in the number of days surpassing 32°C, which pose serious heat-related risks to the community, underscoring the need for prevention and preparedness in the region. Rising temperatures and shifting precipitation patterns have already led to an increase in the frequency of forest fires during the summer months and to seasonal changes in air quality.

Moreover, the likelihood of winter floods, slippery conditions, and flash freeze events is expected to rise due to increased precipitation during the colder months, particularly in heavy rainfall events. It is projected that Oxford and Elgin Counties and the City of St. Thomas could experience an increase in extremely wet days, from the baseline of 8 days to 11 days by the 2080s, heightening the risk of flooding and its impacts on communities.

Additionally, indirect climate-associated changes, such as the increased presence of vector-borne and zoonotic diseases, are anticipated to pose risks to public health in the region, leading to an increase in diseases like Lyme disease and West Nile Virus (WNV).

A growing body of knowledge and experience is showing that climate change is impacting psychosocial health, including creating anticipatory fear before disasters and through post-disaster trauma, and a growing sense of loss, sorrow, grief and abandonment (Van Susteren, L., and Al-Delaimy, 2020; Miller et al., 2023). New evidence has also shown other harmful outcomes, including direct links between increased high temperatures and the number of suicides (Lawrance et al., 2021). These impacts and the approaches to addressing them are an important focus of this assessment.

Vulnerable populations

These climate change-associated hazards and environmental changes present a series of health risks, particularly affecting vulnerable populations. The impacts of climate-related health risks are not experienced equally by all populations. The report identifies vulnerable populations in the SWPH region such as Amish communities, immigrants, Indigenous communities, older adults, those experiencing homelessness, and others, who may experience heightened susceptibility to climate-related health risks. This is due to a combination of factors, such as elevated levels of exposure from working conditions, limited access to health resources and advice in different languages, age or structural barriers which have historically left populations vulnerable to the different impacts.

Adaptive Actions

SWPH has already initiated actions to address climate-related health impacts and reduce risks through strategic collaboration with a wide array of partners across the public, private, and non-profit sectors. Collaborations with groups such as Health Equity Partners, the Social Determinants of Health Nurses Group, and the Low German Speaking Mennonite Community of Practice aim to reach individuals living in vulnerable conditions in the region. Furthermore, the implementation of initiatives, such as tracking heat and cold-related emergency visits and hospitalizations, as well as the establishment of RAVE Alerts, an early warning system, demonstrates a proactive approach to protect vulnerable residents.

Recognizing the importance of social connectivity in building social capital, SWPH actively participates in local community and neighbourhood groups, councils, and coalitions to enhance social connections. Efforts are underway to develop a Priority Populations Engagement Strategy focusing on specific populations, such as older adults, to address health inequities.

Actionable recommendations

Considering climate change projections for the region and the growing intensity of changes already taking place, there is a pressing need for further action. Through a review of provincial health assessments, a series of stakeholder engagements, and contributions from experts, several recommendations were identified that can strengthen coordination internally as well as externally to improve communication and strategically support climate action.

Seven recommendations were mapped, with a list of over 100 concrete activities, to chart the course for action for SWPH and local partners for the implementation of climate adaptation strategies and approaches aimed at reducing health risks from a changing climate.

1. **Develop a comprehensive and co-produced risk reduction and prevention strategy for extreme weather conditions**. The strategy would encompass all climate-related natural hazards, including extreme heat and cold temperatures. It would incorporate a specific inventory of everyday actions to reduce health risks for vulnerable populations. It would also outline a partnership roadmap and objectives to support action plans.

2. **Review and enhance coordination mechanisms with area municipalities on land use planning**. SWPH would undertake a systematic and rigorous assessment to determine where enhanced coordination would be most beneficial to support climate-related objectives. This analysis can build on the risk reduction and prevention strategy for extreme weather and serve as an avenue to pilot solutions that will help strengthen and refine intra-organizational coordination mechanisms.

3. **Build and strengthen partnerships with agencies, organizations, and individuals beyond jurisdictional boundaries**. SWPH would seek to leverage a broader range of skill sets, capacities, and resources at the municipal, regional, provincial, and federal levels. These partnerships can accelerate progress on actions outlined in this report, particularly in the context of tools, expertise, technology sharing, advocacy for policy change, and harmonizing relevant policies.

4. **Create a communications plan to share up-to-date data on health risk information with recommendations**. SWPH would develop a comprehensive communication plan for the public to protect against health impacts from climate change. This includes air quality data and warnings, beach pollution data and warnings, and, heat and cold weather warnings. Communication is best when targeted and accessible, taking into account language considerations and different population sub-groups.

5. **Establish a monitoring and evaluation framework to assess the impact of climate actions and interventions**. This framework would include the establishment of baseline data on health impacts in the region and link to data on climate-related hazards. It would outline ongoing monitoring of a series of indicators that would be used to, understand risk and opportunities, track progress, and make evidence-based decisions. The framework would establish routine monitoring and evaluation with the community, including vulnerable groups, to assess impact and ensure equitable participation in climate action.

6. **Promote and advocate for social capital building activities**. SWPH would promote and advocate for activities that build the social capital of local organizations and communities to support the implementation of actions that will address many of the health risks associated with climate change, including psychosocial dimensions such as worry, anxiety, and concern for the future.

7. **Develop a climate-compatible sustainable food system strategy**. SWPH can support integrated community action toward a more resilient food system. The strategy may

include but is not limited to, developing a climate change food supply and disaster risk management plan, reducing food waste (household, schools, and community settings), supporting sustainable diets in community settings, providing knowledge exchange opportunities for community partners on the impact of climate change on food systems, and advocating for local and provincial-level policies to support sustainable food systems.

These recommendations emphasize the need for a strong focus on knowledge sharing and translation to enhance equitable climate adaptation solutions. They also highlight the importance of expanding the scope of partnerships to harness complementary skills, resources, and capacities and emphasizing the value of utilizing available tools to inform evidence-based decisions within SWPH.

This report underscores the urgency of addressing climate change impacts on health, particularly for vulnerable populations, and emphasizes the importance of proactive measures to enhance resilience and promote equity. Overall, the report serves as a vital resource for understanding and mitigating the health risks posed by climate change in the SWPH region, guiding policymakers, public health and partners in implementing effective adaptation and resilience strategies to safeguard community well-being.

I. Introduction

According to the IPCC sixth Assessment Report, the rise in global temperatures is causing an increase in the “magnitude and frequency of extreme hot events and decreased magnitude and frequency of extreme cold events”, and that the frequency of these unprecedented extreme events will rise with increasing global warming (Seneviratne et al., 2021). This has resulted in various rapid-onset extreme weather events such as forest fires, severe storms and floods, and an increase in slower-onset natural hazards such as increasing vectors of disease, droughts, and high temperatures (Ibid). This increase of climate change-associated natural hazards has resulted in more local disasters and climate related impacts, and contributed to a surge in health-related risks and morbidity rates, including heat-related illnesses, vector-borne diseases, food and waterborne illnesses, respiratory ailments from air pollution, and mental health issues stemming from extreme weather events (World Science Council, 2021; Berry et al., 2022).

Between 2003 and 2012, Ontario experienced over twenty 'disaster-level’ extreme weather events, including floods, thunderstorms, tornadoes, and winter storms (PHO 2015). According to a study in southwestern Ontario there was an overall 22% increase in emergency department visits between 2002 and 2019 when temperatures reached 33 degrees (Wilk et al., 2021). The study also identified a 35% increase in emergency department visits from gastrointestinal diseases, and hand, foot and mouth disease, predominantly among children, linked to the impact of higher temperatures.

The accelerated changes in the climate have amplified impacts on communities and will continue to pose significant risks to human health and well-being. These changes require a focus on increasing the resilience of communities and systems through adaptation strategies. Adaptation and building resilience are multi-sector challenges, and local public health agencies can play a critical role in helping communities adapt due to their embeddedness and insight into the local context of the region. Public health, alongside all levels of government, community organizations, and key partners will need to design future adaptation measures collaboratively to support broader regional resilience. This vulnerability assessment will provide a foundation to guide decision-making, planning, and implementation for the challenges faced by public health from climate change.

Purpose and Objectives:

This report aims to communicate the results of an assessment of the health vulnerability of the SWPH region to the impacts of climate change. It provides an understanding of the baseline vulnerabilities to climate change in this region, focuses on a range of climate-related health impacts on vulnerable populations, and compiles existing actions and future recommendations for SWPH to consider. Specifically, it has four main objectives:

1. Outline climate associated health risks facing SWPH region.
2. Highlight vulnerable populations in the SWPH region and the potential impacts of climate change.
3. Describe ongoing climate action undertaken by SWPH.

4. Propose recommendations to plan for future climate change impacts.

This climate change and health vulnerability assessment will help identify policies and programs that can increase the resilience of the communities, with a particular focus on those who are most vulnerable to these impacts. Additionally, the assessment and subsequent recommended actions identify a need to address the challenges that climate change poses in exacerbating social and environmental determinants of health, widening health inequities, and resulting disparities.

According to the Healthy Environments and Climate Change Guideline (Ministry of Health and Long-term Care, 2018), vulnerability assessments enhance public health capacity to address risk factors in the environment, including the impacts of climate change. This assessment will help SWPH identify opportunities to incorporate climate change action into existing functions and to develop new programming where necessary to prevent and reduce the severity of future climate-related health risks.

This report, and associated recommended actions, are a critical step in taking proactive measures to mitigate and adapt to climate change and should serve as a tool for planning with community partners to enhance resilience, promote equity, and ultimately safeguard the well-being of individuals and communities now and for future generations.

Through a better understanding of regional vulnerabilities, targeted risk reduction and climate adaptation strategies can be developed. This proactive approach is crucial for building resilience and ensuring a sustainable future for the region in the face of climate change.

Climate changes in Southern Ontario:

Southern Ontario, including the southwestern municipalities of Elgin County, Oxford County and the City of St. Thomas, has already experienced significant changes in the climate over the past two decades, resulting in a range of impacts (Douglas, A.G. and Pearson, D., 2022). While this report primarily addresses the impacts and vulnerabilities of climate change on the southwestern region of Ontario, there is limited climate data available at this scale. As a result, much of the data provided in this section is at the broader scale of southern Ontario that stretches from Windsor-Essex in the southwest, to Manitoulin Island in the north, and east to Ottawa.

Extreme weather events

The average annual air temperature in southern Ontario has increased between 1 to 1.5°C over the past century (Ministry of the Environment, Conservation, and Parks, 2023). With rising air temperatures, precipitation patterns have shifted, resulting in more rain than snow during the winter season (Ministry of the Environment, Conservation, and Parks, 2023). In southern Ontario, flooding is one of the most significant risks to the population and economy. Floods have been documented as the most frequent and costly hazard to communities and municipalities (Douglas, A.G. and Pearson, D., 2022). In 2023, parts of Ontario grappled with an unprecedented flood season, resulting in insured losses exceeding $340 million (IBC, 2023). This included a cold front in southwestern Ontario that triggered severe thunderstorms and produced tornadoes accompanied by sizable hailstones and heavy downpours, and leading to widespread flooding, causing over $30 million in insured damages (Ibid). Similarly, in 2022, a fast-moving severe

thunderstorm hit southern Ontario, Quebec, and New England, causing 12 fatalities and more than $1 billion in insured losses (Pope, 2023).

In addition to the damage to the landscape from these hazards, these events contribute to increased risk of mental health impacts from climate change associated disasters such as increased anxiety, nervousness, depression, panic disorders, and post-traumatic stress disorder in the weeks and months after the disaster occurred (Steeves, 2018).

Vector-borne diseases and waterborne bacteria

In addition, slow onset events such as higher temperatures and prolonged heat waves in the region lead to favorable conditions for increases in certain vector-borne diseases and waterborne bacteria. One example includes the increase in the incidence of Lyme disease in Ontario. Cases have increased from an annual average of 313 between 2012 and 2016; to 1,756 in 2021 and 1,490 in 2022 (Public Health Ontario, 2024; Public Health Agency of Canada, 2019).

Similarly, higher temperatures can lead to an increase in algae growth and cyanobacteria blooms, which can lead to the production of toxins in freshwater sources (Berry et al., 2014), causing symptoms such as abdominal pain, nausea, vomiting, diarrhea, sore throat, and dry cough. Over the past decade, Western Lake Erie has had an increase in the intensity of harmful algal blooms due to warmer water temperatures (NCCOS, 2024).

Wildfires

The incidence of forest fires in the province has risen significantly. In 2011, approximately 120 forest fires were reported in northern Ontario, prompting the evacuation of eight First Nations communities due to smoke inhalation, food shortages, and insufficient food storage capacity (OCCIAR, 2015). According to data from the Ministry of Natural Resources and Forestry (2022), Ontario typically experiences an average of 690 fires per year over a 10-year period. In 2023, this number surged to 741 fires. This increase presents higher risk for communities and possible health impacts. In southern Ontario, the 2023 wildfire season led to decreases in air quality from wildfire smoke. This exposure can cause symptoms such as headaches, dizziness, wheezing, and heart palpitations (Public Health Agency of Canada, 2023a).

Public health considerations

The climate-related changes in southern Ontario have precipitated a cascade of challenges, including escalating flood risks and the recurrence of extreme weather events. These events take a heavy toll on not only the region's economy, but also on public health by exacerbating mental health issues and increasing the incidence of waterborne and respiratory illnesses.

As southern Ontario navigates this evolving landscape of climate-related hazards, proactive measures and comprehensive adaptation strategies will be imperative to mitigate risks, safeguard communities, and foster resilience. In the next sections, this report will present specific details on the projected climate-associated impacts and health risks for the most vulnerable populations in the SWPH region, as well as provide a series of recommendations to outline an action plan for SWPH and their partners.

II. Methodology

This section outlines the research methods utilized to conduct the assessment. It includes details on project governance, the literature review, baseline health and adaptation data, and the process for engaging key partners to provide input on the assessment.

Project Governance

SWPH works with municipalities, community agencies, health and social services, schools, and other local partners to ensure the health of the residents of Oxford County, Elgin County, and the City of St. Thomas. SWPH programs respond to public health emergencies; promote healthy lifestyles; help prevent injuries, morbidity, and disease; and promote positive change and social conditions that improve health for everyone. SWPH delivers mandated programs under the Ontario Public Health Standards and is regulated by the Ontario Health Protection and Promotion Act. SWPH is one of 34 public health units serving the province of Ontario. SWPH is funded by the Ontario Ministry of Health and local municipalities and is governed by a Board of Health.

SWPH partnered with the University of Waterloo's Climate Institute to undertake a vulnerability assessment aimed at identifying and addressing specific health vulnerabilities associated with climate change in the SWPH region. The project team and expert researchers from the University of Waterloo combined efforts with representatives from SWPH to oversee the creation of this assessment. This partnership is an example of combining capacity and expertise through interdisciplinary collaboration to better understand climate-related health risks and develop evidence-based recommendations for addressing these risks and contributing to broader climate change adaptation and mitigation strategies.

The assessment gathered data and insights to draft a roadmap for informed decision-making in addressing climate-related health challenges. The research design and assessment process included: a comprehensive review of existing health vulnerability assessments in the province, an academic literature review, a series of facilitated discussions with SWPH staff and regional representatives, and expert contributions to the analysis and recommendations presented in the report.

Literature review

A comprehensive literature review was conducted, including a review of existing climate change and health vulnerability assessment reports, grey literature, and scholarly peer-reviewed articles. The peer-reviewed literature was scrutinized for examples of climate change adaptation activities undertaken in similar jurisdictions. The climate change impacts review involved a high-level systematic examination of academic literature, public health data, and climate change datasets to investigate the current climate change and health impacts in Ontario, with a particular focus on southwestern Ontario. The review aimed to establish an understanding of the key climate change hazards affecting the region and their associated health impacts.

A total of 13 climate change and health vulnerability assessments were reviewed, encompassing 20 health units within Ontario. The publication dates for the reports assessed ranged from 2012 to 2022 (See Appendix B for a summary of this analysis).

Climate projections for this assessment were informed by the SWPH Climate Science Report (See Appendix A), which was compiled through a separate project conducted by SWPH. Projections were collected for the regions of Oxford County, Elgin County, and the City of St. Thomas for extreme temperature, precipitation, air quality, and ultraviolet radiation in May 2023.

Internal and External Advisory Committee Engagement

In addition to the literature review, this report was informed by an internal and external advisory committee involving representatives from various local organizations and staff from SWPH working in climate change-relevant program areas. To facilitate discussion, the results of the literature review and existing vulnerability assessments in Ontario were shared, along with climate projection data for the region. The internal and external advisory committees provided input and feedback on possible actions, identified vulnerable populations, and informed the final recommendations. A total of 22 individuals from different local organizations participated in the multiple sessions (See Appendix E and F). A list of activities was generated through input from the advisory committee and through reviews of the scientific literature and best practices. The facilitated discussion also helped to identify priorities and gaps that would inform the development of an overarching series of recommendations.

The process was guided by three main criteria used to evaluate the actions, including:

- suitability (or fit) of the action for the region;
- how well the action addresses local needs; and
- the potential impact of the action on reducing vulnerability.

The engagement process emphasized the need for a strong commitment to equity, the importance of considering inequities in addressing climate change vulnerability and identifying recommendations that are actionable and tangible.

Expert Review and Contributions

Academic experts in climate change adaptation, disaster risk reduction and public health were enlisted to provide expert review and contribute specialized knowledge to ensure the robustness and accuracy of the assessment. These experts provided insights, validated findings, and contributed their expertise to enhance the overall quality of the report.

Limitations

This report has taken an evidence-based approach. There are some limitations to the report that should be taken into consideration when reviewing its contents.

Literature review limitations

The climate change and health vulnerability assessments that were reviewed do not include all vulnerability assessments conducted in Ontario, as the collection of assessments relied on the availability of documents and willingness to share if assessments were not public.

Internal and external advisory committee engagement limitations

While the external advisory group represents various organizations relevant to the natural, economic, social, and built environments of the SWPH region, and individuals who work in climate change-relevant areas, the number of committee members is limited, due to the timeframe of the project.

In addition, not all committee members were able to attend all meetings. To address this, opportunities were provided for committee members to provide feedback via email.

During the second meeting with both the internal and external committees, recommendations were collected on a virtual platform that remained open for 48 hours after the meeting to allow for input from those not present. All recommendations were inputted anonymously, and as such, ideas cannot be attributed to specific participants.

Data limitations

The information presented in this report captures the best available data present at the time of writing and therefore should be taken into consideration while reading. Health data does not always capture data directly related to climate hazards. Yearly data and trends from health data help illustrate impacts experienced from climate-related health risks. In addition, health data was not always present for the exact geographic location covered by SWPH. Larger databases for the province and area help to inform the findings of this report.

III. Impacts and Health Risks of Projected Changes in the Climate

The Climate Science Report prepared for SWPH in 2023 (Abedin, 2023) outlines in detail the changes projected in the region over the next several decades. These include shifts in temperature, precipitation patterns, and extreme weather events.

This section summarizes the main changes in the climate in southwestern Ontario (for a full description of these changes, the reader is directed to the SWPH Climate Science Report (Abedin, 2023)). In addition, this section presents the risks and human health-related impacts posed by climate change.

Extreme Temperatures

Extreme heat

The global surface temperature has risen by an average of 0.06 C per decade since the 1850s and accelerated three times as fast (0.20C) per decade (NOAA, 2022). The Climate Science Report indicated it is expected, that by the 2080s, Oxford County, Elgin County and the City of St. Thomas, will experience a significant rise in the number of days surpassing 32C. By the 2080s it is expected that Oxford County will have 55 annual days surpassing 32C, which is 52 more days than the baseline of 3 days experienced now. Similarly, Elgin County and the City of St. Thomas will have 51 days surpassing 32C, which is 49 days more than the baseline of 2 days. These findings emphasize the importance of readiness and preparedness in the study region, as it needs to adapt to a future where sustained extreme high temperatures will become increasingly regular during the summer.

Extreme heat can be experienced both temporally and spatially, therein increasing exposure and associated health risks. Examples include:

- heat waves: comprising of multiple days of extreme heat in succession.
- urban heat island profile: attributable to a large excess in heat from the rapidly heating urban surfaces consisting of buildings, asphalt, bare-soil and short grasses.
- extreme heat: temperature thresholds for heat warnings in southern Ontario are 31 degrees C during the day, and 20 to 21 degrees C in the evening for two or more consecutive days (Public Health Ontario, 2023).

Rising temperatures have an impact on air pollution, water security, and the spread of vector-borne diseases across geographical areas (Berry et al., 2022). High temperatures can significantly influence various health consequences, including heat-related morbidities/illnesses, and can occur as a result of both local environmental changes and global climate change. Heat-related morbidities can develop quickly, have a negative impact on long-term health, and even be fatal (Mora, 2017).

Extreme heat can worsen pre-existing medical conditions like cardiovascular and respiratory diseases, raise the risk of stroke, and make people more vulnerable to infectious diseases (Smoyer-Tomic and Rainham, 2001; Health Canada, 2020). Prolonged exposure to excessive heat can cause dehydration, heat exhaustion, heat stroke, heat edema, reduced coordination, fatigue, nausea and worsen respiratory morbidities/illnesses (Gauer and Meyers, 2019). Moreover, extreme temperatures are associated with deteriorating mental health and an upsurge in violent incidents.

Extreme cold

As described in the Climate Science Report prepared for SWPH in 2023, the occurrence of extreme cold days with minimum temperatures below -15C is declining (Abedin, 2023). Across Oxford County, Elgin County and the City of St. Thomas, the total number of extreme cold days is expected to decrease in all three emission scenarios from 2040 to 2099. Extreme cold days in Oxford County will decline to 0 days by the 2080s, which is 14 days less than the baseline. Similarly, Elgin County and the City of St. Thomas will have zero days in the 2080s with minimum temperatures below -15C (Ibid).

Similarly, the number of frost days (minimum temperatures below 0C) are expected to decline by up to 70 days by the 2080s under the emission scenarios in Oxford County and decline by 73 days to 55 days in Elgin County and the city of St. Thomas respectively, from the baseline of 128 days. Frost and ice days help in understanding the patterns of freezing and thawing in each region and the risks involved, such as the likelihood of accidents and injuries brought on by icy conditions, including traffic collisions.

While extreme cold days will become less frequent in the coming years, it remains crucial to prepare for and manage the potential health impacts associated with extreme cold conditions. Extreme cold can result in frostbite, hypothermia, and the potential aggravation of pre-existing medical conditions.

Declining cold temperature days (and increased temperatures overall) could result in increased tick population survival and spread, and related spread of tick-borne diseases, as tick activity period lengthens along with increases in tick reservoirs and hosts, and increased length of human exposure periods (Bouchard et al., 2019).

Extreme Weather Events

Ontario is subject to extreme weather events such as storms, floods, and droughts. The SWPH Climate Science Report refers to an extreme weather event as a meteorological occurrence that surpasses the typical range of activity, and is rare in a particular place and season, such as a severe storm, hailstorm, tornado, heatwave, or flood (Abedin, 2023).

It is expected that in Ontario there will be an increase in total precipitation annually by the 2080s. Most of this increase will take place during the spring, fall and winter seasons and it will decrease in summer. By the 2080s, it is anticipated that Oxford County's baseline average of 914 mm will increase to between 991 mm and 1018 mm (Abedin, 2023). The Elgin County and City of St.

Thomas baseline average of 915 mm is predicted to rise to between 1000 mm and 1024 mm by the 2080s, indicating that both regions will see an increase in total precipitation (Ibid).

In Oxford County, one-day accumulations of precipitation are projected to increase from the baseline of 41.1mm to 49.4mm by the 2080s, while five-day accumulations are expected to increase from the baseline of 69.6mm to 83.5mm. Elgin County and the City of St. Thomas are also anticipated to experience an increase in the maximum five-day events from a baseline of 71.3 mm to 77mm in the 2050s and 84.2 mm in the 2080s (Ibid).

The possibility of winter floods, slippery conditions, and flash freeze events is expected to rise due to increased precipitation during the colder months, especially heavy rainfall events. This will lead to extremely wet days when total precipitation (rain and snow) is equal to, or more, than 20 millimeters. It is anticipated that for the SWPH region, extremely wet days will increase from the baseline of 8 days to 11 days by the 2080s (Ibid).

The direct impacts on health from extreme weather events can include non-communicable diseases such as, respiratory, and cardiovascular diseases, and mental health impacts, as well as injuries, and mortality (Berry et al., 2022). Severe flood events can increase the risk of disease outbreaks linked to contaminated drinking water as runoff and storm water overflow can increase contaminants in surface water (Gosselin et al., 2022). Outbreaks of food and water-borne illnesses are more likely to increase as a result of the combination of hotter, drier summers and intense precipitation events (Berry et al., 2022).

Poor Air Quality

Air quality measurements conducted in Canada and Ontario over the past few decades have shown notable decreases in harmful air pollutants attributed to emissions from vehicles and industries. However, air quality is subject to fluctuations on an annual basis due to multiple factors including, pollutant emissions, weather conditions, extreme events such as forest fires, and the transport of air pollutants from the United States and other regions.

Despite relatively lower pollution levels in Ontario, air pollution continues to place a heavy burden on disease, highlighting the significance of addressing this issue. An estimated total of 15,300 premature mortalities occurs in Canada each year, out of which approximately 6,600 occur in Ontario, as a result of the presence of three major air pollutants: fine particulate matter (PM2.5), ozone, and nitrogen dioxide, with an economic cost of $114 billion (Egyed et al., 2022; Health Canada, 2021). It is recognized that being exposed to significant air pollutants, such as ozone and PM2.5, increases the risk of many adverse health effects. These outcomes can range from respiratory symptoms to the development of diseases and premature mortality, and may be impacted by changes in the climate, especially from increases in ozone and wildfire smoke.

Ultraviolet Radiation

Ultraviolet (UV) radiation exposure causes sunburn, eye cataracts, aging skin, and skin cancer and is influenced by both the length of time spent in the sun and its intensity, as measured by the UV Index (Environment and Natural Resources Canada, 2021). The impact of climate change will

not have a worsening effect on the relationship between ozone depletion and exposure to ultraviolet radiation (UVR), and there is currently limited certainty that climate change will significantly affect the factors that influence UVR exposure (Bais et al., 2019). A high UV index during the summer, spring, and autumn seasons is a cause for concern as people spend more time outside in these seasons.

Projected warmer than average temperatures due to climate change will increase the days people will spend outdoors, which increases their overall exposure to UVR.

Risk from Vector-borne and Zoonotic Diseases

According to Public Health Ontario (2024), vector-borne and zoonotic diseases are those "caused by viruses, bacteria or parasites that are transmitted to humans from animals or insects. Some diseases that originate in animals must be transmitted through a 'vector', for example a mosquito or tick to infect a human." As temperatures rise, a more suitable environment for vectors to thrive is created, causing concern for human health (Ogden et al., 2022).

In recent years, the SWPH region has become a favorable habitat for mosquito species that can transmit West Nile virus to humans and for tick species capable of transmitting Lyme disease. In addition to these 2 diseases, public health is monitoring for other emerging vector-borne diseases. An example of this is the addition of 3 new tick-borne diseases to the list of Diseases of Public Health Significance, in 2023 (Public Health Ontario, 2023) As the projected average temperature during winter months increases, new species of vectors capable of transmitting diseases to humans are expected to become established in the SWPH region. Some of these diseases can cause serious illness and even death (Lindsay, L.R, 2016).

Avian Influenza is a contagious viral infection that mainly affects birds but can, on occasion, infect humans and other mammals. Human infections with Avian Influenza are rare and usually occur after close contact with infected birds or highly contaminated environments. These viruses can cause severe disease in humans and have the potential for genetic mutation (Public Health Agency of Canada, 2023b). In the context of climate change, where migration routes and seasons are changing, previously separate migratory bird populations are now encountering one another, increasing the probability that new virus variants will emerge (Sharif and Wichtel, 2022).

Psychosocial Impacts of Climate Change

Climate change is increasing the risks to the psychosocial health of Canadians, which can impact the way people think, act, feel, and interact. In a scoping review of literature that explored risks, impacts and vulnerabilities related to climate change and health, mental health outcomes included: post-traumatic stress disorder (PTSD), anxiety, depression, complicated grief, survivor guilt, recovery fatigue, and suicidal ideation from extreme weather events (Hayes et al., 2019).

Psychological impacts also include weakened social ties, increased stress levels, substance misuse, aggression and violence related to resource scarcity (Hayes et al., 2019). There is also a rise in ecoanxiety, specifically looking at emotions such as worry, anxiety, and feelings of

impending doom which are becoming a growing concern for communities and individuals (Hayes et al., 2019).

The impacts of climate-related distress are rising among all age groups and regions, requiring further understanding on how climate impacts, environmental racism and structural determinants of health intersect to shape health and wellbeing (Majeed and Lee, 2017). Climate stress among vulnerable populations is varied, long-lasting and affects many domains of life (e.g., livelihoods) (White et al., 2023).

Populations who are land-vulnerable (dependent upon land and natural resources for livelihoods) are particularly susceptible as the impacts and threats of climate change to their livelihood lead to significant consequences such as anxiety, depression and solastalgia which is a loss of connection to land, and a sense of place (White et al., 2023). A global integrative review on mental health impacts of climate change suggests that land-vulnerable populations, Indigenous persons, children, older adults and climate migrants are disproportionately affected by climate change and mental health impacts (White et al., 2023).

The frequency and intensity of extreme weather events can lead to the loss of home, loved ones, and other challenges which are linked to an increase in anxiety, depression, and post-traumatic stress (Clayton, 2021). The Climate Atlas of Canada (2023) describes three pathways in which climate change can impact mental health: experiences of extreme weather events, experiences of environmental change, awareness and exposure to climate change information.

The Canadian Index of Well-being uses environmental indicators such as the ecological footprint, absolute greenhouse gas emissions, residential energy use, ground level ozone, primary energy production, viable metal reserves index, total farmland (hectares), annual water yield in southern Canada to provide warning signs about how Canadians are using the environment to better the wellbeing of people (Smale and Hilbrecht, 2010).

City policies for climate change mitigation that focus on reducing greenhouse gas emissions are likely to have impacts on the wellbeing of populations (Hiscock et al., 2014). For example, industrial policies that encourage cleaner industries lead to less emissions of air pollutants in the city (Hiscock et al., 2014). Cleaner air can have an impact on health and well-being, and may also have indirect impacts on social capital, productivity, accessibility, and unemployment (Hiscock et al., 2014).

IV. Climate Impacts on the Most Vulnerable Populations

Certain population subgroups and communities in Canada are more severely affected by climate change because of varying exposure, sensitivity, and ability to take protective measures against hazards (Berry et al., 2022). In the results of the existing climate and health vulnerability assessments, the Waterloo Region, Wellington County, Dufferin County, and the City of Guelph report (Buset et al., 2022) highlighted that intersectional features of individual and group identities (e.g., race/ethnicity, sex/gender, education, employment, etc.) may lead to different psychological and ill-health outcomes, as well as the lack of ability to adapt during periods of exposure to climate change impacts. Intersectionality recognizes how systems of oppression (e.g., racism, sexism, homophobia) interact to influence the individual and structural determinants of health (NCCDH, 2022).

Vulnerable populations may experience multiple forms of discrimination and disadvantage, influenced by systemic forms of stigmatization, discrimination, or oppression that may influence the political, social and cultural marginalization of certain communities (Buse et al., 2022; NCCDH, 2022). They experience health vulnerability as they are exposed to multiple layers of overlapping marginalization that increase risks to health (NCCDH, 2022). These unequal distributions of inequities interact with the social determinants of health, rendering them health detriments.

The climate change and health impacts relevant to each vulnerable population were identified through the comprehensive review of vulnerability assessments. It is recognized that in the Climate Science Report, there is a section listed as populations who are deemed vulnerable by Health Canada (2022). However, the following list was compiled through the external and internal advisory committee consultations to be more specific for what is currently a concern and a priority population in the region.

Amish Communities

The Amish Communities are not directly identifiable in the Census. In the SWPH region there are two Amish settlements, estimating a population of approximately 1,500. Amish are an Anabaptist religious group that believe in adult baptism, are pacifist and lead a low-tech life which relies on community for all their physical and emotional needs. They diligently pay their taxes, but they do not use government services such as the Ontario Health Insurance Plan (OHIP) to access healthcare services.

From the review, the Amish were not identified as a standalone population. However, the Amish population may have a unique population concern for extreme temperatures because of their lower reliance on mechanical heating/cooling, high involvement in the agriculture industry, and a high degree of outdoor exposure. However, it was noted that this community may also be more equipped to adapt due to their existing familiarity with local weather patterns and behavior towards helping neighbors and community connections. Specifically, more information is required to

understand how vulnerable this group would be to the impacts of extreme temperature, extreme weather events, and psychosocial impacts to understand this population's resilience.

Low-German Speaking Mennonite Communities

The Low German Speaking (LGS) Mennonite Community has been identified as a population of importance in Elgin and Oxford with an approximate estimate from 2002 that suggests 500 reside in Oxford County, and 12,000 reside in Elgin County (Haile and Funk, 2019). The LGS community represents a range of religious values and perspectives which vary in their level of religious conservatism.

They work predominantly in the agricultural sectors, with increasing numbers of LGS Mennonites migrating and settling in Ontario (Haile and Funk, 2019). Regarding healthcare access, LGS Mennonites opt to not have Ontario Health Insurance Plan (OHIP) coverage and do not access private health insurance. Families are paying out of pocket for many health care services. (Haile and Funk, 2019).

Like the Amish communities from our review, the LSG Mennonites were not identified as a standalone population. However, they face similar problems as the Amish communities as they are also highly involved in the agriculture industry and use limited/or no technology in their day-to-day lives. More information is still required to understand the vulnerabilities of this population group.

Immigrants

Statistics Canada defines immigrants as "persons who are, or who have ever been, landed immigrants or permanent residents" (2021). Compared to Ontario (30%), the proportion of immigrants in the SWPH region is much lower at 11.4% in Oxford County, and 11.7% in Elgin-St. Thomas (Statistics Canada, 2021).

Since the Canadian census is conducted once every five years, recent immigrants are usually referred to as immigrants from the last five years, which in the most recent census is from 2016 to 2021. The proportion of recent immigrants in the SWPH region is lower than Ontario (4.2%), with 1.1% in Oxford County, and 0.8% in Elgin-St. Thomas (Statistics Canada, 2021).

In the region, immigrants are most commonly from Mexico, the United Kingdom, the Netherlands, the United States and Germany, while recent immigrants (since 2016) are most commonly from India, Mexico, the United States, Jamaica and the Philippines (Statistics Canada, 2021).

While immigrants may have better health than Canadians due to the "Healthy Immigrant Effect," immigrants may find themselves to experience poor health due to discrimination (MacLeod and Hussain, 2019a). The Healthy Immigrant Effect refers to the phenomenon that recent migrants are in better health than the non-migrant populations in the host country (Ichou and Wallace, 2019).

Indigenous communities

According to the SWPH Understanding the Community Report, individuals who hold indigenous identity include people who identify as First Nations, Metis, or Inuik (Inuit) and/or people who have membership in a First Nation or Indian band. The proportion of people who identify as Indigenous in the region is 2.3% respectively, however, the proportions from the census may underestimate the reality of Indigenous populations. Indigenous peoples often experience a disproportionate burden of ill health compared to non-Indigenous people.

Indigenous peoples have confronted numerous historical discriminatory measures, leading to persistent health disparities within their populations (NOCCH, 2022). These communities are made vulnerable by geographic isolation, which contributes to many direct impacts such as extreme heat, susceptibility to extreme weather events, and indirect impacts such as access to services and food (NOCCH, 2022). Events related to the loss of land may also carry a significant cultural impact to their physical, psychosocial, and socioeconomic wellbeing, including their livelihood (e.g. dietary shifts due to availability and quality of traditional foods, identity, and cultural practices) (NOCCH, 2022). The potential impact on the Indigenous community's connection to the land is substantial, with an increased sensitivity to the mental health impacts of climate change such as substance misuse, increased rates and severity of mental illness, loss of intergenerational knowledge, and suicidal ideation (Buse et al., 2022).

LGBTQ2S+ community

Sexual orientations and gender identities that are not heterosexual or cisgender are often described by the acronym LGBTQ2S+. LGBTQ2S+ is an acronym that stands for Lesbian, Gay, Bisexual, Transgender, Queer or Questioning, and Two-Spirit.

The Waterloo Region, Wellington County, Dufferin County, and the City of Guelph Climate Change and Health Vulnerability Assessment (2022) reported that people who identify as LGBTQ2S+ have elevated risks of suicide and self-harm, which is particularly important when taking future actions on the mental health impacts of climate change. Like other identified groups of people who live in marginalizing conditions in SWPH region, the LGBTQ2S+ community are more likely to live and work in risk-prone areas due to social, economic, and structural factors that limit their economic opportunities.

The experiences of LGBTQ2S+ people in accessing care and utilization of care are preexisting disparities that influence further exposures to poor air quality, more susceptible psychosocial health impacts from climate events and more likely to develop comorbidities due to weakened immune systems (Mann et al., 2023). Existing socioeconomic disparities may hinder their willingness to seek medical care during and immediately after severe weather events and impact their ability to engage in adaptive protective behaviors such as the ability to afford air conditioning and air purifiers (Mann et al., 2023).

Men

According to Statistics Canada (2021), “Men+” includes men, boys, and some non-binary persons. In the SWPH region, 49.2% of the population identify as men+. Findings from our review of existing vulnerability assessments reveal that men are particularly vulnerable to psychosocial health impacts related to climate change.

Men are more vulnerable to the impacts of psychosocial health due to elevated suicide rates. In the SWPH region, rates of emergency department visits and hospitalizations for suicide and self-harm were higher compared to Ontario between 2015 to 2017 (Figure 6) (MacLeod and Hussain, 2019b). Men are also more likely to be employed in outdoor occupations, and therefore may face distress due to impacts associated with loss of livelihoods (Region of Waterloo, 2022).

International Agricultural Workers

The Temporary Foreign Worker Program allows employers in Canada to hire international agricultural workers (IAWs) to fill jobs when qualified Canadians are not available (Government of Canada, 2023). IAWs workers come to the region on an annual basis from Barbados, Eastern Caribbean, Jamaica, Mexico, Trinidad, and Tobago (F.A.R.M.S., 2024). Although IAWs return to their country of origin after harvest, while in Canada, they face an array of issues that may result in increased vulnerability. They are often isolated (separated from their families and communities), work long hours and face barriers such as language, poor housing conditions, mobility problems, and cultural differences which exacerbate social exclusion and vulnerability (ST-ELIP, 2012).

While IAWs were not specifically named as a vulnerable population in vulnerability assessments from other health units, they face similar vulnerabilities as outdoor agricultural workers. IAWs are exposed to extreme heat, extreme weather events, poor air quality, and ultraviolet radiation due to working in outdoor conditions. In Colorado, US, researchers linked heat effects and clinic visits among migrant and seasonal farm workers (Zhang et al., 2016). They are particularly vulnerable to the health impacts of extreme heat due to poverty, an aging population, and limited health insurance coverage (Zhang et al., 2016). Additionally, other researchers argue that while there is very little research on the vulnerability of migrant workers to climate change impacts, the nature of their work classifies them as communities who are made vulnerable by systems of oppression, exacerbated by poor housing and a lack of social networks (Montz et al., 2011).

IAWs who live in vulnerable conditions are also exposed to vector-borne diseases. Additionally, due to low utilization of health services, diagnosis and treatment for vector-borne diseases may be delayed (Danis et al., 2013).

Furthermore, food insecurity is particularly prevalent among migrant and seasonal farm workers in the US (Kiehne and Mendoza, 2015). Researchers in Georgia, US, found low socio-economic status to partially account for the difference in rates of food insecurity between migrant and seasonal farm workers, and the general population (Hill et al., 2011). They also found that some migrant and seasonal farm workers lack access to household amenities (e.g., proper food preparation and storage facilities) (Hill et al., 2011), which may also exacerbate vulnerabilities to food-and-water-borne illnesses.

IAWs face unique challenges related to psychosocial health as they are more likely to be exposed to precarious employment, language barriers, employer discrimination, lack of social support, and lack of knowledge on the local health system (Doki et al., 2018; Hall et al., 2019; Koseoglu Ornek, 2022). A systematic review revealed that they are exposed to poor interpersonal relationships, a lack of workers' rights, and low income, which all exacerbate negative psychosocial health outcomes (Koseoglu Ornek, 2022).

Older Adults

As demographics continue to shift, understanding the age composition of populations becomes increasingly vital for healthcare planning and resource allocation. Statistics Canada categorizes age into three general groups: (1) 0 - 14 years, (2) 15 - 64 years, (3) and 65 years and over. In this section, older adults are categorized as those who are 65 years or older.

Compared to Ontario (18.5%), the proportion of adults aged 65 and over is higher in Oxford County (20%), Elgin County (20.4%), and the City of St. Thomas (21.3%) (Statistics Canada, 2021). Also, the population of older adults is expected to increase from 40,673 people to 49,697 from 2019 to 2025 (MacLeod and Hussain, 2019b).

Older adults may face increased risk of poor health outcomes. For example, those aged 65 years and older are more likely to develop invasive pneumococcal disease, which is an infection of the ears, sinuses, or lungs (MacLeod and Hussain, 2019b). Older adults are also particularly vulnerable to extreme heat events and extreme weather events.

Outdoor workers/Outdoor farm workers

Compared to Ontario, Oxford and Elgin County have a higher proportion of people employed in the sectors of agriculture, forestry, fishing and hunting and construction (Table 12). Outdoor workers (e.g., construction, agriculture, forestry, and similar work environments) are more exposed to extreme temperatures and its associated health risks (Berry et al., 2022).

Between 2005 and 2010 in Los Angeles County, California, researchers found strong associations between rates of heat-related emergency room visits and hospitalizations, and the proportion of residents working in outdoor conditions during heat events (Riley et al., 2018). In Canada, from 2001 to 2016, each 1°C increase in the maximum daily summer temperature also increased the number of daily heat-related morbidities claims due to occupational health and safety compensation agencies by 28% to 51% in Quebec, Ontario, Manitoba, Saskatchewan, and Alberta (Adam-Poupart et al., 2021). Furthermore, outdoor workers are vulnerable to extreme weather events, vector-borne diseases (e.g., Lyme disease and West Nile virus), poor air quality, and ultraviolet radiation due to increased exposure. While the long-term health impacts of poor air quality exposure are still unknown, increasingly poor air quality exacerbated by climate change (e.g., wildfire smoke and excessive ozone) pose significant health risks to those who work outdoors (Bice et al., 2024). Additionally, with extended time spent outdoors, outdoor workers often exceed recommended levels of UV exposure, leading to higher risks to developing skin cancer (Modenese et al., 2018).

Agricultural workers who are in contact with animals and livestock may be vulnerable to food-and-water-borne illnesses as they may be at a higher risk of exposure to pathogens (York Region, 2020). Additionally, they may be more vulnerable to food-and-water security impacts as seasonal variability may affect agricultural production (City of Ottawa, 2022).

Since climate change affects resource-based industries, certain outdoor workers may be more at risk of psychosocial health impacts of climate change as they may experience emotional distress related to job insecurity (Berry et al., 2022). For example, in Alberta, workers report severe emotional distress as they contemplate the collapse of the traditional sectors (Mouallen, 2015).

People experiencing homelessness

The Canadian Observatory on Homelessness defines 'homelessness' as the "situation of an individual, family, or community without stable, safe, permanent, appropriate housing, or the immediate prospect, means, and ability to acquire it. People experiencing homelessness are particularly vulnerable due to a lack of structural safety, poverty, stigmatization, and may also have pre-existing conditions, such as loss of employment.

People experiencing homelessness can be found across urban and rural areas, where they find themselves living temporarily with friends, families or in emergency shelters. SWPH's health priorities include access to high-quality, safe, and affordable housing as it can impact health and well-being. SWPH's Community Profile Report (2023) also identifies affordable housing as spending not more than 30% of before-tax-income on shelter. In the SWPH region, about 1 in 10 households live in unsuitable, inadequate or unaffordable housing (cannot afford a suitable alternative due to their income) with approximately 17% of the people spending 30% or more of their income on shelter costs. In Elgin County and St. Thomas, there is a wait time of 7 to 10 years for a one-bedroom and two-bedroom rent-geared-to-income (RGI) unit. RGI housing is a unit for which the tenants pay no more than 30% of their household income in rent. In Oxford County, the wait time is 3 to 5 years.

The lack of adequate shelter can compound the health risks of climate change impacts as people who are homeless are the most exposed to weather events. Geographic locations (including locations of homeless encampments) are key factors increasing exposure and vulnerability to multiple climate hazards (Ministry of the Environment, Conservation and Parks (MECP), 2023). The climate risk score for the unhoused population in the southwest region (calculated based on census data for Essex) in Ontario is classified as high with projections in the 2050s and 2080s as very high (MECP, 2023). People experiencing homelessness may have also been indirectly impacted through climate economy impacts such as loss of local employment sectors (i.e., changes in agriculture) (MECP, 2023). This can have cascading impacts related to the number of people experiencing housing insecurity.

Exposure to extreme heat, water insecurity, UVR, etc., have greater prevalence in weather-exposed populations such as people experiencing homelessness as they may be inadequately able to protect themselves due to material disadvantages (Kidd et al., 2023). These risks influence outcomes of morbidity, mortality, injury, violence exposure and mental health issues which are further exacerbated by traumatic events (Kidd et al., 2022). Homelessness is also associated with

migration (planned vs unplanned) and climate shocks can influence rural-urban migration, and urban-urban migration due to climate-change related events, which can lead to psychosocial burdens (Kidd et al., 2022).

People living below the poverty line

SWPH's Community Profile Report (2023) identifies a population as low-income through the low-income measure after tax (LIM-AT) which is defined by Statistics Canada as a fixed percentage (50%) of median adjusted after-tax income of households observed at the person level, where 'adjusted' indicates that a household's needs are taken into account (Statistics Canada Website). In the SWPH region, 8.8% of the proportion of the population is considered low-income but it is recognized that this may not capture the accurate proportion of the population that are struggling to make ends meet. Because the LIM-AT is a relative measure, a household can be in the top 50% of incomes in the region, but still not be making a living wage and still not be able to make ends meet. SWPH's Understanding of our Communities Health Report (2019) operationally calculates individuals living below the living wage. The living wage calculation uses many data sources and includes Housing Affordability Data from the 2016 census. In 2015, about 1 in 10 people (9.3%) living in the SWPH region were living in poverty. The living wage was calculated for Oxford County, Elgin County and the City of St. Thomas ($18.85), which was higher than the current minimum provincial wage ($15.65). Low income is a strong predictor for poor health outcomes, and the existing vulnerability is exacerbated to climate variability with its impacts to their livelihoods.

Research has identified that the health of individuals living with low income may be linked to the impacts of climate change as they may have poor housing conditions and shelter (SMDHU, 2017). In events related to flooding and post-flooding living conditions, people living under the poverty line may not have flood insurance in their rental home or low-income housing which may also experience exposure to mold (WECHU, 2019). Individuals living below the poverty line will have the highest rates of household food insecurity due to the impacts to the contamination and availability of food and water, which influence the increased food pricing due to changes in global food production (SMDHU, 2017).

Additionally, the occurrence of hotter and more humid days for extreme heat events may also result in changes to community services such as the cancellation or postponement of public events and closures to buildings that do not have adequate air conditioning (e.g., daycares, churches, schools) (City of Ottawa, 2022). These changes have disproportionate impacts on low-income individuals and families who rely on low cost/free outdoor community activities to build social connections (City of Ottawa, 2022).

Women, especially single-parent households

Gender refers to an individual's personal and social identity as a man, woman or non-binary person (Statistics Canada, 2021). "Women+" in the Census data includes women, girls, and some non-binary persons. In the SWPH region, 50.1% of the population identify as women+.

More specifically, pregnant people are particularly vulnerable to the impacts of climate change due to increased sensitivity to hazards (Berry et al., 2022). To start, extreme temperatures may impact community services (e.g., a decrease in outdoor recreation and the temporary closure of buildings that do not have air conditioning such as daycares and schools), which may disproportionately impact women, children, and infants (City of Ottawa, 2022).

Furthermore, pregnant people are more sensitive to the impacts of extreme weather events as these events can cause stress during pregnancy, and prolonged effects on essential services may also have consequences for the unborn child (Berry et al., 2022).

Pregnant people are also more sensitive to adverse health outcomes of vector-borne diseases, for example, Zika virus can lead to birth defects (Grazel and Harris-Haman, 2018).

Similarly, pregnant people are more vulnerable to food-and-water-borne illnesses and food-and-water security as they are more sensitive to nutritional deficiencies and morbidities caused by microbial pathogens (Adhikari and Kharel, 2018; Berry et al., 2022). Food-borne illnesses can cause miscarriage, stillbirth, premature delivery, and other neurological effects on the fetus, mother, and the newborn (Adhikari and Kharel, 2018).

Poor air quality is also projected to have disproportionate impacts on pregnant people as research has found associations between maternal exposure to ambient air pollution and adverse birth outcomes (e.g., preterm birth) (Wu et al., 2016).

V. Existing Climate Change Adaptation and Disaster Resilience Actions

SWPH has a range of actions already in place or being planned that support reducing the health-related impacts of climate change. This section outlines what SWPH is doing to address the risks and impacts of climate change on people's health. The information was compiled from a 2024 activity report provided by SWPH and from brief interviews with key SWPH staff.

Partnerships for climate action

Achieving some of the needed outcomes for protecting people and reducing risk from climate change-associated health impacts requires strategic and meaningful collaboration with a wide array of partners across the public, private and non-profit sections. SWPH has established working collaborations with different groups, such as Health Equity Partners, the Social Determinants of Health Nurses Group, and the Low German Speaking Mennonite Community of Practice to reach people who live in vulnerable conditions in the region.

Further, SWPH draws on partners to collect and disseminate data to make better informed decisions around the health of different groups in its communities, including those with low income to ensure its plans and programs are responsive to these community members. For example, SWPH works with the Ontario Dietitians in Public Health Food Insecurity Workgroup to conduct annual Nutritious Food Basket (NFB) data collection. This data will be shared with the Ontario Living Wage Network to determine a regional Living Wage calculation for London-Elgin-Oxford and used to mobilize efforts to support adequate income solutions.

Beyond the data, SWPH has focused on the underlying factors of vulnerability in the region. The health unit works together with local poverty reduction groups to raise awareness and advocate for the living wage payment, which supports creating economic benefits for households and helps strengthen local resilience.

In collaboration with Ontario Dietitians in Public Health, SWPH is conducting research on effective land use planning policies at the municipal level for equitable and sustainable food systems. Evidence from this report will be used to develop food accessibility policy statements that can be used at a local level. Beyond municipalities, SWPH has sought to work with local organizations, community partners, and community members to develop a local food systems network in the region to establish a shared vision to support community food security through the development of a food charter and a food system strategy, including advocating for more climate compatible plant-based diets.

Better understanding of health risks from climate change

In the realm of public health and environmental stewardship, SWPH initiatives aim to address the challenges posed by climate change and safeguard the well-being of communities. Through surveillance and monitoring, SWPH tracks heat and cold-related emergency visits and

hospitalizations with a particular focus on identifying high-risk populations, allowing for targeted interventions and optimized resource allocation. The implementation of an early warning system, called RAVE Alert, ensures timely communication with community stakeholders, issuing warnings and facilitating proactive measures to protect vulnerable residents during extreme temperatures.

Moreover, comprehensive public education campaigns cover both extreme heat and cold responses, and raise awareness of novel vector-borne diseases, like West Nile Virus and Lyme Disease. SWPH conducts water sampling for wells to ensure the safety of private water sources, and the Migrant Farm Worker Education program disseminates vital information in various languages, covering topics ranging from sexual health to infection control practices.

Strengthening good governance of risk

SWPH actively engages with Oxford County, Elgin County and the City of St. Thomas to initiate strategic planning activities that address the localized impacts of climate change and mitigate exposure to environmental health hazards within the community. One key facet of this approach involves reconvening the Health Equity and Priority Populations (HEPP) Committee, an internal group that reviews and provides input into planning activities and supports training on the health equity framework. Embracing a 'train the trainer' methodology, this committee ensures the dissemination of education throughout program teams.

Concurrently, the development and adoption of a Municipal Collaboration Strategy is tailored to the Southwestern Public Health region. This strategy will identify policies, guidelines, standards, processes, and tools to integrate climate change and health equity topics into planning projects within Oxford, and Elgin County and the City of St. Thomas.

SWPH is also actively involved in updating and implementing the Age-Friendly Strategy, which recognizes the interconnection of age-friendly strategies with broader priorities such as climate change and acknowledges the heightened vulnerability of older adults. By focusing on age-friendly communities, the strategy aims to decrease morbidity and mortality from climate-related events. While Oxford County currently lacks a specific age-friendly committee, SWPH is exploring opportunities to integrate the lens of older adults into existing committees or potentially initiate a similar strategy in 2024.

Undertaking disaster preparedness and prevention

SWPH is actively engaged in a multifaceted approach to address various aspects of public well-being. Emphasizing the importance of social connectivity to build social capital, SWPH participates in local community/neighborhood groups, councils, and coalitions to learn about existing initiatives across the region that enhance social connections. By participating in these groups, SWPH gains access to local expertise, resources, and relationships, which enables collaborative efforts to address health disparities, promote preventative measures, and create healthier, more resilient communities, particularly in the context of climate change actions.

Moreover, SWPH is dedicated to developing a Priority Populations Engagement Strategy, utilizing the Community Engagement Planning Toolkit. This strategy aims to identify priority populations

in the region based on health inequities or the burden of disease, focusing on specific populations, such as plans for older adults. Additionally, the organization actively supports community partner collaborators in extreme temperature emergency planning, advocating for accessible and safe heating centers while responding to community partner collaborators' requests for emergency planning support related to extreme temperatures.

In the area of community care and education, SWPH collaborates with organizations delivering fall prevention programs for older adults. By addressing barriers in the community, providing support to increase capacity for fall prevention, and aligning community groups and policies with local organizations' concerns, SWPH promotes well-being for older adults.

Communication with municipalities to eliminate mosquito pools and catch basins, along with adult mosquito trapping and testing, is part of the organization's comprehensive approach to reduce vectors of disease, including West Nile Virus.

SWPH actively responds to adverse drinking water events and conducts air quality monitoring. The health unit runs quarterly social media campaigns addressing various health hazards, such as Radon Awareness Month, Outdoor Air Quality in the Summer, Indoor Air Quality in the Winter, and Hoarding/Pests in the Spring. These campaigns aim to increase awareness of health hazards and inform the community about agencies that can provide support, emphasizing SWPH's role in promoting a safe and healthy living environment.

VI. Recommendations for Action

As this assessment report has outlined in the previous sections, there are important projected changes in the climate system for the SWPH region. These will have important health impacts across the communities and on those identified as particularly vulnerable to different hazards due to their physical exposure or socio-economic characteristics. This section underscores a commitment to equity to support local vulnerable populations living in the southwestern region of Ontario. SWPH has already made important strides to target its interventions with a newly released health equity framework that will serve as a lens through which each of these recommendations can be viewed.

Overall, the recommendations emphasize the importance and value of:

- Strengthening and enhancing coordination both within and outside SWPH with local partners, to improve communication and strategically support climate action, including a strong focus on knowledge translation for equity-through-action solutions;
- Expanding the scope of partnerships to harness complementary skills, resources, and capacities, thereby facilitating the delivery of climate solutions that are relevant to equity; and,
- Utilizing and customizing available tools to inform evidence-based and equity-centered decisions within SWPH.

SWPH advisory groups and staff stressed the importance of concrete and actionable recommendations that provide clear, tangible, and measurable solutions. It is also very important to note that the report writing team found little evidence in the academic and gray literature of evaluated interventions in the context of what SWPH could do. While proof of concept is rare, community needs should drive the action agenda. Monitoring and evaluation should be key components of this, and the recommendations outline that SWPH start building their own evidence base and learn from their own approaches, while working in tandem with communities through their direct participation in the design, implementation, and monitoring of solutions.

The recommendations listed below reflect the input and ideas received through facilitated sessions with the advisory groups. Each recommendation includes specific activities for SWPH to consider as well as activities that could be considered by a range of external organizations, including area municipalities, conservation authorities, community organizations, and others specific. These activities were identified through a combination of scientific literature review, advisory group discussions, and knowledge of best practices.

Activities for SWPH have been grouped into three categories with input from the advisory groups:

- **Quick Wins** - activities that typically require little investment/few additional resources and often capitalize on existing processes that require only minor tweaks to achieve results.
- **Best Buys** - activities that typically require modest investment/some additional resources and produce the greatest returns on investment toward the outcome of interest.

- **Gamechangers** - activities that typically require greater investments/additional resources, including time as well as changes in processes and/or governance procedures in order to undertake activities that are transformative in nature.

Recommendation 1: Develop a comprehensive and co-produced risk reduction and prevention strategy for extreme weather conditions.

Recommendation 2: Review and enhance coordination mechanisms with area municipalities on land use planning.

Recommendation 3: Build and strengthen partnerships with agencies, organizations, and individuals beyond jurisdictional boundaries.

Recommendation 4: Create a communications plan to share up-to-date data on health risk information with recommendations spanning all hazards and health impacts for the region - including the psychosocial dimensions.

Recommendation 5: Establish a monitoring and evaluation framework to assess the impact of actions and interventions.

Recommendation 6: Promote and advocate for social capital building activities.

Recommendation 7: Develop a climate-compatible sustainable food system strategy.

One: Develop a comprehensive and co-produced risk reduction and prevention strategy for extreme weather conditions

The development of a comprehensive risk reduction and prevention strategy would encompass all climate-related natural hazards, including extreme heat and cold temperatures, by incorporating a specific inventory of everyday actions to reduce health risks for vulnerable populations. It would outline a partnership roadmap and objectives to support action plans.

The strategy would include a communications plan that includes the development of infographics, icons and/or photos with specific risk information and recommendations, interactive mapping systems, and an inventory of actions that could be adapted by SWPH and partners to meet local communities' needs. The communication plan should involve developing resources to reach specific vulnerable populations, such as those with English as a second language, farm workers, the elderly, people with disabilities, and/or youth.

Activities for SWPH to consider:

Quick Wins:

- **Co-create inventory of heat stress management practices** with farmers, workers, and vulnerable communities working with community partners such as businesses. Existing knowledge and practices on those communities most affected by heat can provide important insights into heat mitigation for outdoor work.
- **Create and share visuals and infographics of disease vectors, including mapped locations of high-risk areas**, especially to share among most vulnerable populations living in rural settings or limited knowledge of the English language, which would assist in reducing risk on foreign and agricultural workers.
- **Promote prioritizing ice/snow removal along higher-volume pedestrian corridors** and in vulnerable neighborhoods.
- **Provide specific risk information**: On the impacts of adverse air quality events in a proactive manner rather than reactive.

Best Buys:

- **Undertake emergency preparedness and response drills** with public and private organizations to test health units' capacity to address rapid onslaught flash flooding events and extreme weather-related crises.
- **Conduct a vulnerability assessment of future flooding impacts** for populations living near private wells and flood plains.
- **Develop an online Heat Vulnerability Assessment tool** for community partners to identify risks and actions to guide core practices to address heat risk.
- **Develop protocols for small and medium sized businesses** to protect employees' working outdoors, including increasing rest times during heatwaves and extreme heat days.

Game Changers:

- **Develop a Heat Action Plan for and with** local stakeholders, which would identify clear opportunities for partnerships across the public and private sector, seek to leverage existing resources and infrastructure for reducing risk, and highlight concrete practices for addressing long term high heat stress in the southwestern region.
- **Share non-confidential data** and reports on climate risk and impacts on vulnerable populations with community partners to help them develop organizational adaptation, health and wellbeing strategies, protocols, and investments, including with local schools, businesses, and community centers.
- **Create a repository of health equity data tools** that could be used in the development of policies and the implementation and evaluation of programs and services.

Activities for External Partners and Organizations to Consider:

Retrofitting Infrastructure

- **Support infrastructure retrofits:** insulation for households with individuals living with a chronic respiratory condition to support winter needs.
- **Test mist cooling infrastructure for farm fields** during heat waves to reduce the risk of heat stroke or cardiac arrest. This portable or movable infrastructure can be co-located in places of high traffic or target vulnerable hot spots in the community to create cooling corridors.
- **Assess and report on school and public building standards** to ensure these are equipped with heating and cooling infrastructure that comply with the climate risk projected for the region.
- **Place policy directions towards Nature based Solutions** (NbS) such as environmentally friendly infrastructure (i.e., green roof/white roof/solar) which reduce heat islands in urban contexts.
- **Promote a review of access ramps and backup generators** for social housing, multi-story buildings, and elder care facilities to ensure rapid access or exit for communities most at risk of heat stress.

Using technology and customized tools

- **Use flood risk road maps** to identify and learn the geography of flood risk in the region and identify mobility options in case of extended disruptions or in times of emergency response.
- **Utilize mapping technologies (e.g., GIS)** to determine resource allocation for green infrastructure, active transportation networks, and green retrofits.

Building capacities

- **Promote and account for sustainable local forest management practices** (e.g., tree planting) in new projects and as opportunities for community engagement.
- **Explore mobility alternatives for rura**l **transportation** networks designed to meet the needs of those who can't afford a vehicle as well as those who live in rural or remote communities, senior populations, and those who are physically or mentally unable to drive.

Revising operating procedures, policies, and protocols

- **Establish shade cover policies** to ensure protection at playgrounds, sports fields, parks, schools, etc.
- **Develop a tree planting strategy** across different spaces (e.g., school environment) and encourage both forest regeneration and preservation (tree retention).

Two: Review and enhance coordination mechanisms with area municipalities on land use planning

Enhanced coordination on land use planning can support stronger consideration of climate and health-related objectives in policy and design decisions. SWPH should undertake a systematic and rigorous assessment of where enhanced coordination would be most beneficial to support climate-related objectives. This can build on the co-produced risk reduction and prevention strategy for extreme weather and could be an avenue to test and pilot a solutions-approach to strengthening and refining coordination mechanisms. For example, establishing a Municipal Land Use Planner-in-residence within SWPH or a Public Health Municipal Planning Lead in-residence within area municipalities during key periods, such as during Official Plan reviews.

Activities for SWPH to consider:

Quick Wins:

- **Ensure strong communication mechanisms exist between the health unit and municipal planning** staff to strengthen climate-related considerations in local planning decisions.
- **Create a directory of community liaisons** to share information and create a local network for community partner collaborators communications on risk and best practices. Developing a compendium of best practices and preferences (including technologies used to communicate or spaces to gather) drawn from local community partner collaborators can better inform local community strategies.
- **Liaise private sector and public sector environmental, sustainability and health and safety officers** to coordinate and enhance climate-resilience adaptation practices and learning across community networks.

Best Buys:

- **Ensure schools and daycare centers for young children have updated protocols** for climate-related health risks, including extreme heat events, poor air quality, and extreme weather events.
- **Strengthen the data collection processes of the use of heating centers** (through partnership).
- **Use climate impacts-associated patient intake data** to inform strategies to support the community in the long term, including where possible disaggregated data by gender, age, and vulnerable population variables that might exacerbate certain risks.

Game Changers:

- **Develop decision-making tools** to support climate adaptation interventions for vulnerable populations (i.e., tree canopy site selection and planting).

Activities for External Partners and Organizations to Consider:

Retrofitting infrastructure

- **Develop public transport protocols** for local transport authorities to ensure efficient functioning of schedules on days of extreme cold and days of extreme heat, including emergency hydration packages.
- **Identify co-located infrastructure through discussions with site staff** for a shared extreme weather climate control space with low barrier access for different communities to reduce risk from extreme heat and summer to increase public familiarity with the sites.

Three: Build and strengthen partnerships with agencies, organizations, and individuals beyond jurisdictional boundaries

Extending partnerships beyond jurisdictional limits can support more robust climate actions that leverage a broader range of skill sets, capacities, and resources at the municipal, regional, provincial and federal levels. These partnerships can accelerate progress on the strategic plans and actions outlined in this report, particularly in the context of tool sharing, technology sharing, sharing of expertise across units, advocacy for policy change, and harmonization of relevant policies. These can also be done through local community organizations as entry points for wider networks that extend the capacity of SWPH to deliver local solutions.

Activities for SWPH to consider:

Quick Wins:

- **Strengthen partnerships** with local universities, civil society organizations, the private sector and other key community partner collaborator groups to support climate adaptation initiatives.
- **Convene a local advisory group on psychosocial impacts** and provide training resources on climate change impacts and the vulnerable population of the southwestern region.
- **Educate school-aged children** through partnership with school boards (embedding into curriculum).

Best Buys:

- **Engage and empower youth to develop the skills they need** to participate in climate change and health action in partnership with local universities.

- **Plan for learning events series** for different communities, especially those in the most vulnerable classification in partnerships with colleges/universities to discuss risks and the links to different health associated impacts.
- **Strengthen institutional collaboration among health providers** on climate change actions, for example working with local hospitals to support a climate vulnerability assessment.

Game Changers:

- **Engage social housing owners and construction companies** to promote nature-based solutions as central to reducing heat island effects in urban settings. This can be part of a long-term strategy to new green buildings and provide learning opportunities for investment practices informed by health considerations for projected climate impacts.
- **Target emergency response interventions for populations most likely to be severely impacted** (i.e., older adults) by increasing collaboration between SWPH and agencies responsible for developing community regional emergency plans.

Activities for External Partners and Organizations to Consider:

Government partnerships

- **Partner with local disaster management agencies and municipalities to identify high risk flood zones and create clear public signals** of risk, but also include emergency response numbers and identify safe-shelter locations for seasons of increased flood risk.
- **Develop an Extreme Cold Action Plan for community actions** which identifies clear opportunities for partnerships across the public and private sector, seeks to leverage existing resources and infrastructure for reducing risk, and highlights concrete practices for addressing long term high cold stress in the southwestern region.

Community partnerships

- **Partner with local organizations** representing vulnerable populations to identify possible interventions and support needed to address mental health and climate vulnerability.
- **Celebrate wins and highlight real local actions** on specific improvements to our local environment: i.e., the improvement of Lake Erie water quality and related ecosystem health resulting from more environmentally sustainable farming practices that reduce runoff into waterways.

Industry partnerships

- **Develop private-public partnerships for increased heating and cooling centers** in areas of increased vulnerability, including resources to diffuse information among communities pinpointing the locations, and heat protection materials.
- **Partner with retailers** that develop UV protective clothing to increase access and affordability to appeal to a wider audience.

Financial Investments

- **Climate risk informed budgeting** to allocate resources for training and practice to reduce health risk on individuals and key community partner collaborators or clients.

Four: Create a communications plan to share up-to-date data on health risk information with recommendations spanning all hazards and health impacts for the region - including the psychosocial dimensions

A comprehensive communications plan focused on sharing up-to-date data on climate-related health risk information will provide the foundation for engaging vulnerable populations and ensure targeted and specific resources (a mix of printed/social media materials) for these communities. The plan can be part of a partnership strategy with different organizations that represent some of these stakeholders.

The focus should include air quality data and warnings; beach data and warnings; heat stress and cold weather warnings. Communications must be targeted and accessible and address language considerations and different population sub-groups with specific actions, including, for example, children, outdoor workers, pregnant women, seniors, new Canadians, seasonal farm workers, and their caregivers (teachers, day care workers, farm owners, nursing home providers, Chamber of Commerce).

Activities for SWPH to consider:

Quick Wins:

- **Deploy Early Warning Alerts** for extreme weather using the local community channels of communication (Facebook, WhatsApp groups, etc.). and online applications.
- **Provide information about what residents can do** to support improved air quality, types of landscaping at their homes, tree planting, etc.
- **Develop tailored public health education campaigns** about tick/vector-borne bites and prevention.
- **Create a digital infographic archive** with materials that outline the risks and measures to reduce climate impacts on individuals and vulnerable populations. This can be shared with local stakeholders, chambers of commerce and businesses to print and place in visible locations in advance of heat waves.
- **Enhance targeted communication of tangible actions** that can be taken at the community level to enhance resilience and adaptive capacity.
- **Winter weather cardiac incidents:** Communicate with adults and seniors' groups to help them understand that heavier snow leads to higher risk of cardiac incidents and provide possible preventive measures.
- **Launch an awareness raising campaign** with targeted components for the most vulnerable community groups and include key actions for protecting residents of heat waves and peak hot days.

- **Develop a communication campaign about sun protection** (Include: eye health) in a variety of settings (i.e., pharmacies, public, workplace education, middle schools)
- **Analyze SWPH website and social media traffic for beach water quality testing data** to understand who is accessing the information, who is most vulnerable, and if they are accessing the correct information.
- **Provide real-time updates of extreme weather events** through different communication channels prominently used by target communities to ensure these reach the most vulnerable communities with warnings and recommendations for extreme weather events (i.e., flood location, depth of water flow).

Best Buys:

- **Design, in collaboration with mental health professionals and climate experts, an education and awareness campaign** for the general public, target vulnerable populations and healthcare providers across the region to address climate anxiety, promote mental health strategies in response to climate impacts and support science informed mental health literacy in the community.
- **Provide translated key materials for at-risk immigrant and seasonal workers** of the types of services and support for health associated risks.
- **Develop a targeted campaign** for low-cost actions for protecting against heat for older adults (i.e., fridge magnets, critical temperature-marked thermometers with a hotline for high-risk thresholds).
- **Develop a text message alert and targeted communication outreach** based on the levels of air pollution and air quality index.

Game Changers:

- **Provide education and information to invest in communities' understanding** of the health risks of climate change and the projected impacts for the region to ensure individuals make it personal, urgent and relevant for themselves and ultimately the region.

Activities for External Partners and Organizations to Consider:

Using technology and customized tools

- **Provide social media information on real-time updates of extreme weather events** (i.e., flood location, depth of water flow).
- **Implement an Air Quality Health Index (AQHI) alert warning system.**

Community partnerships

- **Increase wellness checks** on the elderly during heatwaves and promote practices that support access to food and social recreation activities in times of extreme weather.
- **Address psychosocial impacts by providing opportunities to hold 'Carbon Conversations'** to educate people and provide a framework to talk about carbon reduction while taking into account the complex emotions and social pressures that make it difficult.

Five: Establish a monitoring and evaluation framework to assess the impact of climate actions and interventions

To assess the effectiveness and impact of climate change and health interventions, SWPH will need to establish a comprehensive monitoring and evaluation framework that includes indicators and measures of success. This framework should include the establishment of baseline data on health impacts in the region linked to data on climate-related hazards, and the ongoing monitoring of a series of indicators that would be used to understand risk and opportunities, track progress and make evidence-based decisions.

This could include developing a participatory community-focused mechanism to support monitoring the impacts of climate change action planning for SWPH that informs the indicators and measures of success for climate change and health interventions. An example of this could be developing partnerships in the community to implement a citizen science program that can generate evidence of new risks and good practices in the region. Linking the monitoring and evaluation framework with the communications plan identified in Recommendation 4 would provide regular information to the public through products such as interactive maps for community partners to inform themselves and their constituents about climate risks.

Activities for SWPH to consider:

Quick Wins:

- **Strengthen disease and incident monitoring** both as active and passive surveillance on vectors capable of transmitting diseases of public health significance. This can include research partnerships to map high risk locations, insect population increases and time of peak risk.
- **Incorporate the use of citizen science** to highlight local climate action successes (e.g., use of a hashtag to see what is being implemented in the community).

Best Buys:

- **Implement annual learning and scientific review dialogues** among health practitioners to share information on the emergence of new vectors of disease associated with a changing climate. Especially those linked to a combination of new environmental factors not previously present in the region in the last decades.
- **Review air quality monitoring data** for the region to communicate clear early warnings to residents. Aggregating communication channels and clear conduits for early warnings will strengthen communications across community stakeholders for communities with high risk of respiratory morbidities, such as elderly, children, and people with pre-existing health conditions.

Game Changers:

- **Evaluate the delivery and impacts of the program** activities over time to support extreme temperature policies. Continue to tailor policies and practices (based on evaluation data) to the needs of the population.

- **Establish routine evaluations** on the delivery and impacts of the activities using consistent indicators to measure success and draw lessons learned from the interventions.

Activities for External Partners and Organizations to Consider:

Using technology and customized tools

- **Draw on research expertise and resources** to make custom assessments, studies, and develop capacities to better understand risk and plan for context relevant actions.

Six: Promote and advocate for social capital-building activities

SWPH can be a catalyst for promoting and advocating for activities that build social capital of local organizations and communities to support actions that will address many of the health risks associated with climate change, including psychosocial worry, anxiety, concern for the future and the future of children and grandchildren. Examples from other jurisdictions that could be considered include the Be a Buddy Program (USA) that has been used to bolster social cohesion by building hyperlocal networks between heat-vulnerable residents, local volunteers and partner community-based organizations. Another example is the expansion of social prescribing initiatives, a practice dedicated to building up communities and fostering social connections in different environments, including the outdoors. This can be done in partnership with the new Canadian Institute for Social Prescribing (https://www.socialprescribing.ca), which can be further enhanced through creating a positive climate/sustainability hashtag and having citizen scientists share good health practices and experiences through the hashtag to bolster more positive thoughts about our climate future.

Activities for SWPH to consider:

Quick Wins:

- **Expand community support programs** for example, “Be a Buddy/Hey Neighbour program” to support check-ins during extreme weather events such as extreme hot days (such as the existing age friendly Program) and to educate the public about the risk of heat on physical and mental health.
- **Communication of local successes and progress towards climate action** to reduce climate anxiety and support community actors undertaking initiatives to mitigate or adapt to climate change. These can include the municipality, local businesses, schools, community organizations and universities.
- **Support social capital formation** by enabling social connection and nourishing a sense of belonging as a health priority for the SWPH region, related to the social determinants of health (e.g., social exclusion).
- **Promote community gardens in local spaces (i.e., schools, neighborhoods, workplaces) and urban agriculture** to enhance local food production and increase community resilience to food supply chain challenges.

- **Promote inclusion of psychosocial dimensions** in SWPH education and training programs for staff.

Best Buys:

- **Use existing information to make evidence-based interventions** to increase social connections (e.g., heyneighbourcollective.ca)
- **Co-create community strategies** around social prescribing and novel approaches to reduce stress, anxiety and depression among local residents.
- **Develop and offer training opportunities** for local community groups and organizations to increase their capacity to design and implement health-related climate adaptation strategies to support their clients, employees and community members directly.

Game Changers:

- **Coordinate with community partner collaborators to support social capital building activities** such as partnerships with existing community-based organizations that have a vision and a mission around social connection and include social capital building efforts (e.g., GenWell Project) in the implementation of programs and strategies such as part of the Community Safety and Well-Being Plan.

Activities for External Partners and Organizations to Consider:

Building capacities

- **Develop a community-based strategy to expand social capita**l to support the development of urban heat island interventions.
- **Invest in capacity building**: Provide heat risk training and response to all employees (e.g., City parks employees, daycares, nursery schools etc.)
- **Support targeted investments to fund psychosocial wellbeing** programs (e.g., Deployment of Mental Health Practitioners in the aftermath of climate-related emergencies).
- **Invest in community and individual mental health support programs for vulnerable people or provide training to those supporting vulnerable populations** during and after climate associated impacts, such as the elderly limited in mobility during heatwaves, foreign temporary workers and field workers, or daycare or social workers overseeing family wellbeing, and young people at risk. Similarly, coordinate with local emergency response services to create an inventory of support services for affected populations after extreme events such as floods and hurricanes in the region.

Revising operating procedures, policies, and protocols

- **Review of the "fees" for community recreation and social spaces**, for example for renting a room, and accessing spaces (community, recreation, etc.) to increase a sense of belonging in the community, including promoting special days and self-organized events for different community partner collaborators.
- **Provide free community recreation and leisure access** (to break the economic barrier).

- **Remove economic and social barriers** to community-based climate adaptation activities.
- **Using social research to identify and create multi-dimensional community spaces that are available 24/7.** These spaces can be used as heating/cooling centres, and they promote community gathering and social connections.
- **Explore the social and economic case for Universal Basic Income** including potential cost-savings and downstream benefits of basic income.
- **Promote good labour practices** to protect the health of seasonal working and outdoor employees during fire events raising risk, including recommendations on the use of safety equipment, and requiring employers to ensure wellness breaks for people working long periods of time outdoors.

Seven: Develop a climate-compatible sustainable food system strategy

A climate-compatible sustainable food system strategy links climate change adaptation and mitigation goals with broader food security efforts to support integrated community action toward more resilient food security and low carbon diets. The strategy may include, but is not limited to, developing a climate change food supply and disaster risk management plan, reducing food waste (household, schools, and community settings), supporting sustainable diets in community settings, providing knowledge exchange opportunities for community partners on the impact of climate change on food systems, and advocating for local- and provincial-level policies to support sustainable food systems. This could also include developing guides for the community on low-carbon and sustainable diets.

Activities for SWPH to consider:

Quick Wins:

- **Educate the public on what the impacts of extreme weather events might be on the safe food and safe water supply** (i.e., impacts on infectious diseases, business, livelihood, etc.)
- **Develop safe-food handling communication campaign** as extended heat waves and weather patterns change towards longer heat days, food safety is central to reducing the risk of disease from food poisoning.
- **Leverage existing knowledge resources and tools to inform the public** on issues related to food security, for example promoting local food maps available in our region which promote locally produced and seasonal foods (outside of public health) e.g., Buy Local, Buy Fresh in Elgin St. Thomas and Oxford Fresh.

Best Buys:

- **Conduct Community Food Assessments** for the SWPH region to determine priority areas and categorize possible interventions/policies.

Game Changers:

- **Look at sustainable diets from a perspective of public health policy** with local establishments.
- **Advocate for specific provincial policies** to provide school food programs to children (e.g., farm to school program).

Activities for External Partners and Organizations to Consider:

Revising operating procedures, policies, and protocols

- **Strengthen food waste reduction programs and policies** at the municipal level (green bin programs, garbage limitations): Prioritize consumer education on sources of food waste (particularly household food waste).
- **Partner to reduce food waste** with local municipalities, farms, school boards, local restaurants to prevent food waste.
- **Develop emergency response plans with local businesses and farmers in the event of food supply chain interruptions** under a short or extended time frame accounting for disruptions during an emergency and crisis abroad.

VII. Conclusion

This report has presented a summary of an assessment of the vulnerability of communities and populations in the SWPH region from the impacts of climate change. It documents a number of changes that are already occurring and impacting the health of the region, and it describes how continued changes in temperature and precipitation patterns will increase the risks of extreme weather, vector-borne and zoonotic disease, and psychosocial health impacts. The overall objectives of this work included:

1. Outlining climate associated health risks facing the SWPH region.
2. Highlighting vulnerable populations in the SWPH region and the potential impacts of climate change.
3. Describing ongoing climate action undertaken by SWPH.
4. Proposing recommendations to plan for future climate change impacts.

The assessment uses and builds on the work of recent vulnerability assessments undertaken by public health units across Ontario, while focusing on the unique demographic and geographic characteristics of the SWPH region. In particular, the recommendations and related activities included in the report are the result of direct input and engagement with staff and leadership of SWPH, and representatives of the broader community, including municipalities, conservation authorities, community organizations and individuals. This important connection has shaped the recommendations and related activities around key principles of equity, knowledge sharing, and partnership, which together create an opportunity to enhance the climate- and health-resilience of the SWPH region in a more systematic and wholistic manner.

Next Steps

An important next step in the adoption of this assessment report and its recommendations includes increasing the overall capacity of SWPH staff, leadership and partners to incorporate climate-related considerations into strategic planning, decision-making, and program design and delivery. Through targeted training and upskilling, including on both foundational climate literacy and more detailed adaptation knowledge and strategies, the region can build the skills and knowledge necessary to reduce the health risks posed by climate change.

While there is overwhelming evidence that the climate is changing, the intensity of impacts and the overall pace of change remains uncertain. As such, it will be important for SWPH to update this assessment at future intervals to ensure changes and associated risks are understood and programs are adapted accordingly. Similarly, as demographic, social and economic characteristics in the region change over time, it will be important to identify changes in vulnerability of communities and populations.

As mentioned in Section 5 of this report, many of the activities and interventions identified in the literature, by the advisory groups, and in other Ontario assessments, are not yet supported by robust evaluative evidence of their efficacy. While this evidence-base is expected to grow in the coming years, it will be important for SWPH and its partners to monitor and evaluate climate-related programs and activities over time to ensure desired outcomes are achieved.

The urgency of addressing climate change is becoming more obvious each day as the impacts become more visible and more severe. Through collaborative and evidence-based actions, SWPH and its community partners can together reduce the health risks of climate change in the region and increase the resilience and equity of its health systems overall. Adapting our communities and our support systems is critical to minimize health impacts, and the suffering and loss by those most vulnerable.

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IX. Appendices

Appendix A: Climate Science Report for the Climate Change and Health Vulnerability Assessment

A copy of the final report can be found on the Southwestern Public Health Website at:

https://www.swpublichealth.ca/en/reports-and-statistics/resources/Evaluations-and-Situational-Assessments/Climate-Science-Report---FINAL-2.pdf

Appendix B: Study Area in Context

Demographics

Southwestern Public Health Unit supports the health of people living in Elgin County, Oxford County and the City of St. Thomas. According to the 2021 census of the population, there were 216,533 people living within the Southwestern Public Health (SWPH) region (Statistics Canada, 2021).

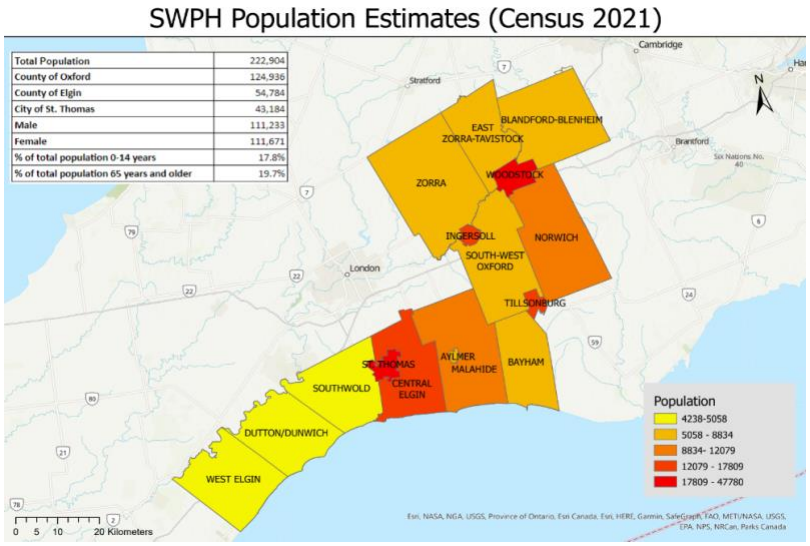


Figure 1: Population Estimates in SWPH (Statistics Canada, 2021).

The population is continuing to grow, with a population increase of 8.4% between 2016 and 2021 (Statistics Canada, 2021) (See population estimates in Figure 2).

When compared to Ontario, SWPH region has a slightly higher proportion of children and youth (0-19 years), and older adults (65+ years) at 23.8% and 20.2% respectively (Statistics Canada, 2021). However, SWPH region has a slightly lower proportion of adults (56%) when compared to Ontario (60%) (Statistics Canada, 2021). Between 2011-2021, the proportion of older adults grew from 16.1% to 20.2%, which indicates an overall aging population (Statistics Canada, 2021).

Table 1: Population (Statistics Canada, 2021)

Age	SWPH Region	Ontario
0-19	23.8%	21.4%
Adults	56%	60%
65+	20.2%	19%

There are some unique aspects of the population of this region. These include the presence of Amish and Low German Speaking (LGS) Mennonite communities, presence of a transient but substantial population of temporary foreign agricultural workers, as well as nearby Indigenous communities.

With respect to the LGS Mennonite community, estimates from 2002 suggest that approximately 500 reside in Oxford County, and 12,000 reside in Elgin County. However, health and social service providers have anecdotally shared their belief that the LGS Mennonite population has increased in these regions over time. With respect to the Amish communities, there are two settlements of Amish in the SWPH region, one in Aylmer and one in Norwich, with approximately 1500 residents combined.

In Oxford County and Elgin County, temporary foreign agricultural workers come to the region on an annual basis (from Barbados, Eastern Caribbean, Jamaica, Mexico, Trinidad and Tobago (F.A.R.M.S., 2024) to work during planting and harvesting seasons on local farms in the region. They are often single males housed in congregate living facilities on operating farms. They return to their country of origin upon completion of relevant paid farming tasks.

The lands of SWPH region were inhabited by the ancestors of Turtle Islands Indigenous people, individuals with direct blood ties to the Anishinaabe, Haudenosaunee and Attawandaron peoples (Supported information by Patricia Marshal-DeSutter, External Advisory Board). In Tillsonburg, we see the remains of the largest Attawandaron settlement in southwestern Ontario. It is noted that relevant data on this population in the SWPH region is not robust. There are three reserves just outside the boundaries of SWPH (Chippewas of the Thames First Nation, Oneida Nation of the Thames and Muncey-Delaware).

In the SWPH Health Status Data Presentation (2023), it was noted that the proportion in the SWPH region that identify as Indigenous (2.3%) is similar to the province (2.9%) in 2021. However, it is noted that Indigenous peoples have a higher prevalence of low income compared to the overall population. The unemployment rate among Indigenous peoples was considerably higher among males (12%) compared to females in Oxford County (3.8%), while in Elgin-St. Thomas, the unemployment rate for males was (9.4%) and females (7.1%) (SWPH Report: Measuring Opportunities for Reducing Health Inequities, 2019).

A majority of people in the SWPH region reported their mother tongue to be an official language (specifically English) (Statistics Canada, 2021). In the SWPH region, 99.4% of people can speak English, with the second most commonly spoken language in the home (excluding official languages) being Germanic languages at 1.0% in Oxford County, and 3.2% in Elgin-St. Thomas (Statistics Canada, 2021). When excluding official languages, Germanic languages are the most common mother tongue at 3.3% in Oxford County, and 7.7% in Elgin-St. Thomas, compared to 1.2% in Ontario (Statistics Canada, 2021).

Health Assessment of SWPH

The section was primarily informed by the 2019 Population Health Assessment for SWPH, which includes data from the 2016 Canadian census. Data from the 2021 census data was used to supplement data gaps.

Wages

While the minimum wage in Ontario is $16.55, the living wage in London, Elgin and Oxford County is $18.85 (Coleman, 2023). Urban areas in the SWPH region have pockets of residential instability, with more material deprivation, which includes measures of one-parent families, low-income households and poor housing conditions, in urban centres and in the municipalities of Malahide and Bayham. In the SWPH region, 20.4% of people spend 30% or more of their income on shelter costs compared to 27.7% of Ontario residents (excluding farms).

A major indicator of the economic status of a community or neighborhood is the percentage of dwellings in need of major repair as reported in the Canadian census (Harrington and Elliott, 2009). Within the SWPH region, the percentage of occupied private dwellings that need major repair is 4.9% in Oxford County, and 6.1% in Elgin-St. Thomas, compared to 5.7% in Ontario (Statistics Canada, 2021).

Compared to Ontario, the SWPH region has a higher proportion of people with no certificate, diploma or degree (20.4%). The SWPH region also has a lower proportion of people with a bachelor's degree or higher (13.3%). However, the proportion of people with higher education is increasing, between 2016 and 2021, the proportion of people with a postsecondary certificate, diploma or degree increased from 45.4% to 47.3%. There is also a decrease in the proportion of people with a high school education or less by about 5% between 2016 and 2021.

In 2020, the median household income before tax in Oxford County, Elgin-St. Thomas, and Ontario are 87,000, 83,000, and 91,000 respectively (Statistics Canada, 2021). The prevalence of low income (based on the LIM-AT and LICO-AT, after tax) in SWPH is lower than Ontario on average (Statistics Canada, 2021). However, compared to Ontario (16.7%), SWPH (17.5%) has a slightly higher proportion of households that are food insecure. In the 2021 census, the largest industry based on employment is manufacturing at 19.3%, followed by health care and social assistance (12.0%), retail trade (10.1%) and construction (9.2%).

Activity and body health

SWPH has a higher proportion of adults classified as obese (28.7%) compared to Ontario (19.5%). Additionally, SWPH also has a lower proportion of adults considered active or moderately active (63.7%), and a higher proportion of adults considered somewhat active or sedentary (36.4%) compared to Ontario (69.3% and 30.7% respectively). Youth in Oxford County (351.5 minutes) reported more time traveling in active ways than Ontario (227 minutes), however, youth in Elgin-St. Thomas reported significantly less time (91.6 minutes) than the provincial average.

Pre-existing conditions and chronic diseases

The rates of some pre-existing health conditions such as chronic diseases and mental health are higher in SWPH than Ontario. From 2012 to 2017, the rate of cardiovascular diseases-related hospitalizations was higher in SWPH when compared to Ontario. Similarly, from 2014 to 2017, SWPH also had higher rates of hospitalizations due to diabetes. While the rate of hospitalizations due to chronic obstructive pulmonary disease (COPD) in Oxford County between 2012 to 2016 was similar to Ontario, Elgin-St. Thomas reported higher hospitalizations rates than Ontario. In SWPH, the leading cause of mortality between 2008 and 2012 was ischemic heart disease, with rates of hospitalizations due to ischemic heart disease higher in Oxford County than Ontario from 2013 onwards. From 2015 to 2017, rates of emergency department visits and hospitalizations for suicide and self-harm in SWPH was higher than the provincial rate, with a higher proportion of women reporting depression during pregnancy (13.6%) and postpartum depression during pregnancy (5.4%) than in Ontario.

Substance use

Rates of substance use for smoking and marijuana are higher in SWPH than in Ontario. In SWPH, the rate of current smokers (23%) and daily smokers (16.8%) from 2015 to 2016 were higher than provincial rates (18% and 12.9%). SWPH also has a higher rate of former smokers (29.4%) than Ontario (24%). The proportion of smoke-free homes was higher in Ontario (24%) than SWPH (29.4%). Furthermore, from 2013 to 2017, the rates of impaired driving charges from alcohol and/or drugs were higher in parts of SWPH than the provincial rate. SWPH reported 1.5x the rate of motor vehicle collisions attributable to alcohol when compared to Ontario.

Injuries

Rates of other injuries not attributable to alcohol were also higher in SWPH than Ontario. For example, from 2013 to 2017, SWPH reported higher rates of emergency department visits and hospitalizations for falls, transportation accidents and being struck by or against an object than Ontario. During the same time period, SWPH also reported higher rates of emergency department visits for neurotrauma and a higher five-year average rate of hospitalizations for concussions than Ontario (8.3 versus 4.2 per 100,000, respectively). From 2015 to 2016, SWPH (44.6%) also reported higher rates of sunburn in the past 12 months compared to Ontario (31.7%). In general, people living in the SWPH region had over 2x the rate of unintentional injuries compared to Ontario.

Seasonal illness

Compared to Ontario, SWPH reported lower rates of influenza in the 2016/2017 and 2017/2018 flu seasons. However, SWPH had higher rates of whooping cough (2013 to 2016) and cryptosporidiosis (2013 to 2017) than Ontario. Campylobacteriosis was the most commonly reported enteric disease (between 2013 and 2017), which represents 41.7% of all enteric

diseases in SWPH. Vector-borne diseases are considered rare in SWPH (0.37% of all reported infectious diseases).

Summary

In summary, residents of SWPH reported higher rates of chronic diseases (e.g., diabetes, cardiovascular diseases, ischemic heart disease, etc.), mental health disorders (e.g., suicide and self-harm), substance use, and injuries, with lower rates of physical activity and influenza. These findings should be taken into consideration when developing new plans, programs, interventions, including climate change relevant action plans.

Health and Wellbeing of Oxford County and Elgin County and City of St. Thomas

Oxford County

This section of the report was informed by the Profile of Wellbeing in Oxford County.

Defining Wellbeing

In the report 'A Profile Of Wellbeing In Oxford County With Comparisons To Ontario And Canada', wellbeing is defined as "The presence of the highest possible quality of life in its full breadth of expression focused on but not necessarily exclusive to: good living standards, robust health, a sustainable environment, vital communities, an educated populace, balanced time use, high levels of democratic participation, and access to and participation in leisure and culture" (Smale and Gao, 2018, p.4). This report followed the guidance of the Canadian Index of Wellbeing (CIW). The CIW provides a profile of wellbeing through eight domains: community vitality, democratic engagement, education, environment, healthy populations, leisure and culture, living standards, and time use (CIW, 2023).

Community Vitality

Vital communities consist of people, private, public, and non-governmental organizations with strong, active, and inclusive relationships that can adapt and thrive in the changing world. In the southwestern region, for example, Oxford County residents reported a high sense of belonging to their community (70.2%), great feelings of safety (81.0%), and reported low rates of experiencing discrimination (4.1%). However, SWPH residents also reported a low level of community volunteering (52.9%) and reported having five or fewer close friends (49.5%).

Democratic Engagement

Democratic engagement refers to involvement in democracy through political institutions, organizations, and activities. In Oxford County, voter turnout for the federal election (67.9%)

was similar to rates across Canada (68.3%). Rates of voter turnout in Oxford County (51.9%) for the provincial election was also similar to Ontario (51.3%). Challenges exist for regional elections, with a 37.6% voter turnout rate for the last election of regional council, compared to the average of 43.1% in Ontario. However, Oxford County has elected more women to council (40.0%) than other municipalities in Canada.

Education

Similar to rates in the SWPH region overall, Oxford County has lower rates of both high school graduation (78.3%) and people with a university degree (12.9%) than Ontario (86.5% and 28.5% respectively). However, Oxford County public libraries offer more early literacy and learning programs (34 programs per 1,000 children) than Ontario (25.8 programs per 1,000 children). Compared to anywhere else in Ontario (20.7%), Oxford County has the lowest proportion of children (0-4 years old) for whom licensed, centre-based childcare is available (10.1%).

The Environment

The environment is the foundation of wellbeing, as human health and wellbeing depends on the quality of air, soil, and water. Oxford County (55.1%) has better air and water quality than other parts of Ontario. Additionally, SWPH has a higher waste diversion rate, which refers to the percentage of all residential and non-residential waste diverted from landfill, than Ontario (47.3%).

Healthy Populations

The healthy population domain includes physical, mental, and social wellbeing. Oxford County has (65.8%) a smaller proportion of residents reporting very good or excellent mental health compared to Ontario (70.4%), however, there is a higher percentage of residents rating their overall health as very good or excellent (65.8%) compared to Ontario (59.2%). Furthermore, Oxford County (44.8%) also has a high percentage of residents who have gotten their flu shots in the past year, and a very low percentage (0.9%) of teens who smoke compared to Ontario (35.4% and 5.8%).

Leisure and cultural activities contribute to the wellbeing of individuals, communities, and societies through promoting life satisfaction and quality of life. As an indicator of leisure opportunities, Oxford County residents visit libraries more often than almost every other rural and small urban region, and in the province (119.6 in-person visits per year per 1,000 people) (103.2 in-person visits per year per 1,000 people).

Living Standards, Leisure and Culture, and Time Use

Living standards consider economic security through income and wealth. Oxford County ($76,275) has a lower median income than Ontario ($79,531). However, Oxford County has high rates of employment, and lower rates of residents living in low income and in food insecurity (although these living standards are more frequently reported for men). Time use examines how people experience and spend their time. Employees in Oxford County reported long hours at work each week (15.2% of residents are working 50 hours or more) each week with limited flexibility (37.6% of residents reported flexible work hours) and short commute times (36.2 minutes), with a smaller percentage of employees reporting feeling high levels of time pressure (17.4%) than Ontario (14.3%, 46.1%, 53.7 minutes, and 19.8% respectively). Overall, overall life satisfaction is higher in Oxford County (86.8%) than the West Region (86.1%) and Ontario (85.6%), but slightly lower than Canada (87.1%).

Summary

In summary, Oxford County reported strong vital communities (e.g., high sense of belonging to their community, feelings of safety, and lower rates of experiencing discrimination), healthy physical environments (e.g., good air and water quality), and higher rates of employment, with more people rating their overall health as very good or excellent compared to Ontario. However, there are concerns with democratic 13 engagement (specifically for regional elections), rates of education, and mental wellbeing, with less people reporting very good or excellent mental health compared to Ontario.

Elgin County and City of St. Thomas

While Elgin and the City of St. Thomas do not have a profile of wellbeing report, this section uses the 2021 census data to summarize domains of wellbeing with available data in the area.

Democratic Engagement

In the 2022 Ontario municipal elections, the voter turnout rate for Elgin-St. Thomas is 29.1%, ranging from 10.8% in West Elgin to 37.3% in Southwold (Association of Municipalities of Ontario, 2022). Certain municipalities in Elgin-St. Thomas have also elected more women to council than other municipalities in Canada, with 40% female council representation in Bayham and West Elgin, and 33.3% in the City of St. Thomas (Association of Municipalities of Ontario, 2022).

Education

Compared to Ontario (15.3%), Elgin-St. Thomas has a higher proportion (21%) of people aged 15 years and over in private households that have no certificate, diploma or degree. Similarly, Elgin-St. Thomas has a higher proportion (31.5%) of people with a High (secondary) school diploma or equivalency certificate as their highest certificate, diploma or degree compared to Ontario (27.2%). More people in Ontario (57.5%) have their postsecondary certificate, diploma

or degree compared to Elgin-St. Thomas (47.4%), with only 13.1% of people earning a bachelor's degree or higher compared to 29.9% in Ontario.

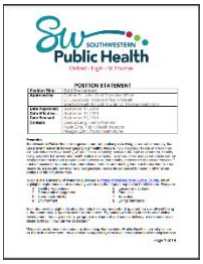
Living Standards and Time Use

Elgin-St. Thomas (73,500) has a lower median household income (after tax) than Ontario (79,500). Elgin-St. Thomas and Ontario have very similar employment rates at 55.2% and 55.1% and have a lower unemployment rate at 10.3% and 12.2% respectively. Residents of Elgin-St. Thomas also have shorter commute times to work compared to Ontario on average. 39.5% of people in Elgin-St. Thomas reported a commute time of less than 15 minutes, with 4.7% reporting a commute time of 60 minutes or longer. In Ontario, 28.3% of people reported a commute time of 60 minutes or longer.

Built, Social, and Economic Environments

The team conducted an overall search of documents related to the development priorities of each community, as well as the inclusion of supporting initiatives that were provided by the advisory board. The environment provides the underlying context within which SWPH populations live, work, and play. The focus of the search was directed to climate actions that were specifically introduced to support overall community wellbeing.

Built Environment



Southwestern Public Health recognizes the built environment and its relationships to healthy living, people's behavior and health status through their 2019 Position Statement. This statement highlights the way that public health supports the design and creation of complete neighborhoods and protected areas for conservation through efficient and equitable land use planning to enhance community health and well-being.

Oxford County

Oxford County's Official Plan provides land use strategies for the County and the municipalities that comprise the County. The Official Plan has a section in Chapter 2 that focuses on the County's Development Strategy, highlighting expected growth and development aspects impacting the built environment. Chapter 4 supports the planning principles by identifying the strategic aim through Growth Management Policies. The principle of the County Council includes public participation as an integral component of all planning decisions.

1. Urban Planning: Aligned with the economic environment, amendments were also made to protect the vitality, viability, and planned functions of the built environment, including:
    - The importance of traditional downtowns and village cores

- Encouragement of a sense of place by promoting well designed built form and cultural planning (including conserving features: heritage resources)
- Statutory and non-statutory exemptions to Development Charge Exemptions (used as incentives to promote development)
- Identifying required growth areas based on forecast growth of population and employment for the County and the Area municipalities.
- Identifying future growth areas for development purposes (i.e., Future Urban Growth Designations)
- Requiring existing land supplies and infrastructure to be efficiently utilized
- Clearly establishing parameters and criteria for development in designated growth areas (zoning of rural and non-farm rural residential lots)
- amendments

2. Housing Initiatives: Focused on Goal 1.1, the County is committed to "100% Housing" as many residents are experiencing challenges in finding housing that meets their needs. The focus is on addressing housing supply and affordability, including working with community partners and other levels of government.
    - Support the creation of diverse housing types and options.
    - Invest capital funds and leverage provincial, federal and partner funding.
    - Lead and support partners in implementing effective integrated solutions for vulnerable and unhoused populations.
    - Continue to advocate for and support long-term care capacity and supports.

3. Transportation Systems and Corridors: Focused on Goal 1.4, the County strategy is "connected people and places". The County is dedicated to developing a safe, efficient, cost-effective and reliable multi modal transportation system that addresses current and projected needs, including protecting planned corridors and major good movement facilities and corridors from development. Amendments were made on the following areas:
    - Network Improvements
    - Efficient use of freight-intensive lands with a focus on rail facilities
    - Supporting active transportation and transit
    - Protecting airports and rail facilities from incompatible land uses and development
    - Promotion of transportation connections between Area municipalities (integrating road, pedestrian, and cycle networks)
    - Rural Cluster Designations (focused on minimal potential for conflicts with agricultural uses, environmental resources and mineral and petroleum resources)

To continue, Chapter three of the Official Plan describes natural resource management policies, with information relevant to climate change and the physical environment. A core message across the region involves the engagement with conservation authorities to protect and prioritize nature. The strategic approach to environmental management as outlined in this Plan consists of three policy initiatives: (1) identifying the County's Natural Heritage System which includes

the Environmental Protection and Open Space designations, (2) general environmental resource protection policies that create opportunities for environmental enhancement and minimize adverse effects of development, and (3) environmental constraints that establish policies to alleviate natural hazards to public health and safety.

Goals as outlined in the Official Plan include the following:

1. Net Environmental Gain
2. Identify And Protect Significant Natural Areas
3. Develop The Natural Heritage System
4. Encourage Naturalization and Maintenance Of Ecological Functions
5. Integrate With Other Systems
6. Groundwater Protection
7. Surface Water Protection
8. Environmental Impact Control
9. Preservation Of Trees
10. Facilitate Safe and Healthy Conditions
11. Energy Efficiency
12. Environmental Monitoring and Reporting

Furthermore, Oxford County's Official Plan Review of Environmental Policies describes key considerations with community planning for natural heritage systems, water resources, open space, soil resources, natural hazards, and climate change mitigation and adaptation.

Suggested environmental policy directions from the official plan.

- Natural heritage system: In Oxford County, 17% of the total land area is covered by natural vegetation, of which approximately 97.8% was determined to be 'ecologically important'. Policy suggestions for Oxford County include identifying a natural heritage system and related policies to protect ecologically important features, as almost all of the remaining natural cover in Oxford is important for sustaining ecological and hydrological functions to support biodiversity and minimize the risks/impacts from a changing climate.
- Groundwater: Oxford County is entirely dependent on groundwater. The Official Plan Review suggests a new policy framework to incorporate a water resource system into the Official Plan, which will build from existing policies and source water protection plans.
- Open space policies are suggested to be updated to encourage the use of master planning and secondary planning for parks and to provide greater emphasis on the role of and planning for trails.
- Soil policies: Existing soil policies should be revised to reflect legislative changes with to 'excess soils', while continuing to protect the high-quality agricultural soils in Oxford County.
- Natural hazards: Policies for natural hazards should be updated to ensure that development is directed away from areas of natural hazards.

- Climate change: New policies should be incorporated to help address and prepare for a changing climate, including updates relating to energy efficiency and air quality.

Additional Reports:

I. 2024 Transportation Master Plan (2024): Developed as a strategic long-term planning document that outlines and defines policies, programs, and infrastructure improvements needed to manage both existing and future transportation demands by 2046. Oxford County is prepared to promote a sustainable multimodal transportation network to move people and goods into and throughout the County.

   - A long-term goal of the county is focused on the Universal Basic Mobility (UBM) to provide sustainable modes of transportation, and provide environmental benefits.

Elgin County

Elgin County's Draft Official Plan (2023) highlights economic development (linked to the built environment) as part of a strategic direction with the following objectives.

Official plan objectives:

- Employment areas: Identify and protect regionally significant employment areas, transportation corridors, and infrastructure facilities.
    - Encouraging standards of high-quality urban design, architecture, and landscape architecture in Strategic Employment Areas to reflect and attract high quality employment opportunities.
- Industrial lands: Ensure that the County has an ample supply of industrial lands to accommodate all forms and scales of industrial uses.
- Agricultural industry: Encourage a strong and vibrant agricultural industry by protecting both agricultural operations and associated facilities and corridors needed for their operation.
- Main streets: Reinforce the function of the County's main streets and downtown areas as cultural, administrative, entertainment, retail, and social focal points.
- Tourist attractions: Preserve and enhance historic, unique, and scenic routes, buildings, and communities that are defining features of the County and important to attracting tourism.
    - This is inclusive of scenic nature of transportation routes that reflects the County's rural and urban character, as well as influences of tourism traffic.

- Communities: Facilitate the creation of compact, complete, and pedestrian-friendly communities that provide equitable access to a range of local economic and social opportunities, centered around a vibrant main street or commercial core

The County recognizes the importance of the Natural System, which includes wetlands, woodlands, species and fish habitat, and water, and the negative social, environmental, and economic impacts that environmental degradation and climate change can have. Elgin County includes 85 km of Lake Erie shoreline, holding significant natural heritage.

The Official Plan outlines 13 policies relevant to the natural system:

1. Identification of the Natural System
2. Watershed Planning
3. Significance and the Natural System
4. Permitted Uses
5. Development In and Adjacent to Wetlands
6. Development in and Adjacent to Other Natural System Features
7. Destruction of the Natural System
8. Development in Fish Habitat and the Habitat of Threatened or Endangered Species
9. Agricultural Uses in the Natural System
10. Surface Water Features
11. Ground Water Features
12. Natural System Policies and Local Official Plan
13. Monitoring Health of the Natural System

City of St. Thomas

The Council of the City of St. Thomas has been working to update the Community Strategic Plan in early 2020, with enhanced public transit that was launched in early 2021. The city is guided by the principles of being an "environmentally responsible community" that "lead from a sustainable perspective". Commitments are focused on building a thriving community, with the goal to invest in the development of planned assets to advance access for people in the community which included:

- Investments to improve roads, bridges, parks and sidewalks.
- Expansion of the city trail system by 3 kilometers
- Expansion of transit hours of service and promotion of greater connectivity
- Creation of a physical concept plan and identifying locations for community and aquatic centers

In the draft Official Plan, the Council has noted several elements to preserve the built environment which include the following:

- Protection of archeological history
- Upgrading of streetscape design/landscape treatments that support "Downtown."

- Consideration of combining transit, paratransit, student busing, and transit for seniors/social services into an integrated community transportation service
- Priority in pedestrian and bicycle movement. Bicycling shall be recognized as a formal alternative mode of transportation.
- Safe and secure transportation systems
- Creation of Community Gardens in City-owned, unused/underutilized/underdeveloped lands, in recognizing that they are a sustainable land use and encourages positive social interaction and provides a connection to nature and the environment.

Furthermore, the City of St. Thomas is located in the Kettle Creek Conservation Authority and the Catfish Creek Conservation Authority. The city is currently updating its Official Plan. The most recent version outlines the following 10 goals relevant to the natural environment:

1. Improve the sustainability and long-term health of St. Thomas' ecosystems.
2. Identify, protect and enhance features, areas and systems of significance.
3. Protect significant natural areas and corridors and encourage the identification and restoration of potential natural corridors.
4. Manage the Kettle Creek valley system as an important resource (environmental and recreational)
5. Reduce the impact of urban drainage on the environment and preserve and enhance the quality and quantity of ground and surface water.
6. Encourage private and public conservation efforts.
7. Promote the conservation and managed use of natural resources.
8. Balance natural heritage protection with the interests of existing land uses
9. Minimize risks to human life and physical property form hazards (e.g., flooding and erosion)
10. Identify opportunities for limited and controlled development on flood plain lands and in proximity to steep slopes following accepted engineering standards.

Social Environment

Oxford County

The Social Planning Council of Oxford County (SPCO) aims to reflect local social realities to inform decision makers. The existing work from the SPCO includes promoting affordable transportation in Tillsonburg, poverty reduction in Oxford County, and promoting affordable housing. The SPCO has released multiple reports relevant to the social environment of the County, recent reports include:

1. Rural Barriers to Accessing Domestic Abuse Services in Oxford County (June 2020)

The SPCO investigated rural barriers to accessing domestic abuse services in Oxford County, and found barriers at the individual, community, and system level, with the most frequently cited

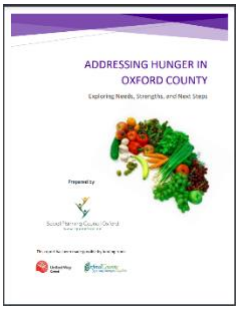
barriers being cultural factors (rural culture), confidentiality/anonymity, and limited availability of services respectively.

2. <u>Human Trafficking: Background Research on a Community Response to in Oxford County</u> (March 2019)

Through interviewing 11 stakeholder agencies, the SPCO found that all interviewed agencies' mandates include providing services to victims of human trafficking. The SPC also highlighted 11 recommendations for a community response to human trafficking:

1. Agree on a common definition of human trafficking including whether or not this definition will extend to all different forms of trafficking.
2. Explore labour trafficking further.
3. Consider the formation of a group or collaborative to determine a community response.
4. Partners agree upon guiding principles if working together to address human trafficking.
5. Map existing support services for victims of human trafficking.
6. Consider the implementation of possible facets of a community response.
7. Include an element of prevention in a community response.
8. Evaluate the community response.
9. Continue to monitor existing human trafficking strategies.
10. Further explore the questions that still remain.
11. Attempt to address larger systemic issues.

3. <u>Addressing Hunger in Oxford County: Exploring Needs, Strengths, And Next Steps</u> (2016)



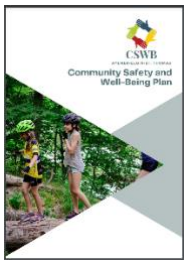
The SPCO evaluated Oxford County's strengths and needs within the food system and provided recommendations to decrease hunger within the community. Through conversations with community members from March to May of 2016, SPCO found community members to report issues with food security, which include issues with the availability, accessibility (physical and economic), adequacy (nutritious, safe, and sustainable), acceptability (culturally), and agency (policies that enable food security) of food.

4. <u>Youth Voice Report: Mental Health and Suicide</u> (September 2016)

The SPCO collected data from Facebook forums to explore issues relevant to suicide, mental health and related topics that are confronted by youth in Oxford County. Themes which emerged include stigma and shame surrounding mental health issues, bullying, a lack of community involvement, and words of support (e.g., encouragement from others online).

Further information on the living wage and wellbeing of residents in SWPH can be found in Section 1.2 summarizing the Population Health Assessment report for SWPH, and the Index of Wellbeing of Oxford County.

Elgin-St. Thomas



An Aylmer-Elgin-St. Thomas Community Safety and Well-being (CSWB) Plan was created with local data to highlight existing issues and future directions. However, it is important to note that the funding may be limited for the follow-up of the plan. The report describes goals and objectives within the following five priority areas relevant to the social environment:

1. Education and Skills Development: 21% of people (age 15 years and older) do not have a high school diploma.
2. Housing Security: 42% of renters face challenges with housing affordability.
3. Mental Health and Wellbeing: 10% of people (age 12 years and older) report fair or poor mental health
4. Public Safety: 4.1% increase in number of incidents (2018-2019)
5. Substance use and Addiction: Increase in emergency department visits for opioid overdose (2013-2018)

Economic Environment

The region's economic vitality and overall environment is situated as one of Ontario's richest areas focused on manufacturing, transportation and warehousing, trade, administrative and agricultural sectors.

Oxford County

According to the Oxford County Strategic Plan 2023-2026, there is an economic shift towards a more sustainable future through their commitment to 100% renewable energy. The County forecasts relatively high levels of net in-migration, along with an increase in employment opportunities. Oxford's community is projected to grow by 47, 000 residents and add approximately 21,000 new jobs by 2046. More than half of the growth is anticipated to occur in the City of Woodstock, and the Towns of Ingersoll and Tillsonburg are expected to account for roughly 25% of the housing and employment growth forecast. Moderate employment growth is anticipated for all five Townships and Oxford remains relatively well-positioned in terms of the suitability of industrial and residential land supply for attracting and accommodating forecasted employment growth.

In Phase 1 of the Comprehensive Review of Oxford County (2020), specific directions for accommodating the economic growth included the establishment of several targets including:

- A minimum target of 15 % of all new residential dwelling units created within the Large Urban Centres shall occur by way of residential intensification over the planning period.
- The County and Area municipalities should begin to consider the actions that may need to be undertaken to maintain a 20-year supply of designated growth land.
- Continue to support economic development initiatives in the County's local municipalities to foster a diverse and prosperous economy.

The County of Oxford Official Plan had several amendments to ensure recognition of generating employment and maintain a business environment that assists existing businesses, attracts new businesses and promotes opportunities to enhance the County's economic competitiveness. Amendments were made to the following area:

- Land supply, resources, infrastructure and public service facilities.
- Redesignation of industrial land
- Preventing conflicts with employment uses by protecting lands designated for agriculture and other employment purposes.
- Promotion of local food and protection of agriculture
- Redevelopment of Brownfield Sites
- Opportunities for energy, supply and climate change (Considerations of the potential negative impacts from a changing climate on the built environment, natural environment and local economy, with potential measures to mitigate such impacts, where feasible)
- Sustainable Tourism Development
- Recognition of Small Business Development (including home businesses)
- Rural employment and economic diversification

Additional Reports:

1. Economic Development Group Recommendations Report No. CS 2023-29: This report responds to the Council direction to report on a set of recommendations that were presented in June 2023 by the Economic Development Group. A committee was created to collaborate on an overall economic development strategy.

Elgin County

The County's Draft Official Plan (2023) shared that the major drivers of economic growth in the County are influenced by manufacturing, processing, the trades, research and development, and distribution and logistics industries. The County is home to several industrial operations including food processing plants and manufacturing, as well as large agricultural and smaller-farm owned operations and farms. Elgin County is a vibrant and diverse place that is rich in economic opportunity, seeing significant population growth due to their proximity to other larger cities. The County's Draft Official Plan (2023) highlights several economic development policies:

- Ensuring an adequate supply of designated and serviced employment lands to accommodate 25 years of employment growth.
- Identifying strategic employment areas to ensure protection from conversion and incompatible development.

- Protecting Strategic Employment Areas (land use permits, appropriate uses of space)
- Priority in protecting the agricultural system (particularly the interconnected elements of agricultural land, farming operations, agriculturally related and agri-tourism operations, food processing, etc.)
- Preserving the agricultural and rural character of the County through rural economic development

Additional Reports:

I. 2024 Transportation Master Plan (2024): Goods Movement Strategy: Supporting the railways is essential to the County's economic health. There is a focus on enhancing rail and truck freight to improve the integration of both systems.

City of St. Thomas

The City Council of St. Thomas's Community Strategic Plan in early 2020 committed to building a vibrant community. The goal was to enhance opportunities for connection and development to promote growth for people and businesses in the city. To support the economic growth of the city, the commitments included:

- Implementation of downtown enhancement projects that incorporated cultural and safety elements.
- Merging of the economic development entities between the City of St. Thomas and the County of Elgin to enrich services and resources.
- Establishment of a formal committee to address education and skilled training needs in the community.

St. Thomas is an area known for manufacturing, warehousing, offices and ancillary retail and cluster services. The Official Plan is still undergoing updates but the economic growth in St. Thomas is expected to be moderate, with a total employment forecast to increase to 23,800 in 2041. There are ongoing proactive public and private efforts to promote the overall city's life, working to rehabilitate and/or redevelop areas characterized by economic instability or deficient land uses. The City's objective is to combine the historic preservation and economic development in local revitalization initiatives. The city will actively support and promote economic development through the implementation of their Economic Development Strategies. The city also has a priority to encourage economic areas in the areas of advanced manufacturing, life sciences, small knowledge-based business, information technology, business services and the environment. In the future, industrial operations are required to implement the Ministry of Environment and Climate Change Guidelines.

Appendix C: Assessment Report Data Extraction Template

The following template was used to extract data from each of the assessment reports reviewed from other regions across Ontario.

Background

Public Health Units (PHUs)

Select all that apply.

- Algoma PHU
- Brant County HU
- Chatham-Kent HU
- Durham Region Health Department
- Eastern Ontario HU
- Grey Bruce HU
- Haldimand-Norfolk HU
- Haliburton, Kawartha, Pine Ridge District HU
- Halton Region Health Department
- Hamilton Public Health Services
- Hastings and Prince Edward Counties HU
- Huron Perth HU
- Kingston, Frontenac, Lennox and Addington PH
- Lambton HU
- Leeds, Grenville and Lanark District Health Unit
- Middlesex-London HU
- Niagara Region PH Department
- North Bay Parry Sound District HU
- Northwestern HU
- Ottawa PH
- Peel PH
- Peterborough Public Health
- Porcupine Health Unit
- Public Health Sudbury and Districts
- Region of Waterloo, PH
- Renfrew County and District HU
- Simcoe Muskoka District HU
- Southwestern PH
- Thunder Bay District HU
- Timiskaming HU
- Toronto PH
- Wellington-Dufferin-Guelph PH
- Windsor-Essex County HU
- York Region PH

- Unsure

Methods

Did the vulnerability assessment collect primary data?

- Yes
- No
- Unsure

If yes, what were the methods of data collection?

Select all that apply.

- Surveys
- Qualitative Interviews (e.g., Key Informant Interviews)
- Focus Groups
- Workshops
- Worksheets
- Unsure
- Other

Who was included in the engagement?

e.g., population subgroups, organizations, businesses, etc. Select all that apply.

- Internal Health Unit Staff
- Public Health Teams
- Regional Board of Health Members
- Regional Departments
- Municipal Staff and Representatives
- Public Members of the Municipalities
- Conservation Authorities
- Healthcare Organizations and Professionals
- Health Canada Staff
- Ontario Climate Consortium Staff
- Provincial Ministries
- Indigenous Groups and Organizations
- Local Educational Institutions
- Environmental Organizations
- Local Planners
- Community Volunteers
- Organizations and Individuals working with vulnerable populations (e.g., Immigrants, people living in insecure housing, etc.)
- Individuals Working or Volunteering with Climate Change-related Activities.
- Non-profit Organizations and Charities
- Religious Organizations
- Unsure
- Other

Objective of Primary Data Collection

Select all that apply.

- Identify climate change impacts of concern.
- Identify likelihood of climate impact
- Identify public perceptions and opinions about climate change and its health impacts.
- Identify expert opinion regarding potential climate change and its health impacts.
- Identify vulnerable populations.
- Identify impacts relevant to vulnerable populations.
- Identify existing data for the study area on climate-related impacts.
- Identify additional datasets that could be considered for the assessment.
- Identify potential data and knowledge gaps.
- Understand community's expectations of the public health unit.
- Identify potential actions/collaborations with community partners related to climate change mitigation and adaptation.
- Identify current knowledge of health unit staff of the connections between climate change and health and existing programs.
- Identify current health and climate change policies and plans in the health region.
- Identify current actions being taken by partners to mitigate and/or adapt to climate change.
- Identify future climate adaptation actions within existing health unit programs.
- Identify options and recommendations for reducing current and future risks to health through adaptation.
- Identify possible consequences and barriers to adaptive actions.
- Introduce the project to task force members.
- Identify priorities in response(s) to the health impacts of climate change.
- Identify sensitivity and adaptive capacity rankings for climate impacts.
- Identify effective avenues for communicating the results of the assessment.
- Identify stories of successful adaptation (e.g., on-going program implementation, public health surveillance activities, community engagement, etc.) to climate-related health risks.
- Unsure
- Other

Did this vulnerability assessment draw on other vulnerability assessments?

- Yes
- No
- Unsure

If yes, which vulnerability assessment?

Select all that apply.

- Chatham-Kent HU
- Grey Bruce HU
- Haliburton, Kawartha, Pine Ridge District HU

- Hamilton Public Health Services
- Middlesex-London HU
- Niagara Region PH Department
- Northern Ontario Climate Change and Health Collaborative
- Ottawa PH
- Peel PH
- Region of Waterloo, Wellington-Dufferin-Guelph PH
- Simcoe Muskoka District HU
- Toronto PH
- Windsor-Essex County HU
- York Region PH
- Unsure

Did this vulnerability assessment draw on other government reports?

- Yes
- No
- Unsure

If yes, which report?

Select all that apply.

- MOHLTC - Ontario Climate Change and Health Toolkit (2016)
- MOHLTC - Ontario Climate Change and Health Monitoring Study (2016)
- MOHLTC - Healthy Environments and Climate Change Guideline (2018)
- Health Canada - Climate Change and Health Vulnerability and Adaptation Assessment: Workbook for the Canadian Health Sector (2022)
- Health Canada - Cities Adapt to Extreme Heat: Celebrating Local Leadership (2016)
- Health Canada - Human Health in a Changing Climate: A Canadian Assessment of Vulnerabilities and Adaptive Capacity (2008)
- WHO - Protecting Health from Climate change: Vulnerability and Adaptation Assessment guide (2013)
- ICLEI - Canada’s Building Adaptive and Resilient Communities Program (BARC) Protocol
- Water, Air and Climate Change Bureau - Adapting to extreme heat events: Guidelines for assessing health vulnerability (2011)
- Natural Resources Canada - Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation (2014)
- Ministry of the Environment and Climate Change - Climate Change Action Plan (2016)
- Environmental Commissioner of Ontario - Facing Climate Change: Greenhouse Gas Progress Report (2016)
- National Center for Environmental Health - Assessing Health Vulnerability to Climate Change: A Guide for Health Departments (2016)
- The Lancet Countdown: tracking progress on health and climate change (2016)
- Intergovernmental Panel on Climate Change Assessment Reports
- Unsure

- Other

What data sources were used to localize climate change trends and projections?

Select all that apply.

Environment and Climate Change Canada Data (e.g., Historical Weather Station Data, Historical Air Pollutant Data, Public Weather Alerts, Past Weather and Climate, Temperature, UV Index, Air Quality Health Index, Tornado Data, etc.)
Public Safety Canada - The Canadian Disaster Database.
Public Health Ontario - Traffic-Related Air Pollution
Public Safety Canada - Floods
Climate Data Canada Portal
Ontario Climate Data Portal
Ministry of the Environment, Conservation and Parks Climate Change Data Portal
Pacific Climate Impacts Consortium Data Portal
Canadian Centre for Climate Services (CCCS) Climate Data Tool
Ontario Climate Consortium (OCC) Assessment
York University Laboratory of Mathematical Parallel Systems (LAMPS) Dataset
University of Wisconsin Dynamically Downscaled Regional Climate Models
Climate Atlas of Canada
Unsure
Other

Time Frames used as Reference for Climate Change

What was the timeframe used to represent baseline conditions?

Select all that apply.

1950-2005
1951-1980
1971-2010
1976-2005
1981-2010
1986-2005
2000-2018
Unsure
Other

What was the timeframe used to represent past conditions?

Select all that apply.

2006-2018
1950-2005
Unsure
Other

What was the timeframe used to represent future conditions?

Select all that apply.

- 2040-2069
- 2011-2040
- 2041-2070
- 2071-2100
- 2070-2099
- 2020-2049
- 2050-2079
- 2080-2100
- 2049-2069
- 2006-2100
- 2020s
- 2050s
- 2080s
- Unsure
- Other

What population subgroups in the health region were mentioned in the vulnerability assessment?

Select all that apply.

- Indigenous Populations
- Recent Immigrants
- Farm Workers (including local and migrants)
- Visible Minorities
- Mennonite Populations
- Low Education (No high school diploma or equivalency certificate)
- Unsure
- Other

If yes, what proportion of the identified population subgroup exists within region?

List out different communities of indigenous populations in the "Indigenous Populations" row under the second column. List out other relevant communities in the "other" row under the second column.

	Proportion of Population (Percentage or Count)
Indigenous Populations	
Recent Immigrants	
Farm Workers (including local and migrants)	

Visible Minorities	
Mennonite Populations	
Low Education (No high school diploma or equivalency certificate)	
Other	

Economy

What are the economic drivers of the region in the vulnerability assessment?

Select all that apply.

- Mining
- Forestry
- Agriculture
- Construction
- Manufacturing
- Accommodation and Food Service Industry
- Unsure
- Other

Geographic Considerations

Close Proximity to:

Select all that apply.

- Lake Ontario
- Lake Erie
- Lake Superior
- Lake Huron
- Lake Simcoe Basin
- Lake St. Clair
- Georgian Bay
- The Niagara Escarpment
- The US Border
- The Oak Ridges Moraine
- The Grand River Watershed
- The Saugeen Watershed
- The Watershed
- The Nottawasaga Watershed
- Maitland Valley watershed
- Thames River
- Sydenham River

Snye River
Unsure
Other

Climate Risks

Extreme Temperatures

Extreme Heat

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Heat Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- More Hot Days
- More Tropical Nights
- Heat Alert-eligible Events.
- More and Longer Heat Waves
- Urban Heat Island
- Heat Stroke
- Heat Exhaustion
- Heat Rash
- Heat Cramps
- Dehydration
- Cardiovascular Disorders
- Respiratory Illnesses
- Asthma
- Diabetes
- Renal Disease
- Pre-term Birth
- Low Birth Weight
- Infant mortality
- Psychosocial Health
- Heat-related Emergency Department Visits
- Heat-related Hospitalizations.
- Heat-related Mortality.
- Unsure
- Other

Data Sources Employed to Investigate Heat-related Health Impacts

Select all that apply.

- IntelliHealth Ontario: Heat-related illness emergency room visit and hospitalizations.
- IntelliHealth Ontario: Emergency department visits and hospitalization for myocardial infarction
- IntelliHealth Ontario: Emergency department visit and hospitalization rates for hypertension.
- IntelliHealth Ontario: All-cause mortality
- Rapid Risk Factor Surveillance System: Households with/without Air Conditioning
- Rapid Risk Factor Surveillance System: Protective Behaviours
- Rapid Risk Factor Surveillance System: Adults who are unaware of places close to their home where they can go to cool down during hot weather.
- Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Heat-related emergency department visits
- Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Heat-related emergency department visits
- Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Self-harm-related emergency department visits
- Public Health Ontario - Extreme Weather Ontario Health Profile: Rate of Hospitalizations due to Extreme Heat
- Acute Care Enhanced Surveillance (ACES): Emergency department line listings.
- Unsure
- Other

Extreme Cold

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Cold Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Decrease in cold days
- Hypothermia
- Frostbites
- Frostnip
- Windburn
- Cardiovascular Disorders
- Respiratory Illnesses
- Bronchoconstriction
- Psychosocial Health
- Decrease in Cold-related Morbidity and Mortality
- Cold-related Emergency Department Visits
- Cold-related Hospitalizations
- Cold-related Mortality
- Unsure

- Other

Data Sources Employed to Investigate Cold Related Health Impacts

Select all that apply.

- IntelliHealth Ontario: Cold-related illness emergency room visit
- Canadian Institute for Health Information: Cold-related illness emergency room visit
- Unsure
- Other

Vulnerable Populations

Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older adults (65+)
- People living in insecure housing
- People living in low-income households
- People with pre-existing health conditions
- Outdoor workers
- Rural communities
- Indigenous peoples
- Pregnant women
- Recent immigrants (within last five years)
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Extreme Weather

Extreme Weather

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Hazards Related to Extreme Weather

Select all hazards discussed in the assessment.

- Extreme Precipitation
- Extreme Rainfall
- Extreme Snowfall
- Freezing Rain
- Extreme Winds
- Thunderstorms
- Flooding
- Ice
- Ice Storm
- Winter Storms
- Droughts
- Wildfires
- Tornadoes
- Hurricanes
- Unsure
- Other

Extreme Weather-Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Food-and-Waterborne Illnesses
- Power Outages
- Private property damage and loss
- Electrocution
- Carbon Monoxide Poisoning
- Damage to public infrastructure
- Disruption of Health and Social Services
- Water Quality Impacts
- Indoor Air Quality Impacts
- Outdoor Air Quality Impacts
- Infection
- Respiratory Illnesses
- Vector-borne Diseases
- Evacuation and Relocation
- Food safety and Security Impacts
- Psychosocial Health
- Extreme Weather-Related Emergency Department Visits
- Extreme Weather-Related Hospitalizations
- Extreme Weather-Related Injuries
- Extreme Weather-Related Mortality
- Unsure
- Other

Data Sources Employed to Investigate Extreme Weather-Related Health Impacts

Select all that apply.

- Rapid Risk Factor Surveillance System: Emergency preparedness
- Statistics Canada - Discharge Abstract Database: Injury-related hospitalization count
- Canadian Community Health Survey: Drinking status and illicit drug use
- Public Health Ontario: Rate of emergency department visits attributed to extreme weather events
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous peoples
- Pregnant women
- Recent immigrants (within last five years)
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorder
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Air Quality

Air Quality

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Pollutants and Allergens

Select all exposures in the assessment.

- Aeroallergens
- Fine Particular Matter (PM0.1)
- Fine Particular Matter (PM2.5)
- Fine Particular Matter (PM10)
- Nitrogen Oxides (NOx)
- Sulphur Dioxides (SO2)
- Carbon Monoxide (CO)
- Ground-level Ozone (O3)
- Traffic-related Air pollution (TRAP)
- Unsure
- Other

Air Quality Related Health Risks and Impacts

Chronic Obstructive Pulmonary Disease (COPD). Select all health risks and impacts discussed in the assessment.

- Asthma
- COPD
- Exacerbating Existing Environmental Allergies
- Respiratory Illnesses
- Difficulty Breathing
- Throat or Lung Irritation
- Psychosocial Health
- Air Quality Related Emergency Department Visits
- Air Quality Related Hospitalizations
- Air Pollution-related Mortality
- Unsure
- Other

Data Sources Employed to Investigate Air Quality Related Health Impacts

Select all that apply.

- IntelliHealth Ontario: Asthma-related emergency department visits
- IntelliHealth Ontario: COPD-related emergency department visits
- IntelliHealth Ontario: Myocardial infarction emergency department visits and hospitalizations
- IntelliHealth Ontario: Hypertension emergency department visits and hospitalizations
- Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Asthma-related emergency department visits

- Rapid Risk Factor Surveillance System: Community and health services
- Health Canada: Non-accidental deaths
- Health Canada: Respiratory deaths
- Health Canada: Air quality related emergency department visits
- Canadian Community Health Survey: Smokers
- Public Health Ontario: At-risk populations living in traffic-related air pollution (TRAP) exposure zones
- The Hospital for Sick Children (SickKids): Ontario Asthma Surveillance Information System
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Vector Borne Disease

Mosquito-borne Diseases

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Mosquito-borne Diseases

Select all diseases discussed in the assessment.

- West Nile Virus (WNV)
- Zika Virus
- Eastern Equine Encephalitis Virus
- Jamestown Canyon Virus
- Snowshoe Hare Virus
- Malaria
- Dengue
- Chikungunya
- Yellow Fever
- Unsure
- Other

Tick-borne Diseases

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Tick-borne Diseases

Select all diseases discussed in the assessment.

- Lyme Disease
- Babesiosis
- Anaplasmosis
- Powassan Encephalitis
- Borrelia Miyamotoi
- Amblyomma Americanum (Lone-star Tick)
- Unsure
- Other

Vector Borne Disease Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Expanded range and increased survivability of black legged ticks and mosquitoes and their hosts
- Longer warm season (increase in degree days)
- Introduction of new vector insects due to favourable climate conditions
- Longer season for people to be outdoors
- Psychosocial Health

- Vector Borne Disease Related Emergency Department Visits
- Vector Borne Disease Related Hospitalizations
- Vector Borne Disease Related Mortality
- Unsure
- Other

Data Sources Employed to Investigate Vector Borne Disease Related Health Impacts

Select all that apply.

- Public Health Ontario: Infectious disease trends in Ontario
- Public Health Ontario: West Nile Surveillance
- Rapid Risk Factor Surveillance System (RRFSS): Community and Health Services
- iPHIS: West Nile Virus Cases
- iPHIS: Lyme Disease Cases
- Health Unit Surveillance and Monitoring Data: Tick Surveillance
- Health Unit Surveillance and Monitoring Data: Monthly reportable Disease Incidence Reports
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations

- People with cognitive constraints
- Unsure
- Other

Contamination of Food and Water

Water-and-Food-Borne Diseases

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Enteric Diseases

Select all diseases discussed in the assessment.

- Campylobacter Enteritis
- Salmonellosis
- Cholera
- Norovirus
- Verotoxin-producing Escherichiacoli
- Giardiasis
- Cryptosporidiosis
- Listeria
- Shigella
- Unsure
- Other

Water-and-Food-Borne Diseases Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Diarrheal Diseases
- Contamination of Drinking Water
- Contamination of Surface Water Source
- Contamination of Groundwater
- Contamination of Private Wells
- Contamination of Recreational Water
- Contamination of Irrigation Water
- Increased Growth and Survival of Pathogens and Pests
- Growth of Blue-Green Algae (Cyanobacteria)
- Algal Blooms
- Increased Dust-borne Contaminants (due to drier conditions)
- Overloaded Water Treatment and Storm Water Managements Systems (due to precipitation)
- Compromised Refrigeration of Food (due to power outages)
- Greater Spoilage Rates of Food (due to higher temperatures)

- Psychosocial Health
- Water-and-Food-Borne Diseases Related Emergency Department Visits
- Water-and-Food-Borne Diseases Related Hospitalizations
- Water-and-Food-Borne Diseases Related Mortality
- Unsure
- Other

Data Sources Employed to Investigate Water-and-Food-Borne Diseases Related Health Impacts

Select all that apply.

- Public Health Ontario: Infectious disease trends in Ontario
- Ministry of Health and Long-Term Care: Water Testing Information System
- iPHIS: Cases of food-and-waterborne illness
- iPHIS: Rates of enteric illnesses
- Health Unit Surveillance and Monitoring Data: Beach Surveillance
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People cognitive constraints

- Unsure
- Other

Water and Food Security

Water and Food Security

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

Water and Food Security Related Health Risks and Impacts

Select all health risks discussed in the assessment.

- Decreased Drinking Water Supplies
- Increased Water Demands
- Increased Growing Seasons
- Decreased Growing Seasons
- Increased Crop Yields
- Decreased Crop Yields
- Increased Food Cost
- Food Insecurity
- Psychosocial Health
- Water and Food Security Related Emergency Department Visits
- Water and Food Security Related Hospitalizations
- Water and Food Security Related Mortality
- Unsure
- Other

Data Sources Employed to Investigate Water and Food Security Related Health Impacts

Select all that apply.

- Statistics Canada: Food insecurity
- Health Unit Surveillance and Monitoring Data: Food Insecurity
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions

- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Ultraviolet Radiation (UVR)

UVR/Sun Exposure

Was this climate risk included in the vulnerability assessment?

- Yes
- No
- Unsure

UVR/Sun Exposure Related Health Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Malignant Melanoma
- Non-melanoma cancer
- Cataracts
- Stratospheric Ozone Depletion
- Psychosocial Health
- UVR Related Emergency Department Visits
- UVR Related Hospitalizations
- UVR Related Mortality
- Unsure
- Other

Data Sources Employed to Investigate UVR/Sun Exposure Related Health Impacts

Select all that apply.

- IntelliHealth Ontario: Malignant melanoma
- IntelliHealth Ontario: Melanoma of Skin
- Rapid Risk Factor Surveillance System: Protective behaviours
- Cancer Care Ontario: Ontario cancer registry
- Cancer Care Ontario: Rate of malignant melanoma
- Cancer Care Ontario: Rate of non-epithelial skin cancers
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)
- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- Recent immigrants (within the last five years)
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Psychosocial Health

Psychosocial Health Included in Assessment

Was this climate risk included in the vulnerability assessment?

- Yes

- No
- Unsure

Psychosocial Health Related Risks and Impacts

Select all health risks and impacts discussed in the assessment.

- Major Depressive Disorder
- Post-traumatic Stress Disorder
- Fear
- Anxiety
- Ecoanxiety
- Ecoparalysis
- Econostalgia
- Solastalgia
- Trauma
- Loss of Livelihood
- Loss of Sense of Place
- Grief
- Depression
- Anger
- Helplessness
- Loss of Culture
- Substance Misuse
- Distress
- Increased Rates of Hospitalizations
- Suicide
- Unsure
- Other

Data Sources Employed to Investigate Climate Change Related Psychosocial Health Impacts

Select all that apply.

- IntelliHealth Ontario: Emergency department visit rates for Dementia and Alzheimers
- IntelliHealth Ontario: Emergency department visit rates for Depression
- IntelliHealth Ontario: Emergency department visit rates for Suicide and self-harm
- IntelliHealth Ontario: Emergency department visit rates for Post-traumatic Stress Disorder
- Unsure
- Other

Vulnerable Populations

People with pre-existing health conditions include chronic diseases, mental health disorders, mobility limitations, and cognitive constraints. Check all vulnerable populations of this climate risk discussed in the assessment.

- Children (Ages five and under)

- Children (Ages 6-17)
- Older Adults (65+)
- People with pre-existing health conditions
- People living in insecure housing
- People living in low-income households
- Outdoor workers
- Rural communities
- Indigenous people
- Pregnant women
- Recent immigrants (within the last five years)
- People living in areas prone to flooding
- Unsure
- Other

Who was included in people with pre-existing health conditions?

If the vulnerable population of "people with pre-existing health conditions" was checked in the category above, check all of the following that apply.

- People with chronic diseases
- People with mental health disorders
- People with mobility limitations
- People with cognitive constraints
- Unsure
- Other

Discussion

Limitations

What limitations of the vulnerability assessment were identified?

- Limitations in climate projection data
- Limitations in health data
- Limited local information to better understand vulnerabilities
- Limited information on adaptive capacity
- Limited understanding of the linkages between climate variables and health outcomes
- Limitations in timing
- Limitations in primary data collection (engagements do not include all stakeholders)
- Unsure
- Other

Existing Adaptive Actions within the Health Unit

Select all that apply.

- Environmental monitoring of climate risks (e.g., source water monitoring)
- Health and disease surveillance related to climate risks (e.g., Rapid Risk Factor Surveillance System, mosquito and tick surveillance, etc.)

- Disease and Injury prevention (e.g., mental health initiatives to address climate anxiety and stress)
- Population and stakeholder surveys on climate change perceptions
- Population assessment (e.g., identifying at-risk populations)
- Health promotion and education of issues relating to climate change (e.g., social media)
- Emergency preparedness and response planning (e.g., provide public services during emergencies)
- Forecasting and early warning systems/alerts
- Regional plans which support climate change adaptation
- Regional plans which support climate change mitigation
- Health Protection activities (e.g., vehicle idling policies)
- Unsure
- Other

Existing Adaptive Actions Outside of Public Health

Select all that apply.

- Multi-jurisdictional outbreak surveillance
- Inspection of food products and issuing food recalls.
- Management and assessment of local farms to ensure food safety
- Land use planning activities and building code policies
- Data analytics and visualization development of maps for floodplains and potential vulnerable populations
- Strategies and activities for existing water and wastewater systems for addressing extreme weather events
- Drinking water management (e.g., source water protection initiatives, by-laws for water use restriction, etc.)
- Emergency preparedness and response
- Risk messaging and alerts
- Food security programs (e.g., community garden programs)
- Municipal heating and cooling areas
- Tree planning and urban forest strategies
- Unsure
- Other

Recommendations within Public Health

Select all that apply.

- Strengthen health and disease surveillance related to climate risks
- Strengthen environmental monitoring programs (e.g., changes in surface water algae)
- Strengthen early warning systems and disaster risk management
- Strengthen primary health care services
- Strengthen health promotion and education approaches
- Strengthen health protection programs, policies, and measures (e.g., food handler training)

- Support and advocate for local policy and program development related to climate change adaptation
- Explore additional and new datasets related to climate risks and health outcomes
- Mainstreaming climate change into public health policy
- Consider health equity and vulnerable populations in adaptation planning (e.g., targeted messaging for vulnerable populations)
- Strengthen emergency preparedness and response (e.g., focus on vulnerable populations, consider implementing surveys, promote personal preparedness, etc.)
- Strengthen engagement with key stakeholders
- Engage additional population subgroups and experts on climate change and health (e.g., schools and youths)
- Unsure
- Other

Recommendations Outside of Public Health

Select all that apply.

- Develop public health measures in forestry to reduce air quality impacts to local residents from wildfire events
- Tree planning and urban forest strategies
- Cross-sector emergency management planning
- Explore effective built environment interventions (e.g., green infrastructure, cool pavements, cool roofs, air conditioning, etc.)
- Strengthen source water protection
- Review available GIS datasets and maps to inform future extreme weather risk and emergency response
- Review land use planning best practices to reduce climate change health impacts
- Strengthen community connection
- Unsure
- Other

Next Steps Following the Vulnerability Assessment

Select all that apply.

- Develop a regional Climate Change Action Plan
- Develop policies and measures that support climate change mitigation and adaptation
- Develop an inventory of adaptation options to be explored by public health and relevant stakeholders
- Develop a monitoring plan
- Develop indicators for monitoring
- Establish integrated, ongoing climate change and health surveillance
- Develop health promotion activities on climate change health impacts and adaptation measures
- Coordinate programming and collaborating with key stakeholders across sectors
- Integrate climate change considerations into existing public health programs and activities

- Further investigate climate change related impacts on vulnerable populations
- Fill knowledge gaps identified in the assessment
- Fill gaps in current climate change adaptation actions in the health unit
- Continue to strengthen partnerships between the health unit and the community
- Unsure
- Other

Key Takeaways

Key takeaways of the data extractor.

Appendix D: Findings from Comprehensive Review

The following sections present the top 10 results that emerged within each data extraction category of the review of completed climate change and health vulnerability assessments in other health units and jurisdictions.

1.0 Context

Assessments began with a community overview or introduction to the health region. The commonly discussed demographics within this introduction include:

1. Indigenous Populations (n=7)
2. Outdoor workers (n=7)
3. Recent Immigrants (n=6)
4. Older adults (n=7)
5. Children (n=5)
6. Low income (n=5)
7. Visible Minorities (n=4)
8. Homeless/precariously housed (n=3)
9. Pregnant women (n=2)
10. People experiencing social isolation (n=2)

Along with information on the demographics, health units would often mention the economic drivers of the region, which include agriculture (n=7), mining (n=6), forestry (n=6), construction (n=6), manufacturing (n=2), and tourism (including accommodation and food service industry) (n=2).

Reports also discussed geographic considerations of the health unit. Including the region's proximity to the Great Lakes (n=8), other lakes (n=5), rivers and watersheds (n=8), conservation and protection areas (n=3), the Oak Ridges Moraine (n=2), Pelee Island (n=1), the Niagara Escarpment (n=1), and the US Border (n=1). These were often connected to how proximity to such geographic considerations may make the health region more vulnerable to certain exposures (e.g, proximity to water bodies may lead to vulnerability to flooding, and proximity to the US border may lead to vulnerability to air pollution).

Some health units (N=7) collected primary data to inform their vulnerability assessments. The employed data collection methods include workshops (n=4), interviews (n=3), focus groups (n=3), questionnaires (1), external advisory panel (=1), consultations (n=1), worksheets (n=1), and surveys (n=1). Common stakeholders involved in engagement include:

1. Internal Health Unit Staff (n=7)
2. Municipal Staff and Representatives (n=5)
3. Conservation Authorities (n=5)
4. Healthcare Organizations and Professionals (n=4)
5. Health Canada Staff (n=4)
6. Organizations and Individuals working with vulnerable populations (n=4)

7. Individuals Working or Volunteering with Climate Change-related Activities (n=4)
8. Local Educational Institutions (n=4)
9. Provincial Ministries (n=3)
10. Environmental Organizations (n=3)
11. Regional Departments (n=3)
12. Local Planners (n=3)
13. Non-profit Organizations and Charities (n=3)

The common objectives of primary data collection included:

1. Identify expert opinion regarding potential climate change and its health impacts (n=4)
2. Identify climate change impacts of concern (n=4)
3. Identify impacts relevant to vulnerable populations (n=4)
4. Identify current health and climate change policies and plans in the health region (n=4)
5. Identify future climate adaptation actions within existing health unit programs (n=4)
6. Identify vulnerable populations (n=3)
7. Identify potential data and knowledge gaps (n=3)
8. Identify current actions being taken by partners to mitigate and/or adapt to climate change (n=3)
9. Identify options and recommendations for reducing current and future risks to health through adaptation (n=3)
10. Identify likelihood of climate impact (n=3)

Five assessments reference the previously completed vulnerability assessments from Simcoe Muskoka District Health Unit (n=4), Middlesex-London Health Unit (n=4), Peel Public Health (n=2), Toronto Public Health (n=1), and York Region Public Health (n=1).
All assessments also referred to other reports when discussing climate risks. The commonly mentioned reports include:

1. Intergovernmental Panel on Climate Change Assessment Reports (n=9)
2. World Health Organization Protecting Health from Climate Change Vulnerability and Adaptation Assessment guide (2013) (n=4)
3. Health Canada - Human Health in a Changing Climate A Canadian Assessment of Vulnerabilities and Adaptive Capacity (2008) (n=4)
4. Ontario Ministry of Health and Long-Term Care Ontario Climate Change and Health Toolkit (2016) (n=4)
5. Natural Resources Canada Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation (2014) (n=3)
6. ICLEI Canada’s Building Adaptive and Resilient Communities Program Protocol (n=3)
7. Ontario Ministry of Health and Long-Term Care Healthy Environments and Climate Change Guideline (n=2)
8. The Lancet Countdown: Tracking Progress on Health and Climate Change (2016) (n=2)
9. Ontario Ministry of Health and Long-Term Care Ontario Public Health Standards (n=2)
10. Natural Resources Canada (From Impacts to Adaptation: Canada in a Changing Climate) (n=2)
11. Canada's Changing Climate Report (2019) (n=2)

Health units outlined local climate projections in their assessments. The common data sources used to inform climate projections include:

1. Environment and Climate Change Canada Data (n=10)
2. Ministry of the Environment, Conservation and Parks Air Quality Ontario (n=5)
3. Public Safety Canada - The Canadian Disaster Database (n=5)
4. Ontario Climate Data Portal Climate Data Canada Portal (n=4)
5. Climate Atlas of Canada (n=2)
6. Ministry of the Environment, Conservation and Parks Climate Change Data Portal (n=2)
7. York University Laboratory of Mathematical Parallel Systems (LAMPS) Dataset (n=2)
8. Natural Resources Canada Data (n=2)
9. Climatedata.ca (n=2)
10. Ontario Climate Change and Health Modelling Study (n=2)

2.0 Climate Health Impacts

2.1 Extreme Temperatures

Extreme temperatures are categorized as extreme heat and extreme cold. Warmer temperature averages are impacting the summer and winter months, with health-related impacts from climate variability.

2.1.1 Extreme Heat

As greenhouse gasses (GHGs) continue to increase rapidly due to anthropogenic emissions, Canada's climate will continue to change in the coming decades (Berry et al., 2022). As a whole, Canada is projected to warm at approximately twice the rate of the global average, with even higher rates of warming in the Northern region (Bush and Lemmen, 2019).

In this systematic review, all 13 assessments mentioned extreme heat as a climate change impact of concern in their respective health units. Health units also discussed the impacts relevant to extreme heat. The most commonly mentioned impacts include:

1. More Hot Days (n=11)
2. Heat-related Mortality (n=11)
3. Heat-related Emergency Department Visits (n=10)
4. Cardiovascular Disorders (n=8)
5. Urban Heat Island (n=8)
6. Heat Stroke (n=8)
7. Heat Exhaustion (n=8)
8. Heat Cramps (n=8)
9. More and Longer Heat Waves (n=8)

10. Respiratory Illnesses (n=7)

The most commonly used datasets to investigate local extreme heat-related health impacts include:

1. Rapid Risk Factor Surveillance System: Households with/without Air Conditioning (n=3)
2. Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Heat-related emergency department visits (n=3)
3. IntelliHealth: Ontario Mortality Data (n=2)
4. Local Health Unit Data: Excess heat-related (n=1)
5. IntelliHealth Ontario: Emergency department visits and hospitalization for myocardial infarction (n=1)
6. IntelliHealth Ontario: Emergency department visit and hospitalization rates for hypertension (n=1)
7. IntelliHealth: Ontario Mortality Data (n=1)
8. IntelliHealth Ontario: All-cause mortality (n=1)
9. Canadian Community Health Survey: heart disease (n=1)
10. Rapid Risk Factor Surveillance System: Adults who are unaware of places close to their home where they can go to cool down during hot weather (n=1)
11. Rapid Risk Factor Surveillance System: Protective Behaviors (n=1)
12. Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Self-harm-related emergency department visits (n=1)
13. Acute Care Enhanced Surveillance: Emergency department line listings (n=1)
14. Local Hospital data: Heat-related illness emergency department (ED) visits (n=1)
15. Local Health Unit: Number of Heat Alerts Issued (n=1)
16. Public Health Ontario - Extreme Weather Ontario Health Profile: Rate of Hospitalizations due to Extreme Heat (n=1)
17. Canadian Institute for Health Information: Discharge Abstract Database (n=1)
18. Statistics Canada: walking or cycling to work as their primary mode of transportation (n=1)
19. Statistics Canada: Types of mechanical cooling by household (n=1)
20. Not included (n=2)
21. Unsure (n=1)

2.1.2 Extreme Cold

While extreme heat events and temperatures are projected to increase, cold extremes and averages are expected to decrease in Canada (Berry et al., 2022; Bush and Lemmen, 2019).

All 13 vulnerability assessments mentioned extreme cold as a climate impact of concern in their respective health units. The most commonly mentioned impacts include:

1. Frostbites (n=10)
2. Hypothermia (n=9)
3. Decrease in cold days (n=9)
4. Cold related mortality (n=8)

5. Cardiovascular disorders (n=6)
6. Decrease in Cold-related Morbidity and Mortality (n=5)
7. Acclimatization to warm weather (n=5)
8. Cold-related Emergency Department Visits (n=5)
9. Windburn (n=4)
10. Cold-related Hospitalizations (n=3)
11. Respiratory Illnesses (n=3)

The most commonly used datasets to investigate local extreme cold-related health impacts include:

1. Canadian Institute for Health Information: Cold-related illness emergency room visit (n=2)
2. IntelliHealth Ontario: Cold-related illness emergency room visit (n=1)
3. Canadian Institute for Health Information: Crude rate of cold-related emergency department visits (n=1)
4. Local Health Unit: Number of Cold Alerts Issued (n=1)
5. IntelliHealth: Ontario Mortality Data (n=1)
6. IntelliHealth: Ambulatory Emergency External Cause (n=1)
7. Public Health Ontario: Ontario Health Profile (n=1)
8. Not included (n=4)
9. Unsure (n=4)

Health units identified vulnerable populations to extreme temperatures. The most commonly mentioned vulnerable populations include:

1. Children (n=12)
2. Older adults (n=12)
3. People living in insecure housing (n=12)
4. People with pre-existing health conditions (n=12)
5. Outdoor workers (n=13)
6. People living in low-income households (n=11)
7. Pregnant women (n=6)
8. People who undertake outdoor activities (n=6)
9. Socially and physically isolated people (n=7)
10. Recent Immigrants (n=4)
11. People who drink alcohol or use illicit substances (n=4)
12. Racialized communities and visible minorities (n=4)
13. People with no air conditioning (n=4)

When discussing people with pre-existing conditions, health units discussed people with chronic diseases, people with mobility limitations, people with cognitive constraints, people with mental health disorders, persons with disabilities, and individuals on particular types of medication.

2.2 Extreme Weather Events

In Canada, climate projections indicate an increase in severe weather events (e.g., precipitation, storms, rainfall, etc.) and hazards (e.g., drought, hurricanes, wildfires, flooding, etc.) (Berry et al., 2022).

In this systematic review, all 13 assessments mentioned extreme weather events as a climate change impact of concern. Health units discussed both the hazards and health impacts relevant to extreme weather events. The most commonly mentioned hazards include:

1. Flooding (n=13)
2. Extreme Precipitation (n=11)
3. Extreme Rainfall (n=11)
4. Tornadoes (n=10)
5. Thunderstorms (n=8)
6. Droughts (n=7)
7. Wildfires (n=7)
8. Extreme Winds (n=6)
9. Freezing Rain (n=6)
10. Hail (n=5)
11. Winter Storms (n=5)

The most commonly mentioned health impacts include:

1. Extreme Weather-Related Injuries (n=11)
2. Power Outages (n=11)
3. Private property damage and loss (n=11)
4. Damage to public infrastructure (n=11)
5. Disruption of Health and Social Services (n=10)
6. Impacts Psychosocial Health (n=10)
7. Extreme Weather-Related Mortality (n=10)
8. Food safety and Security (n=8)
9. Vector-borne Diseases (n=11)
10. Water Quality Impacts (n=7)

The most commonly used datasets to investigate local extreme weather-related health impacts include:

1. Public Safety Canada: Canadian disaster database (n=3)
2. Local Conservation Authority: Flood vulnerable structures and persons (n=2)
3. Rapid Risk Factor Surveillance System: Emergency preparedness (n=2)
4. Public Health Ontario: Rate of emergency department visits attributed to extreme weather events (n=2)
5. Statistics Canada: Population living in high apartment towers (n=1)
6. Statistics Canada: Houses in need of major repair (n=1)
7. Canadian Institute for Health Information - Discharge Abstract Database: Injury-related hospitalization count (n=1)

8. Canadian Institute for Health Information: Discharge Abstract Database (n=1)
9. Canadian Institute for Health Information: Mental health-related emergency department visits (n=1)
10. Canadian Institute for Health Information: Average rate of mental health emergency department visits (n=1)
11. Local Hazard Identification and Risk Assessment (HIRA) (n=1)
12. Local Region Data: Number of low-income individuals residing within a floodplain in by census tract (n=1)
13. IntelliHealth: Ambulatory Emergency External Cause (n=1)
14. Not included (n=2)
15. Unsure (n=3)

When discussing damage to private property, many health units specifically mentioned basement flooding as a concern.

Health units also identified vulnerable populations to extreme weather events. The most commonly mentioned vulnerable populations include:

1. Children (n=11)
2. Older adults (n=11)
3. People living in insecure housing (n=11)
4. People with pre-existing health conditions (n=11)
5. People living in low-income households (n=9)
6. People living in areas prone to flooding (n=6)
7. Outdoor workers (n=4)
8. People who are socially isolated (n=4)
9. Recent immigrants (n=3)
10. Pregnant women (n=3)

Under vulnerability to extreme weather, people with pre-existing health conditions include people with chronic diseases, mobility limitations, cognitive constraints, mental health disorders, disabilities, compromised immune function, sensory impairments, and individuals on particular types of medications.

2.3 Vector-Borne Disease

The presence of infectious diseases, protective behaviors by individuals, and people's sensitivity to pathogens are all affected by climate change (Berry et al., 2022). As the climate continues to warm, Lyme disease, WNV, and other diseases will emerge or spread throughout Canada (Berry et al., 2022).

Health units (N=13) discussed the mosquito-and-tick-borne diseases of concern. All mentioned mosquito-borne diseases include:

1. Disease West Nile Virus (WNV) (n=12)
2. Eastern Equine Encephalitis Virus (n=8)
3. Malaria (n=6)
4. Jamestown Canyon Virus (n=2)
5. Snowshoe Hare Virus (n=2)
6. Dengue (n=5)
7. Chikungunya (n=5)
8. Rift Valley Fever (n=2)
9. Zika Virus (n=5)
10. Yellow Fever (n=1)
11. Rocky Mountain Spotted Fever (n=1)
12. Japanese encephalitis (n=1)
13. La Cross encephalitis (n=1)
14. St. Louis encephalitis (n=1)
15. Culex pipiens mosquitoes (n=1)
16. Culiseta. melanura mosquitoes (n=1)

All mentioned tick-borne diseases include:

1. Lyme Disease (n=12)
2. Babesiosis (n=4)
3. Anaplasmosis (n=4)
4. Powassan Encephalitis (n=5)
5. Amblyomma Americanum (Lone-star Tick) (n=3)
6. Rocky Mountain spotted fever (n=4)
7. Plague (n=1)
8. Borrelia Miyamotoi (n=2)
9. Tularemia (n=2)

The most commonly mentioned health impacts include:

1. Expanded range and increased survivability of ticks, mosquitoes, and their hosts (n=12)
2. Longer warm season (increase in degree days) (n=10)
3. Vector-borne disease related mortality (n=6)
4. Vector-borne disease related symptoms (e.g., fever, headache, neurological signs, etc.) (n=5)
5. Longer season for people to be outdoors (n=4)
6. Introduction of new vector insects due to favorable climate conditions (n=5)

7. Psychosocial Health (n=1)
8. Increased the risk when traveling to endemic areas (n=1)
9. Post-treatment of diseases (n=1)

The most commonly used datasets to investigate vector-borne disease-related health impacts include:

1. Public Health Ontario: West Nile Surveillance (n=5)
2. Public Health Ontario: Infectious disease trends in Ontario (n=4)
3. Health Unit Surveillance and Monitoring Data: Monthly reportable Disease Incidence Reports (n=4)
4. iPHIS: West Nile Virus Cases (n=3)
5. iPHIS: Lyme Disease Cases (n=3)
6. Health Unit Surveillance and Monitoring Data: Tick Surveillance (n=3)
7. Local Region Data: Presence of Culex pipiens and Culex restuans (n=1)
8. Local Region Data: Human Cases of West Nile Surveillance (n=1)
9. Local Region Data: Presence of Culiseta melanura (n=1)
10. Local Region Data: Human Cases of Eastern Equine Encephalitis (n=1)
11. Local Region Data: Presence of black-legged (n=1)
12. Local Region Data: Human cases of Lyme Disease (n=1)
13. Local Region Data: Lyme disease surveillance program (n=1)
14. Local Region Data: West Nile virus activity and accumulated degree days (n=1)
15. Local Environmental Health Department: Mosquitos tested (n=1)
16. Local Health Unit: Number of Positive Mosquito Pools (n=1)
17. Rapid Risk Factor Surveillance System: Community and Health Services (n=1)
18. Public Health Ontario Risk Area Map (n=1)
19. Public Health Ontario - Local Health Unit: Historical Comparisons (n=1)
20. Public Health Ontario: Estimated risk areas for black-legged ticks (n=1)
21. Not included (n=3)

Health units also identified vulnerable populations to vector-borne diseases, with the most commonly mentioned ones being:

1. Children (n=10)
2. Older adults (n=10)
3. Outdoor workers (n=7)
4. People with pre-existing health conditions (n=6)
5. Pregnant women (n=4)
6. People living in low-income households (n=2)
7. People living in insecure housing (n=2)
8. Commuters (n=2)
9. Those who spend time outdoors (n=5)
10. Women (n=2)

Under vulnerability to vector-borne diseases, people with pre-existing health conditions include

people with chronic diseases, mental health disorders, suppressed or developing immune systems, and disabilities.

2.4 Food-and-Water-borne Illness

Related to natural hazards, pathogens can be carried into water bodies following precipitation to cause water-borne disease (Berry et al., 2022). Furthermore, climate change has also been found to have impacts on the occurrence of food-borne diseases due to extreme weather events and changing seasons (Berry et al., 2022).

In this systematic review, all 13 assessments mentioned food-and-water-borne illnesses as a climate change impact of concern in their respective health units. Health units also discussed the enteric disease and health impacts relevant to extreme weather events.

The most commonly mentioned enteric disease include:

1. Verotoxin-producing Escherichiacoli (n=10)
2. Campylobacter Enteritis (n=9)
3. Salmonellosis (n=9)
4. Giardiasis (n=7)
5. Cryptosporidiosis (n=7)
6. Norovirus (n=3)
7. Amebiasis (n=2)
8. Listeria (n=2)
9. Shigella (n=2)
10. Clostridium botulinum (n=1)
11. S. Typhi (Typhoid) (n=1)
12. Yersiniosis (n=1)
13. Hepatitis A (n=1)
14. Clostridium perfringens (n=1)
15. Vibrio (n=1)

The most commonly mentioned health impacts include:

1. Contamination of Drinking Water (n=12)
2. Contamination of Recreational Water (n=12)
3. Algal Blooms (n=11)
4. Greater Spoilage Rates of Food due to higher temperatures (n=9)
5. Increased Growth and Survival of Pathogens and Pests (n=9)
6. Growth of Blue-Green Algae (Cyanobacteria) (n=8)
7. Compromised refrigeration of food due to power outages (n=8)
8. Behavioural changes leading to expanded outdoor eating activities (n=7)
9. Contamination of Surface Water Source (n=7)

10. Contamination of Private Wells (n=7)

The most commonly used datasets to investigate food-and-water-borne illness-related health impacts include:

1. Public Health Ontario: Infectious disease trends (n=4)
2. iPHIS: Cases of food-and-waterborne illness (n=2)
3. iPHIS: Rates of enteric illnesses (n=2)
4. Local Health Unit Surveillance and Monitoring Data: Beach Surveillance (n=2)
5. Local Health Unit: The number of reported campylobacter, salmonella, giardia, Verotoxin-producing Escherichia coli and cryptosporidium infections reported (n=1)
6. Ontario Ministry of Health and Long-Term Care: Water Testing Information System (n=1)
7. Hedgehog database: Bacterial lab analysis of all submitted samples from private drinking wells (n=1)
8. Local Region Data: Reportable diseases (n=1)
9. Local Health Unit: Number of Beaches Closed due to Bleach-Green Algae Blooms (n=1)
10. Local Health Unit: Number of human cases of disease related to pathogens in food or water (n=1)
11. Public Health Ontario: Local Health Unit: Historical Comparisons (n=1)
12. Not included (n=3)

Health units also identified vulnerable populations to food-and-water-borne illnesses. The most commonly mentioned vulnerable populations include:

1. Older adults (n=10)
2. People with pre-existing health conditions (n=9)
3. Children (n=8)
4. People living in low-income households (n=8)
5. Women (n=5)
6. Pregnant women (n=4)
7. low education (n=3)
8. Outdoor workers (n=3)
9. Individuals who get drinking water from a private water system (n=3)
10. Indigenous People (n=2)

Under vulnerability to food-and-water-borne illness, people with pre-existing health conditions include people with chronic diseases, suppressed or developing immune systems, mental health disorders, and disabilities.

2.5 Food-and-Water Security

Climate change has implications on food systems globally and in Canada, with impacts on food production, processing, distribution, preparation, and consumption (Berry et al., 2022).

Food-and-water security was discussed in 12 of 13 assessments. The most commonly mentioned impacts include:

1. Increased Food Cost (n=9)
2. Food Insecurity (n=9)
3. Decreased Crop Yields (n=7)
4. Decreased Drinking Water Supplies (n=6)
5. Increased Growing Seasons (n=3)
6. Food distribution and production disruptions (n=3)
7. Psychosocial Health (n=2)
8. Water and Food Security Related Hospitalizations (n=2)
9. Psychosocial Health (n=2)
10. Threatens fish populations (n=2)
11. Disruption to the local supply of food as a result of extreme weather events (n=2)

The most commonly used datasets to investigate food-and-water security-related health impacts include:

1. Other: Not included (n=4)
2. Nutritious Food Basket (n=2)
3. Nutritious Food Basket: Key measures of food insecurity (n=1)
4. Canadian Community Health Survey: Households classified as moderately or severely food insecure (n=1)
5. Local Health Unit: average weekly cost of a nutritious food basket to feed a family of four (n=1)
6. The Canadian Community Health Survey: Food insecurity (n=1)
7. Statistics Canada: Food insecurity (n=1)
8. Rapid Risk Factor Surveillance System: Percent of households that, because of lack of money, worried that there would not be enough to eat or didn't have enough food to eat or didn't eat the quality or variety of foods that they wanted eat (n=1)
9. Local Region Data: Monthly income compared to monthly rent and food costs for individuals
10. Local Region Data: Monthly income compared to monthly rent and food costs for families
11. Local Region Data: Drinking Water Systems
12. Unsure (n=2)

All mentioned vulnerable populations include:

1. Older adults (n=6)

2. Children (n=5)
3. People with pre-existing health conditions (n=5)
4. Those living close to the land (n=2)
5. People who are food insecure (n=2)
6. Female-headed households (n=2)
7. Pregnant women (n=2)
8. Women (n=1)
9. People living in insecure housing (n=1)
10. Persons living in rooming houses or social housing (n=1)
11. Older adults living alone (n=1)
12. People without air conditioning (n=1)
13. Outdoor workers (n=1)
14. Unemployed persons (n=1)
15. Persons with limited access to social support systems (n=1)
16. Indigenous People
17. Rural communities (n=1)
18. Single parent families (n=1)
19. People with private wells (n=1)
20. Racialized people (n=1)
21. Recreation enthusiasts (n=1)
22. Athletes (n=1)
23. Active transportation and transit user (n=1)
24. Agricultural workers (especially migrants) (n=1)
25. Outdoor food vendors (n=1)
26. Long-term care homes (n=1)
27. People in hospitals (n=1)
28. People who smoke (n=1)

Under vulnerability to food-and-water security-related impacts, people with pre-existing health conditions include people with chronic diseases, suppressed or developing immune systems, mental health disorders, and disabilities.

2.6 Air Quality

Exposure to air pollutants such as fine particulate matter and ozone increases with climate change, with health outcomes ranging from respiratory symptoms to premature mortality (Berry et al., 2022).

In this systematic review, all 13 assessments mentioned air quality as a climate change impact of concern in their respective health units. Health units also discussed the pollutants or allergens of concern, and the health impacts relevant to poor air quality. The most commonly mentioned pollutants and allergens include:

1. Particulate Matter 2.5 (n=10)
2. Ground-level Ozone (n=9)
3. Nitrogen Oxides (n=9)
4. Aeroallergens (n=8)
5. Traffic-related Air pollution (n=6)
6. Particulate Matter 10 (n=5)
7. Particulate Matter 0.1 (n=4)
8. Carbon Monoxide (n=3)
9. Volatile organic compounds (n=2)
10. Transboundary industrial and residential emissions (n=2)

The most commonly mentioned health impacts include:

1. Asthma (n=12)
2. Air Pollution-related Mortality (n=11)
3. Exacerbating Existing Environmental Allergies (n=10)
4. Respiratory Illnesses (n=9)
5. COPD (n=9)
6. Air Quality Related Hospitalizations (n=8)
7. Cardiovascular conditions (n=8)
8. Throat or Lung Irritation (n=7)
9. Air Quality Related Emergency Department Visits (n=6)
10. Cancer (n=6)

The most commonly used datasets to investigate local air quality-related health impacts include:

1. IntelliHealth Ontario: Asthma-related emergency department visits (n=3)
2. Canadian Community Health Survey: Smokers (n=2)
3. IntelliHealth Ontario: COPD-related emergency department visits (n=2)
4. Public Health Ontario: At-risk populations living in traffic-related air pollution (TRAP) exposure zones (n=2)
5. Health Unit Data: Estimated number of excess hospital admissions due to air quality (n=1)
6. Health Unit Data: Population with pre-existing health (n=1)
7. Health Unit Data: Estimated excess mortality (n=1)

8. IntelliHealth Ontario: Myocardial infarction emergency department visits and hospitalizations (n=1)
9. IntelliHealth Ontario: Hypertension emergency department visits and hospitalizations (n=1)
10. IntelliHealth: Selected respiratory Conditions (n=1)
11. IntelliHealth: Age-standardized rate of hospitalizations for asthma and COPD (n=1)
12. IntelliHealth Ontario: rates of emergency department visits for seasonal allergies (n=1)
13. IntelliHealth Ontario: Ontario Mortality Data (n=1)
14. IntelliHealth Ontario: Ambulatory Emergency External Cause (n=1)
15. IntelliHealth Ontario: Population Estimates and Projections (n=1)
16. Rapid Risk Factor Surveillance System: Percent of adults familiar with the Air Quality Health Index (n=1)
17. Rapid Risk Factor Surveillance System: Familiarity of York Region adults with the AQHI (n=1)
18. Rapid Risk Factor Surveillance System: York Region adults familiar with the AQHI who report changing their activities based on the AQHI (n=1)
19. Health Canada: Health impacts of air pollution in Canada: an estimate of premature mortalities (n=1)
20. Canadian Institute for Health Information - Ambulatory Emergency External Cause Database: Asthma-related emergency department visits (n=1)
21. Not included (n=3)
22. Unsure (n=1)

The most commonly mentioned vulnerable populations include:

1. Children (n=11)
2. Older adults (n=11)
3. People with pre-existing health conditions (n=11)
4. Outdoor workers (n=8)
5. People living in low-income households (n=8)
6. People who spend time outdoors (n=5)
7. Those who smoke tobacco (n=5)
8. Pregnant women (n=4)
9. Those living in close proximity to transportation pollution (n=3)
10. Unemployed persons (n=3)

Under vulnerability to air quality-related impacts, people with pre-existing health conditions include people with chronic diseases, mental health disorders, disabilities, and people suffering from asthma or allergies.

2.7 Ultraviolet Radiation (UVR)

Projections on the level and intensity of UVR exposure in future climate scenarios are uncertain, however, it is clear that UVR overexposure can lead to cancers, premature aging of the eye, and immunosuppression (Berry et al., 2022).

Vector-borne diseases were discussed in eight of 13 assessments. The most commonly mentioned UVR related impacts include:

1. Malignant Melanoma (n=8)
2. Non-melanoma cancer (n=8)
3. Cataracts (n=3)
4. Stratospheric Ozone Depletion (n=4)
5. UVR Related Emergency Department Visits (n=2)
6. UVR Related Mortality (n=2)
7. Sunburns (n=5)
8. DNA Damage (n=3)
9. Immune suppression (n=5)
10. Skin cancer (n=3)
11. Skin Damage (n=2)
12. Aging (n=2)

The most commonly used datasets to investigate local ultraviolet radiation-related health impacts include:

1. IntelliHealth Ontario: Malignant melanoma (n=2)
2. Cancer Care Ontario: Ontario cancer registry (n=2)
3. Cancer Care Ontario: Rate of malignant melanoma (n=2)
4. Local Health Unit: Leading types of cancer (n=1)
5. Local Health Unit: Ultraviolet radiation (n=1)
6. Local Health Unit Surveillance and Monitoring Data: Melanoma (n=1)
7. Rapid Risk Factor Surveillance System: Protective behaviors (n=1)
8. Rapid Risk Factor Surveillance System: Proportion of residents who report having been sunburned (n=1)
9. Rapid Risk Factor Surveillance System: Protective behaviors (n=1)
10. IntelliHealth Ontario: Malignant melanoma mortality (n=1)
11. IntelliHealth Ontario: Ambulatory Emergency External Cause (n=1)
12. Canadian Community Health Survey: UVR health risks (n=1)
13. Canadian Community Health Survey: Percent of residents, by age-group, aged 12 and over who took steps to protect themselves from the sun (n=1)
14. Canadian Community Health Survey: Percent of residents aged 12 and over who took steps to protect themselves from the sun (n=1)
15. Cancer Care Ontario: Rate of non-epithelial skin cancers (n=1)
16. Public Health Ontario - Snapshots: Local Health Unit: Incidence and Mortality from Malignant Melanoma (n=1)
17. Not included (n=2)

The most commonly mentioned vulnerable populations include:

1. Children (n=6)
2. Outdoor workers (n=3)
3. Individuals who are fair-skinned (n=3)
4. Individuals with light eyes (blue or green) (n=3)
5. Individuals with blonde or red hair (n=3)
6. Individuals with a family history or genetic disposition to skin cancer (n=2)
7. People with lower levels of education (n=2)
8. People who participate in physical activity outdoors (n=2)
9. Those who do not practice sun-safety behaviour (n=2)
10. People with pre-existing health conditions (n=2)
11. People living in low-income households (n=2)

Under vulnerability to UVR impacts, people with pre-existing health conditions include people with chronic diseases, cognitive constraints, skin conditions, and autoimmune disorders.

2.8 Psychosocial Health

Climate change can exacerbate the risk of mental health conditions for vulnerable people in Canada through exposure to extreme weather events, and knowledge of climate change threats (Berry et al., 2022).

While 10 assessments discussed the psychosocial health impacts of extreme weather events, only two assessments discussed this impact in depth (with its own section within the report). The most commonly mentioned impacts include:

1. Anxiety (n=5)
2. Depression (n=5)
3. Trauma (n=5)
4. Solastalgia (n=3)
5. Stress (n=3)
6. Post-traumatic Stress Disorder (n=2)
7. Loss of Sense of Place (n=2)
8. Grief (n=2)
9. Anger (n=2)
10. Loss of Culture (n=2)
11. Substance Misuse (n=2)
12. Increased Rates of Hospitalizations (n=3)
13. Suicide (n=2)
14. Ecoanxiety (n=2)

The most commonly used datasets to investigate local psychosocial-related health impacts include:

1. IntelliHealth Ontario: Emergency department visit rates for Dementia and Alzheimers (n=1)
2. IntelliHealth Ontario: Emergency department visit rates for Depression (n=1)
3. Canadian Community Health Survey: Key mental health vulnerabilities (n=1)
4. Canadian Institute for Health Information: Ambulatory Emergency External Cause Database (n=1)
5. Not Included (n=8)
6. Unsure (n=2)

All mentioned vulnerable populations include:

1. Indigenous Peoples (n=4)
2. Children (n=3)
3. People with pre-existing health conditions (n=3)
4. Outdoor workers (n=2)
5. Older Adults (n=2)
6. People living in low-income households (n=2)
7. First responders (n=1)
8. People living in insecure housing (n=1)
9. Recent immigrants (n=1)
10. People living in areas prone to flooding (n=1)
11. People with low social connectedness to their community (n=1)
12. Mennonite communities (n=1)
13. Post-secondary students (n=1)
14. Middle-aged men (n=1)
15. 2SLGBTQIA (n=1)
16. People who were temporarily displaced from their homes and residing in evacuation centres (n=1)

Under vulnerability to psychosocial health impacts, people with pre-existing health conditions include people with mental health disorders, and people with pre-existing addictions.

3.0 Limitations, Existing Actions, Recommendations, and Next Steps

Health units discussed the limitations to their vulnerability assessments, with the most commonly mentioned limitations including:

1. Limitations in health data (n=8)
2. Limitations in climate projection data (n=7)
3. Limited understanding of the linkages between climate variables and health outcomes (n=6)
4. Limited local information to better understand vulnerabilities (n=6)
5. Limitations in primary data collection (n=4)

6. Limited information on adaptive capacity (n=3)
7. Limitations in scope (n=3)
8. Limitations in methods (n=3)
9. Covid-19 related limitations (n=3)
10. Limitations in timing (n=2)

Assessments also discussed the existing adaptive actions being taken both within and outside of the health unit. Activities within the health unit include:

1. Environmental monitoring of climate risks (n=10)
2. Health and disease surveillance related to climate risks (n=10)
3. Health promotion and education of issues relating to climate change (n=8)
4. Emergency preparedness and response planning (n=7)
5. Forecasting and early warning systems/alerts (n=6)
6. Regional plans which support climate change adaptation (n=6)
7. Population assessments (n=6)
8. Regional plans which support climate change mitigation (n=5)
9. Health protection activities (n=4)
10. Disease and Injury prevention (n=2)

Activities within the region but outside the health unit include:

1. Multi-jurisdictional outbreak surveillance (n=3)
2. Drinking water management (n=7)
3. Risk messaging and alerts (n=5)
4. Municipal heating and cooling areas (n=5)
5. Land use planning activities and building code policies (n=3)
6. Emergency preparedness and response (n=5)
7. Tree planning and urban forest strategies (n=3)
8. Regional/City plans relevant to climate change (n=6)
9. Environmental monitoring (n=4)
10. Education of issues relating to climate change (n=6)

Similarly, assessments discussed recommendations focused on both within and external to the health unit. Recommendations within the health unit include:

1. Consider health equity and vulnerable populations in planning (n=8)
2. Strengthen health and disease surveillance related to climate risks (n=7)
3. Strengthen engagement with key stakeholders (n=7)
4. Explore additional and new datasets related to climate risks and health outcomes (n=6)
5. Strengthen emergency preparedness (n=6)
6. Engage additional population subgroups and experts on climate change and health (n=5)
7. Strengthen environmental monitoring programs (n=5)
8. Mainstreaming climate change into public health policy (n=4)
9. Strengthen health promotion and education approaches (n=3)
10. Further assessments on vulnerability (n=3)

Recommendations external to the health unit include:

1. Cross-sector emergency management planning (n=6)
2. Strengthen community connection (n=6)
3. Explore effective built environment interventions (n=5)
4. Strengthen education on climate change impacts(n=3)
5. Review land use planning best practices (n=3)
6. Review available GIS datasets and maps to inform emergency response (n=2)
7. Tree planning and urban forest strategies (n=2)
8. Strengthen source water protection (n=2)
9. Strengthen knowledge sharing (n=2)
10. Develop new plans relevant to climate change (n=2)

Health units also discussed next steps following the results of the vulnerability assessments, which include:

1. Communicate results to stakeholders (n=6)
2. Develop a regional Climate Change Action Plan (n=5)
3. Integrate climate change considerations into existing public health programs and activities (n=5)
4. Continue to strengthen partnerships between the health unit and the community (n=5)
5. Focus on health benefits and co-harms of adaptation and mitigation options (n=4)
6. Develop policies and measures that support climate change mitigation and adaptation (n=4)
7. Fill knowledge gaps identified in the assessment (n=4)
8. Establish integrated and ongoing climate change and health surveillance (n=3)
9. Develop health promotion activities on climate change health impacts and adaptation measures (n=3)
10. Further investigate climate change related impacts on vulnerable populations (n=3)
11. Fill gaps in current climate change adaptation actions in the health unit (n=3)

Appendix E: External Advisory Committee Consultations

Reflections from local climate projections included concerns for both human health and ecological health impacts. Specific to the projection of milder winters, participants discussed the impacts of this on emerging vector species that normally would not survive cold winters (e.g., Culex, Japanese Beetle, etc.). Furthermore, there was expressed interest in focusing on ecological health, and not just human health; that is, taking a one health approach. Participants also discussed these projections from a farming perspective, where climate projections may be seen as a positive since there is speculation of opportunities for longer growing seasons hence potential for economic growth.

Reflections from the findings of the environmental scan revealed that participants were not surprised, but concerned of what these impacts may mean for SWPH. For example, Oxford County is reliant on groundwater, which may differ from other health units in Ontario for issues with water security and scarcity. Furthermore, participants expressed the importance of having input from representatives from local agricultural community members to discuss climate impacts.

Participants also discussed next steps in the SWPH vulnerability assessment process. First, there was mention of the importance of inviting Indigenous communities to contribute their viewpoints and knowledge on land stewardship. Participants expressed the importance of assessing vulnerability through an extreme weather and hazards lens, with an emphasis on the usefulness of GIS mapping in preparation and planning for the future.

Relevant data and documents suggested for review include information on the history of Indigenous Peoples and culture in SWPH, Conservation Authority strategic plan, Local municipal plans and policies, a list of environmental societies/groups in Future Oxford, and DMTI spatial resources.

Participants also discussed recommendations for the project, such as conducting a survey of green infrastructure to determine the resiliency of the region to climate change. Others also mentioned how it may be helpful to identify other places experiencing analog climates to the projected future climate states for Oxford, Elgin, and St. Thomas to see impacts on vulnerable populations currently. Overall, there was a strong and consistent focus on equity and addressing inequalities in vulnerabilities and resiliencies.

Vulnerable populations identified included:

1. Homeless populations and those living below the poverty line
2. The Amish communities
3. LGS Mennonite communities (tend to be more transitory with many families traveling back-and-forth between Canada and other areas such as Mexico, Belize, and Paraguay)
4. LGBTQ2S+ community
5. Indigenous communities

6. Outdoor workers (e.g., those working with aggregate who already have high exposure to harmful particles and effects of solar radiation, and agricultural workers where there is a prevalence of human trafficking)
7. Temporary foreign agricultural workers
8. Women, especially single-parent households.

Appendix F: Internal Advisory Committee Consultations

During the presentation, participants reflected on vector-borne illnesses within the SWPH region. Concerns emerged regarding difficulties with monitoring and measuring tick-borne illness, as some ticks are currently not reportable. Participants also discussed further detail on Lyme disease and WNV, including how WNV levels are dependent on the climate of a given year. For example, in summer of 2012, hot weather began in March and continued to get hotter, which created an environment ideal for mosquitos, causing issues for Ontario. However, there has been a steady growth of Lyme disease regardless of weather conditions.

Reflections on the local climate projections for SWPH included discussions on air quality and pollutants. Some participants discussed the economic impact of changing industries within SWPH region. Others also mentioned the importance of considering the location of air quality monitoring stations, with inquiries on the proximity of a monitoring station to accurately measure air quality. Participants also discussed concerns regarding how the current monitoring stations (Kitchener and Port Stanley) may not capture air quality in the 401 corridor. Furthermore, automotive manufacturing is growing in SWPH, which may impact air quality. Recently, air quality has been a concern for residents in SWPH due to visual cues from the Canadian wildfires; this may be useful in motivating people to care about climate change and health.

There were discussions on the importance of including psychosocial health in vulnerability assessments. As noted in the findings section on the scan of existing vulnerability assessments, the inclusion of psychosocial health as an independent climate health impact was limited to assessments conducted after 2022, with all previous assessments incorporating psychosocial health within other sections.

This group also identified aspects of the SWPH region which make it unique, underscoring areas of focus for the vulnerability assessment:

- There is a substantial population of international agricultural workers. These immigrant farm workers are mostly male, work outdoors, and are reliant on their employers, making them a vulnerable population. With thousands of immigrant workers, there are only about 200 premises for accommodations.
- There are LGS Mennonite and Amish communities in SWPH. The needs of these communities differ and have changed over time (e.g., before COVID-19 and after), the first step to addressing their needs should be to start at the community outreach level to understand their reality. LGS Mennonite and Amish communities used to mainly work in agriculture (about 20 years ago), however, with the increase in land prices, other industries such as carpentry, construction, and saw mills are growing. Furthermore, the LGS Mennonite communities within the region are more transient, but this is dependent on many factors. To investigate this, Statistics Canada census data on immigration can be useful to see the percentage of immigrants, where they are coming from, and what language they speak. Regarding healthcare access, the LGS Mennonite community in SWPH are unique to the individual. It is reported that there are no ‘Old Order’ Mennonite communities in SWPH.

- There are Indigenous communities in SWPH, with 2.3% identified in the census data. However, two major reserves declined to participate, so there are likely more individuals who identify as Indigenous within the region. There was a better connection to Indigenous communities in Elgin County when compared to Oxford County, but with the merging of health units, some of those connections have been lost.
- The top employment sectors are manufacturing, social and health care, retail, transportation, and construction. Agriculture only employs 6% of people but people who work on family farms and seasonal workers may not be included in this statistic.
- There are unique vulnerable populations in SWPH which may not have been identified by other health units in Ontario (e.g., older adults, those in insecure housing, low-income individuals). Geographically, urban areas are more prone to mosquitoes, rural areas are more prone to ticks, areas close to the Great Lakes are more prone to flooding, and beaches are more prone to E. coli (beaches in SWPH needed to be closed due to high E. coli levels). There is also a rising homeless population with growing encampments which tend to be in close proximity to Highway 401 or rivers.
- There are also unique factors to consider relevant to rising land prices in SWPH. First, inter-provincial immigration is a big factor for competitive housing (e.g., people from Toronto moving to the region), with Tillsonburg and Woodstock projected as top regions for projected population growth in 2016 and 2021. In Tillsonburg, shelter interventions were recently introduced to accommodate for the opioid crisis and inter-provincial immigration. Further economic changes may also affect land prices, with Toyota present in SWPH, and Volkswagen to come.

Participants were then invited to discuss the priorities of SWPH, with the key topic of discussion centered on health equity. Oxford County has previously conducted a survey of wellbeing (summarized in Section 1.2.2) which offers good baseline data. The County will be redoing this survey with a focus on community vitality and how that can promote community engagement.

When participants were asked to discuss local priorities in the context of health impacts of climate change, there was no question that (health) equity was the foundation of the responses. Participants discussed adaptation actions related to “leveling the playing field.” For example, universal basic income, and food and housing security. Additionally, communal recreation areas should be free to use to promote wellbeing.

Lastly, participants reflected on whether the community in SWPH is aware of climate change as an issue, and its potential health impacts. Participants discussed how the community is likely unaware of climate change-related concerns, but the topic of climate change is difficult to ignore due to news coverage. People know that climate change is happening, but it is difficult to get them to care unless the risks are immediate and personally relevant.

Overall, the vulnerable populations which were discussed by the participants include:

- People experiencing homelessness (encampments locations)
- Those below the poverty line
- Amish/LGS Mennonite Communities
- Males

- Immigrants
- Outdoor Farm Workers
- Indigenous populations
- Older adults

MOH REPORT

Open Session

MEETING DATE:	May 23, 2024
SUBMITTED BY:	Dr. Ninh Tran, Medical Officer of Health (written as of May 1, 2024)
SUBMITTED TO:	Board of Health
PURPOSE:	☐ Decision ☐ Discussion ☒ Receive and File
AGENDA ITEM #	5.2
RESOLUTION #	2024-BOH-0523-5.2

1.0. ONTARIO HEALTH TEAMS (OHTs)

Ontario Health Teams (OHTs) are a new model of healthcare delivery and organization that is more linked to patients in their local areas. There are 58 Ontario Health Teams throughout the province that cover the whole population to ensure that every person in Ontario can access an OHT. The aim is to make sure that everyone in Ontario can experience better coordinated, more integrated care.

Under the OHT model, health care providers (including hospitals, doctors, and home and community care providers) work as one coordinated team – no matter where they provide care. Providers and organizations eligible to become an Ontario Health Team include, but are not limited to, those that provide:

- Primary care (including inter-professional primary care and physicians)
- Acute care (such as in-patient and ambulatory medical and surgical services, including specialist services)
- Home care
- Community support services
- Mental health and addictions services
- Health promotion and disease prevention services
- Rehabilitation and complex care
- Palliative care (such as hospice)

- Residential care and short-term transitional care (such as supportive housing, long-term care homes, or retirement homes)
- Emergency health services
- Laboratory and diagnostic services
- Midwifery services
- Other social and community services and other services, as needed by the population

For the Southwestern Public Health (SWPH) region, we work with the Oxford OHT and Elgin OHT, recognizing each organization's unique set of initiatives and objectives.

1.1 OXFORD ONTARIO HEALTH TEAM

Strategic Priorities:

1) Integrated care through (population health management) PHM and equity approaches (remote care monitoring; Hypercare; palliative care).
2) Patient navigation and digital access (establish navigator community of practice; improving central intake; connect my health, expand online appointment booking).
3) Collaborative leadership, decision-making and governance.
4) Primary care engagement and leadership.
5) Covid-19 recovery and response (fall/winter response; cervical cancer screening).

Officially approved in November 2020 with a goal to deliver a coordinated patient experience to the Oxford County Community, the Oxford OHT involves local health professionals, organizations and community members working together to create a system where patients will have access to the right care, right team, and right care setting when they need it. It is a collaborative of 25 partner organizations serving a population of approximately 121,000 with 72% living in Oxford County, 4.4% living in Middlesex London, 4% living in Elgin County, and 8.6 % living in Norfolk County (the remainder are people living across the province who still have primary care or receive most of their care in Oxford County). OHT strategic priorities include chronic diseases, palliative approach to care, and mental health and addictions.

SWPH's upstream work has intersected with the Oxford OHT on recent key initiatives such as:

1) SWPH partnered with the Oxford OHT Operations Team to be a co-placement for Master of Public Health (MPH) Students. The MPH students collected program information in Oxford County to support better navigation and understanding of the healthcare services offered in Oxford, as a result of the Oxford Mental Health and Addictions Action Coalition. MPH students also led the planning and engagement for ConnectMyHealth, a free patient portal where residents in the community can access and view their own health records. The students also planned 27 information booths across Oxford County, resulting in 994 interactions with residents, the distribution of over 1800 pieces of information materials, supported 43 in-person registrations, and saw an increase of over 300 registrations overall.
2) SWPH partnered with the Oxford OHT to increase cervical cancer screening rates locally, as rates are currently under the provincial target. We collaborated on a social media campaign in January 2024 to increase bookings for open cervical screening appointments through SWPH's Sexual Health Clinic. Overall, we have seen 2.75x increase in bookings over the first quarter of this year (Jan – March 2024) compared to last year over the same time period. SWPH also partnered with Community Support Services to have available transportation for those who need it at a lower cost.

3) The Oxford OHT onboarded SWPH to Online Appointment Booking to allow our community to book sexual health clinic appointments online, effectively increasing patient choice and ability to book at a time that is convenient for them.

1.2 ELGIN ONTARIO HEALTH TEAM

Strategic Priorities:

1) Improve care for everyone in our community, starting with those with chronic obstructive pulmonary disease (COPD), i.e., connect to services and supports, simplify the care journey, etc.
2) Help people access services in the community, no matter who or where they are (i.e., primary care; mental health, substance use health, addictions).
3) Strengthen our ability to work together as one team (i.e., engagement, governance, learning).

Officially approved in September 2021, the Elgin OHT is a collaborative of 18 signatory member organizations with an additional 4 affiliate member organizations. It serves a population of more than 90,000 but an attributed population of approximately 69,000 (determined first by attachment to primary care followed by hospital visits).

The Elgin OHT has targeted COPD as a key priority in the region because of higher rates of smoking, hospitalizations related to COPD, and mortality related to COPD compared to the provincial average. Additional strategic priorities are mental health and addictions, Low German speaking community, and urban and rural Indigenous populations. Elgin is the 5th ranked OHT for the highest rates of material deprivation based on the following components:

- Proportion of the population aged 25 to 64 without a high-school diploma
- Proportion of families who are lone parent families
- Proportion of total income from government transfer payments for population aged 15+
- Proportion of the population aged 15+ who are unemployed
- Proportion of the population considered low-income
- Proportion of households living in dwellings that are in need of major repair

SWPH's upstream work has intersected with the Elgin OHT on recent key initiatives such as:

1) Engaging the Planet Youth model with community organizations to promote a prevention strategy for youth substance use.
2) Low German Community of Practice that provides valuable assistance for interacting with community members who speak Low German. SWPH works together with other community organizations to improve interpretation and transportation services for the Low German speaking community.
3) Actively working with Elgin Community Drug and Alcohol Strategy (ECDAS) coordinators to explore opportunities for alignment of committees and networks focused on mental health and addictions in Elgin, building a foundation for mental health and addictions coordinated access.
4) SWPH is a valued representative on the Elgin OHT Communications and Engagement subcommittee.
5) SWPH is a critical part of Incident Management response.

As outlined above, SWPH is and will remain an engaged participant in both Oxford and Elgin OHTs, contributing at steering and leadership committee levels, as well as operationally by supporting and leading specific initiatives. We will continue to seek avenues to offer public health insights and expertise, actively participating, advocating, and fostering collaborations whenever and wherever synergies arise.

MOTION: 2024-BOH-0523-5.2
That the Board of Health for Southwestern Public Health accept the Medical Officer of Health's Report for May 23, 2024.

CEO REPORT

Open Session

MEETING DATE:	May 23, 2024
SUBMITTED BY:	Cynthia St. John, Chief Executive Officer (written as of May 16, 2024)
SUBMITTED TO:	Board of Health
PURPOSE:	☐ Decision ☐ Discussion ☒ Receive and File
AGENDA ITEM #	5.3
RESOLUTION #	**2024-BOH-0523-5.3**

1.0 PROGRAM UPDATES (RECEIVE AND FILE):

1.1 EMERGENCY PREPAREDNESS AND RESPONSE PROGRAM

In early spring, Southwestern Public Health (SWPH) participated in a two-day Social Services Emergency Management Exercise hosted by Elgin County. The focus of the event was to cultivate essential skills for assisting affected residents during disasters. Attendees were able to construct a temporary evacuation center and role-play scenarios inspired by past incidents.

Emergency Preparedness Week took place May 5-11, 2024. This year's provincial theme was "Plan for Every Season," which focused on seasonal and climate influenced events, such as flooding, extreme heat and wildfires. Highlights of events from that week include:

- **The Practiced Ontario: Exercise Heatwave:** The event took place May 7-9 and was part of the province's multi-year exercise program. Exercise Heatwave engaged in provincial and multi-agency responses to heat related emergencies including participation from public health units. SWPH participated as an observer with ample opportunity to confer with exercise directors and the Provincial Emergency Operations Centre (PEOC) to address issues around communications, coordination between agencies, and care for marginalized and vulnerable populations.
- **Woodstock Emergency Preparedness Expo:** On Saturday, May 11 at 645 Dundas St. (the Foodland Plaza parking lot) SWPH and emergency planning and response representatives from community agencies were on hand to provide information and answer questions from the public regarding emergency preparedness. Although the weather was inclement, it was estimated that over two hundred residents participated in the event.

1.2 VACCINE PREVENTABLE DISEASE

The Vaccine Preventable Diseases (VPD) team wrapped up another successful round of Grade 7 clinics (with catch-up opportunities for Grade 8s) in early May. In total this school year, 124 school clinics were offered with over 3100 doses of both Hepatitis B vaccine and Human Papilloma virus (HPV) vaccine given (2-dose series), and almost 2000 doses of Meningococcal disease vaccine given in schools. These totals represent true collaborative efforts between SWPH and the three school boards we partner with. At each school, we are provided with a space large enough to safely administer vaccines, communication support, co-ordination, and collection of parental consents. This work embodies an upstream health approach where prevention of disease is the focus and is delivered in a health equity-considering fashion that allows vaccination in an accessible location by professionals who bring the services right to them. We know this delivery aids in universal access for all students in schools and prevents barriers such as lack of transportation, challenges with timely access to health care providers, prevents the need for parents to take time off work, and more.

SWPH is currently exploring opportunities to support newcomers with vaccination and vaccination reporting through connections with the YWCA of St. Thomas-Elgin and with Oxford's Local Immigration Partnership. As identified during our 2023-2024 record reviews, many newcomers identify challenges reporting vaccinations to public health when receiving notices of outstanding issues. These issues may stem from missing records or gaps in vaccinations received in other countries. Our team works with these families to support with translation, updating of records, and updating vaccinations where needed. Our goal with our partners is to identify these issues early to avoid time crunches when completing record reviews under the Immunization of School Pupils Act (ISPA) but also to provide vaccinations to better protect from diseases of public health significance.

An example of this is the Ministry of Health direction to review all student records who received an oral polio vaccine in childhood and to provide a new, complete series of inactivated polio vaccine

(IPV) using an age-appropriate schedule. This will impact school-age children as well as those attending licensed childcares in our region, as outlined by the Childcare and Early Years Act (CCEYA).

1.3 COVID-19 RESPONSE

The spring 2024 Covid-19 campaign, slated to run from April to June, targets specific demographics including adults aged 65 and older, residents of long-term care homes and other communal living arrangements for seniors, moderately to severely immunocompromised individuals of all ages, and individuals aged 55 and above who identify as First Nations, Inuit, or Metis, along with their non-Indigenous household members of the same age bracket. SWPH will continue to prioritize support for congregate living settings, particularly Long-Term Care Homes/Retirement Homes (LTCH/RHs), during this season. While SWPH continues to administer half-day clinics monthly for children aged 11 and younger, individuals outside this age group are directed to pharmacy partners for vaccination services.

1.4 HEALTHY ENVIRONMENTS

In May, designated as Rabies Awareness Month, the Environmental Health (EH) team has been actively engaged in a public educational campaign to raise local awareness about the importance of rabies prevention and public health's role in reducing risks and managing cases. To date, there have been 199 animal investigations within the rabies program this year.

With the imminent arrival of beach water season, the team is proactively coordinating with our Communications Team to disseminate preparatory messages, spurred by heightened public interest following the 2023 season. The team is currently awaiting the forthcoming release of Ministry guidance documents pertaining to the 2024 Wildfire Season to inform its readiness and response strategies.

2.0 ASSOCIATION OF LOCAL PUBLIC HEALTH AGENCIES (ALPHA) ANNUAL MEETING (RECEIVE AND FILE):

In June, Dr. Tran, Chair B. Martin, and I will be attending the alPHa 2024 Annual General meeting held in Toronto. As members of this Association, SWPH carries five (5) votes in total that may be cast for annual meeting business. As part of the agenda, alPHa's Resolutions for Consideration 2024 will be presented for attention and approval by the attendees. Dr. Tran and I have reviewed the resolutions and we are supportive of all of them , particularly as two of them come from SWPH and will be presented by our Program Director, Peter Heywood.

- ***Resolution #A24-01: Permitting Applications for Automatic Prohibition Orders under the Smoke Free Ontario Act, 2017 for Vapour Product Sales Offences***
  The proposal put forth by the Middlesex-London Health Unit aims to address concerns regarding the sale of vapour products, particularly to minors, under the Smoke-Free Ontario Act, 2017. Despite the existence of age-restricted specialty vape stores, a significant number of retail outlets, including convenience stores and gas stations, sell these products, potentially exposing vulnerable individuals to them. In 2023 alone, numerous charges were issued against retailers for selling to underage individuals and for violating regulations on flavoured e-cigarettes and nicotine content. However, current legislation only allows

automatic prohibition orders for tobacco product sales convictions, failing to encompass vapour product sales. Therefore, the resolution urges the Ministry of Health and the Government of Ontario to permit public health agencies to apply for such orders for vapour product sales convictions and advises local Boards of Health to advocate for an amendment to the Smoke-Free Ontario Act, 2017 to include these convictions. This initiative seeks to prevent unauthorized sales and mitigate youth vaping issues.

- ***Resolution #A24-02: Artificial Intelligence for Enhanced Public Health Outcomes***
  The proposal sponsored by the Simcoe Muskoka District Health Unit and Wellington-Dufferin-Guelph Health Unit advocates for the integration of artificial intelligence (AI) into public health practices to enhance disease surveillance, health promotion, protection, and service delivery. Recognizing AI's potential in analyzing vast datasets for quicker and more accurate identification of public health trends and outbreaks, the resolution stresses the importance of ethical considerations such as data privacy and bias. It highlights the necessity for public health professionals to acquire AI knowledge and skills and calls for collaboration between health agencies, tech experts, and policymakers. Emphasizing the role of AI in addressing health disparities and promoting equity, the resolution urges increased investment in AI research and training programs. Lastly, it calls upon the Association of Local Public Health Agencies to communicate these recommendations to the Ontario Minister of Health, emphasizing the transformative potential of AI in improving health outcomes and service delivery.
- ***Resolution #A24-03: A Proposal for a Comprehensive Provincial Alcohol Strategy: Enhancing Public Health through Prevention, Education, Regulation and Treatment***
  The proposal presented by the Oxford-Elgin-St. Thomas Board of Health, operating as Southwestern Public Health, advocates for a comprehensive provincial alcohol strategy to address the significant public health challenges associated with alcohol consumption in Ontario. Highlighting the alarming statistics of alcohol-related deaths, hospitalizations, and emergency visits, the proposal emphasizes the disproportionate burden of alcohol harms on individuals with low socioeconomic status. Furthermore, it underscores the carcinogenic nature of alcohol and its role as the most frequently reported substance of concern among those accessing treatment services. The proposal expresses concerns regarding the potential exacerbation of alcohol-related problems with government plans to increase alcohol availability. Despite government commitments to fund social responsibility and public health efforts, the proposal stresses the need for comprehensive and enforced alcohol control policies to mitigate the societal costs of alcohol. It calls attention to outdated advertising standards and previous resolutions advocating for stricter advertising standards, public education campaigns, and increased control over alcohol availability. The proposal emphasizes the urgency of prioritizing these resolutions to develop and implement an effective provincial alcohol strategy.
- ***Resolution #A24-04: Reviewing Provincial Regulatory Needs for Supportive Living Facilities Serving Vulnerable Individuals***
  The proposal sponsored by the Oxford-Elgin-St. Thomas Board of Health, operating as Southwestern Public Health, addresses the need for provincial regulation of supportive living facilities catering to vulnerable individuals in Ontario. Highlighting concerns over the

lack of registration, inspection, and adherence to standards in unregulated and quasi-regulated facilities, the proposal emphasizes the risks to residents' safety, health, and well-being. It calls for the review of provincial regulatory needs to ensure transparency, communication, and accountability in these facilities, advocating for provincially enforced standards and penalties for bad actors. The proposal also stresses the importance of consulting with municipalities and enhancing public reporting mechanisms for health and safety issues.

- ***Resolution #A24-05: Early Childhood Food Insecurity: An Emerging Public Health Problem Requiring Urgent Action***
  The proposal, sponsored by Ontario Dietitians in Public Health, stresses the urgent need for provincial action to address early childhood food insecurity, particularly for children aged 0-24 months. It highlights previous advocacy efforts by alPHa and the significant impact of food insecurity on infant and child health, including growth faltering and cognitive impairments. The resolution calls for specific measures to support vulnerable families, such as increasing the Pregnancy and Breastfeeding Nutritional Allowance and the Special Diet Allowance for families on social assistance programs, as well as expanding the Ontario Drug Benefit to include specialized infant formulas for children with medical needs. Additionally, it emphasizes continued advocacy for income-related policies to alleviate household food insecurity, especially for families with children. This call to action aims to optimize early growth and development among families affected by food insecurity and health inequities.
- ***Resolution #A24-06: Compliance with Ontario Not-for-Profit Corporations Act (ONCA): Proposed 2024 alPHa General Operating By-Law to replace The Constitution of the Association of Local Public Health Agencies (Ontario)***
  The proposal, sponsored by the alPHa Board of Directors, highlights the necessity of aligning with the Ontario Not-for-Profit Corporations Act (ONCA), which replaced the previous Corporations Act in October 2021. It emphasizes the importance of ensuring compliance with ONCA's regulations to enhance governance, accountability, and overall operations of alPHa as a not-for-profit organization in Ontario. alPHa has drafted a General Operating By-Law, in consultation with legal counsel, to ensure ONCA compliance while maintaining key elements of its current Constitution. The resolution urges the adoption and approval of this new by-law, which will replace the current Constitution effective October 18, 2024, pending ratification by alPHa's membership through a majority vote at a general meeting.

3.0 FINANCIAL MATTERS (DECISION):

3.1 FIRST QUARTER FINANCIAL STATEMENTS (DECISION):

At the end of quarter one, March 31, 2024, Southwestern Public Health is currently underspent by approximately $980k or 20% of the general program budget. The majority of the variances are due to the timing of program plans, as many program plans are not implemented until after the first quarter. All program expenses and variances are reviewed monthly. At the end of March, it is anticipated that all budgeted funds will be spent by year end.

MOTION: 2024-BOH-0523-5.3-3.1
That the Board of Health to approve the first quarter financial statements for Southwestern Public Health.

3.2 MINISTRY SETTLEMENT FORMS (DECISION):

The Public Health Funding and Accountability Agreement requires that the Program-Based Grants Annual Reconciliation Report be submitted to the Ministry annually. The 2023 report has been prepared by SWPH's auditors, Grahams Scott Enns, and reviewed by myself and Monica Nusink. The report is a summary of the audited financial statements and has been signed by the Chief Executive Officer and the Board of Health Chair. The report was submitted to the Ministry of Health on behalf of the Board on April 30th.

MOTION: 2024-BOH-0523-5.3-3.2
That the Board of Health for Southwestern Public Health ratifying the signing of the 2023 program-based grants annual reconciliation report and accompanying letters.

3.3 2023 FINANCIAL STATEMENTS SURPLUS (DECISION):

Our 2023 audited statements note we have a $255,500 surplus. This occurred as a result of the additional Board of Health priorities that were approved at the June 22, 2023 Board meeting and initiated in the fall of 2023 but not fully expensed by the end of the year. These monies were flowed directly from our municipal funders, not our provincial funding partners. As such, these monies can either a) be returned to our funding municipalities or b) be placed into the SWPH Board of Health reserve fund to assist with 2025 budget priorities.

MOTION: 2024-BOH-0523-5.3-3.3
That the Board of Health for Southwestern Public Health direct staff to either: a) return the 2023 municipal surplus dollars to its obligated municipalities or b) invest the 2023 surplus dollars into the SWPH Board of Health Reserve Fund.

4.0 FACILITIES UPDATES (RECEIVE AND FILE):

4.1 ST. THOMAS SITE:

SWPH is pleased to be assisting several organizations with their space needs. When the Thames Valley Children's Center (TVCC) was required to vacate their offices quickly, SWPH assisted by sharing our meeting rooms, allowing their organization to keep their Early Years and Entry to School Classroom programs running. The West Elgin Community Health Centre (WECHC) will be utilizing space in clinical services offering primary care programs and services related to the Pediatric Outreach Program to residents of Elgin St. Thomas. SWPH staff are collaborating with WECHC to ensure any public health needs for their clients are considered while on site.

As noted in November 2023, the controller utilizing the software that grants access to the interior and exterior doors was replaced in October. To further improve the security of the premises and IT infrastructure, card readers were added to the classroom doors. However, to program the doors in the software, an expansion of the new controller was required. This was an oversight from the vendor that was not budgeted for 2024.

The internet service costs for 1230 Talbot Street will rise by approximately $625.00 per month starting in June 2024. This unexpected rate hike was not accounted for in the 2024 budget. Additionally, the wireless failover system will be discontinued, transitioning to a new service provider, while the historically low rate for our fiber connection will increase to match market value.

A fault code on the thermostats on the west side of the second-floor offices prompted a service call to SWPH HVAC contractor. It was determined that HPAC 2 has a defective inverter compressor. The compressor along with inverter board, oil return valve and stainer will require replacement. These components are covered under warranty, however, labour costs, and testing costs are approximately $8100.00. SWPH includes costs for these situations in its services and repairs budget due to the historical issues with compressor failures.

Regarding building maintenance, a leak was noted in the ceiling of the southwest office. The flashing and bitumen roofing membrane were repaired, but the leak continues. A flood test, moisture probes, and water detection equipment were utilized to further detect moisture; however, no issues have been identified. While investigating this leak, the contractor discovered a significant gap between the membrane and underside of flashing along a bank of windows situated on roof in a different area of the leak. It was recommended that the membrane be extended up and over the underside of the flashing and a quote was requested.

The contractor also recommends replacing the supports under the patio stones on the roof with Styrofoam (the exiting bases are spiked and can penetrate the membrane). This work should be done as a preventative measure. A quote for replacing the bases of the stones has been requested. Atlas-Apex Roofing has been responsive, thorough, informative, and fair as they have covered the costs of several tests in trying to determine the source of the leaks. SWPH is confident in the services being provided.

4.2 WOODSTOCK SITE:

The west parking lot at the Buller location will be paved on May 2nd and exterior window cleaning is scheduled for mid-May as well. Oxford County will be replacing the carpeting in the offices on the lower level of the Graham Street location. This work is scheduled to take place in mid-May although the initial plan for this work was to be accounted for in the County's 2025 budget. However, the carpet has stretched and buckled, and, in some spots, there are holes in the carpet, consequently creating tripping hazards.

MOTION: 2024-BOH-0523-5.3
That the Board of Health for Southwestern Public Health accept the Chief Executive Officer's Report for May 23, 2024.

To:	Chairs and Members of Boards of Health Medical Officers of Health and Associate Medical Officers of Health alPHa Board of Directors Presidents of Affiliate Organizations
From:	Loretta Ryan, Executive Director
Subject:	***alPHa Resolutions for Consideration at the June 6, 2024 Annual General Meeting***
Date:	May 6, 2024

Please find enclosed a package of the resolutions to be considered at the Resolutions Session taking place following the 2024 Annual General Meeting (AGM) and important information on voting procedures.

Six resolutions were received prior to this year's deadlines, and these have been reviewed by the alPHa Executive Committee on April 26 and recommended to go forward for discussion at the Resolutions Session.

NOTE ON LATE RESOLUTIONS:

Late resolutions are not reviewed by the Executive Committee and are subject to additional procedures for consideration of late resolutions. Please note that any late resolutions received by alPHa will be added to the online version of the attached Resolutions for Consideration document as they come in to allow for review in advance.

Late resolutions will only be debated at the AGM if time allows and if delegates agree to consider these by a two-thirds majority vote. Please be reminded that such resolutions are otherwise subject to the same criteria as all other submitted resolutions, including the requirement that it be sponsored by a recognized alPHa Committee and not an individual acting alone. Please see the "Procedural Guidelines for alPHa Resolutions" for more details.

IMPORTANT NOTE FOR VOTING DELEGATES:

Members **must register** to vote at the Resolutions Session by filling out the attached registration form, wherein member Health Units must indicate who they are designating as voting delegates and which delegates will require a proxy vote.

Eligible voting delegates include Medical Officers of Health, Associate Medical Officers of Health, Acting Medical Officers of Health, members of a Board of Health and senior members in any of alPHa's Affiliate

Member Organizations. Each delegate will be voting on behalf of their health unit and only one proxy vote is allowed per person, up to the maximum total allocated per health unit. (Please see the attached voter registration document that is in word format.)

The completed registration form must be received by Melanie Dziengo (communications@alphaweb.org) no later than 4:30 pm on May 31, 2024.

If you have any questions on the above, please contact Loretta Ryan, Executive Director, loretta@alphaweb.org / 416-595-0006, x 222.

Enclosures:
Resolutions Voting Registration Form
Number of Resolutions Votes Allocated per Health Unit
2024 Resolutions for Consideration

PO Box 73510, RPO Wychwood
Toronto, Ontario M6C 4A7
E-mail: info@alphaweb.org

2024 alPHa Annual General Meeting
Resolutions Session
REGISTRATION FORM FOR VOTING

Health Unit _____

Contact Person & Title _____

Phone Number & E-mail _____

Name(s) of Voting Delegate(s):

Name and email address	**Proxy*** (Check this box if the person requires a proxy voting card. Only one proxy is allowed per delegate.)	**Is this person registered to attend the alPHa Annual Conference? (Y/N)**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

* Each voting delegate may carry their own vote plus one proxy vote for an absent delegate. For any health unit, the total number of regular plus proxy votes cannot exceed the total number of voting delegates allotted to that health unit.

Please email this form to Melanie Dziengo (communications@alphaweb.org) by 4:30 pm on Friday, May 31, 2024.

alPHa
Association of Local PUBLIC HEALTH Agencies

Allocation of Votes: alPHa Resolutions
Revised 2023

Health Unit	Population	Voting Delegates
TORONTO*	2,794,356	**20**
POPULATION 1,000,000 and OVER **		**8**
Ottawa	1,017,449	
Peel	1,451,022	
York	1,173,334	
POPULATION OVER 400,000		**7**
Durham	696,992	
Halton	596,637	
Hamilton	569,353	
Middlesex-London	500,563	
Niagara	477,941	
Simcoe-Muskoka	599,843	
Waterloo	587,165	
Windsor Essex***	422,860	
POPULATION 300,001 – 400,000		**6**
Wellington-Dufferin-Guelph	307,283	
POPULATION 200,000 – 300,000		**5**
Eastern Ontario	210,276	
Kingston, Frontenac, Lennox and Addington	206,962	
Southwestern***	216,533	
Sudbury***	202,431	
POPULATION UNDER 200,000		**4**
Algoma	112,764	
Brant	144,937	
Chatham-Kent	104,316	
Grey Bruce	174,301	
Haldimand-Norfolk	116,706	
Haliburton, Kawartha, Pine-Ridge	189,183	
Hastings-Prince Edward	171,450	
Huron Perth	142,931	
Lambton	128,154	
Leeds, Grenville and Lanark	179,830	
North Bay-Parry Sound	129,362	
Northwestern	77,338	
Peterborough	147,681	
Porcupine	81,188	
Renfrew	107,522	
Thunder Bay	152,885	
Timiskaming	32,394	

* total number of votes for Toronto endorsed by membership at 1998 Annual Conference
**new allocation category of population >1M endorsed by membership at 2023 Annual Conference
*** denotes health units that have moved into a different allocation category based on latest census data

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Health Unit population statistics taken from: Statistics Canada – 2021 Census Profiles – Sorted by Health Region

Resolutions for Consideration
2024

Resolutions Session
2024 Annual General Meeting
Thursday, June 6, 2024

alPHa RESOLUTION A24-01

TITLE: **Permitting Applications for Automatic Prohibition Orders under the *Smoke Free Ontario Act, 2017* for Vapour Product Sales Offences**

SPONSOR: **Middlesex-London Health Unit (MLHU)**

WHEREAS In Ontario, there are approximately 800 age-restricted specialty vape stores and 12,000 retail outlets that sell both commercial tobacco and vapour products; and

WHEREAS in Ontario, under the *Smoke-Free Ontario Act, 2017,* the sale of menthol, mint, and tobacco-flavoured e-cigarettes (vapour products) is permitted at convenience stores, gas stations, and any other retail environment where vulnerable individuals have access; and

WHEREAS in Ontario, the sale of menthol, mint, tobacco-flavoured, fruit, and candy-flavoured vapour products are permitted at age-restricted specialty vape stores; and

WHEREAS in 2023, approximately 414 charges were issued against retailers of vapour products in Ontario for selling a vapour product to a person under the age of 19 years of age; and

WHEREAS in 2023, approximately 182 charges were issued against retailers of vapour products in Ontario for selling flavoured e-cigarettes and/or selling vapour products with greater than 20 mg/ml nicotine, contrary to regulations under the *Smoke-Free Ontario Act, 2017*; and,

WHEREAS automatic prohibition orders under Section 22 of the *Smoke-Free Ontario Act, 2017* apply to tobacco product sales convictions only; and

WHEREAS the membership previously carried resolution A21-1 proposing provincial and federal policy measures to address youth vaping, several of which have not been implemented.

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies urge through the Ministry of Health to the Government of Ontario to include automatic prohibition order applications by public health for convictions related to vapour product retail sales to prevent unauthorized sales to the public;

AND FURTHER that the Association of Local Public Health Agencies advise all Ontario Boards of Health to recommend their local Members of Provincial Parliament to advocate for an amendment to Section 22 of the *Smoke Free Ontario Act, 2017* to include vapour product sales convictions for inclusion within automatic prohibition order applications.

Statement of Sponsor Commitment

The Middlesex-London Health Unit is discouraged by the level of non-compliance by vapour product retailers despite the provisions under the *Smoke-Free Ontario Act, 2017*. Regardless of the development of regulatory measures to reduce youth access and appeal of vapour products, the number of brick-and-mortar retailers in Ontario has increased significantly. Increased youth access to vapour products threatens to reverse what has been a downward trend in smoking rates and nicotine addiction within our youth and young adult populations.

The Middlesex-London Health Unit's Tobacco Enforcement Officers have been noting an increase in the number of warnings and charges being issued against vapour product retailers for sales to persons under the age of 19 years of age. Retailers that are prohibited from offering to sell candy and fruit-flavoured vapour products and e-cigarettes with nicotine concentrations greater than 20 mg/ml continue to do so, despite the deployment of progressive enforcement measures. It has become apparent that the issuance of fines and seizures of vapour products are an insufficient deterrent.

Under the *Smoke-free Ontario Act, 2017*, routine non-compliance with tobacco sales offences results in the issuance of an automatic prohibition order under Section 22. At present, a similar enforcement tool for routine non-compliance with regulatory measures for vapour products does not exist. An amendment to Section 22 of the *Smoke-Free Ontario Act, 2017* to include vapour product sales convictions for inclusion within automatic prohibition order applications is warranted to help reduce youth access to these highly addictive products.

Dr. Alex Summers, Medical Officer of Health for the Middlesex-London Health Unit, will be present at the 2024 Annual General Meeting to provide clarification on the proposed resolution.

Background

Under the *Smoke-Free Ontario Act, 2017* (*SFOA, 2017*), an Automatic Prohibition Order will be issued by the Ministry of Health, and served by the local public health unit, when there are two or more registered convictions within a five-year period against any owner for tobacco sales offences committed at the same location. Automatic Prohibition Orders can be based on registered convictions against multiple owners (past and present); that is, ownership of the business at that location may change but the convictions and the Automatic Prohibition Order stay with the address. The length of the prohibition on the sale and storage of tobacco at an address depends upon the number of convictions within a five-year period. Two convictions registered at the address within five years results in a six-month prohibition, three convictions registered at the address within a five-year period warrants a nine-month prohibition, and four convictions within a five-year period result in a twelve-month prohibition. While an Automatic Prohibition Order is in effect, wholesalers or distributors are prohibited from delivering tobacco products to that location.

Under Section 22 of the *SFOA, 2017*, only registered convictions for tobacco sales offences are eligible for inclusion in the application of an Automatic Prohibition Order. Examples of tobacco sales offences that can result in the issuance of an Automatic Prohibition Order include:

- The sale or supply of tobacco to someone under the age of 19 years.
- Failing to request identification from someone appearing to be less than 25 years of age.
- Selling tobacco without posting required age restriction and government identification signs.
- The sale of improperly packaged tobacco.
- The sale of tobacco in vending machines.
- The sale or storage of tobacco during an automatic prohibition.

- Selling unmarked or unstamped tobacco in violation of section 8 or 9 of the *Tobacco Tax Act.*

Vapour products can continue to be sold at a retailer even if they are under an Automatic Prohibition Order for violating either the *Smoke-Free Ontario Act, 2017* or the *Tobacco Tax Act.* Between 2011 and 2023, Middlesex-London Health Unit has served 25 Automatic Prohibition Orders**,** with 3 Orders in effect at the present time.[1]

The Changing Vapour Product Retail Landscape

Since the legalization of nicotine vapour products in Canada on May 23, 2018, under Canada's *Tobacco and Vaping Products Act,* the retail market landscape has undergone significant changes in Ontario. In the Middlesex-London jurisdiction, the number of retailers that sell vapour products has grown from 186 in 2018, to 253 in 2023. Provincially, it is estimated that there are there are approximately 800 age-restricted specialty vape stores and 12,000 retail outlets that sell both commercial tobacco and vapour products. This growth in community availability of vapour products is in alignment with the growth of the global e-cigarette market. In 2021, the global e-cigarette market was valued at approximately 20.4 billion US dollars, with projections to continue its rapid growth to 30 billion US dollars by 2027 (Business Wire, 2022).

Nicotine is highly addictive, and the negative effects on youth brain development (US Surgeon General, 2016) and growing evidence regarding cardiovascular and lung health harms associated with vapour product use is a significant public health concern (Buchanan et al., 2020; Davis et al., 2022; Keith and Bhatnagar, 2021; Kennedy et al., 2019; Willis et al., 2020). To reduce youth access, it is illegal to sell or supply a vapour product to a person under the age of 19 years in Ontario under the *SFOA, 2017.* Additionally, only vapour products flavoured with mint, menthol, and tobacco can be sold in non-specialty vape stores (e.g., convenience stores, grocery stores, gas station kiosks, etc.); whereas, all flavoured vapour products, including candy- and fruit-flavoured products can be sold in age-restricted specialty vape stores. Under Canada's *Tobacco and Vaping Products Act,* the sale of vapour products with nicotine concentrations greater than 20 mg/ml is prohibited. Despite these health protective regulatory measures, public health units report significant retailer non-compliance.

[1] *The Smoke-Free Ontario Act* came into force on May 31, 2006. Although retailers were already selling tobacco products, convictions prior to this date were not applicable to APs which is why the date of 2011 is used (2006 + 5 years = 2011). Same applies for the *Smoke-Free Ontario Act, 2017* – it came into force on October 17, 2018, so any convictions prior to this date were not applicable to APs which is relative to the 3 APs that were issued in 2023 and are still active (2018 + 5 years = 2023).

Table 1
Retailer Non-Compliance as Reported by Ontario Public Health Units for 2023

# of charges issued to either a clerk OR an owner (e.g., sole proprietor, general limited partnership, or corporation) for the **supply or sale** of a vapour product to a **person under the age of 19 years of age**.	**414**[1]
# of charges issued to either a clerk OR an owner for the **supply or sale** of a vapour product to a person who **appears to be less than 25 years of age without requesting government ID**	**54**[1]
# of charges issued for **selling or offering to sell flavoured e-cigarettes in a prohibited place** (e.g., fruit or candy flavoured vaping products in a non-specialty vape store) and/or **selling or offering to sell** vapour products with **greater than 20 mg/ml nicotine**	**182**[1]
# of vapour product seizures	**474**[2]

[1] These numbers are an underrepresentation of non-compliance. Many Health Units reported that due to the COVID-19 pandemic response and staff redeployments between 2020 and 2022, enforcement programs were not fully functional until 2023. In 2023, the emphasis was on education, the issuing of warnings (versus charges), and re-inspections to gain compliance.
[2]This number is an underestimation of non-compliance. Some Health Units were unable to report due to insufficient time provided to collate local tracking data. Additionally, due to capacity challenges in 2023, some public health units relied on referrals to Health Canada for seizures.

Overall, compliance with vapour product provisions under the *SFOA, 2017* is decreasing. Operators have shared with Tobacco Enforcement Officers that the total revenue from sales of vapour products far exceeds both the fine amounts and the risk of product seizures and is viewed as a cost of doing business. Public Health Units also reported that in 2023, convenience store operators began to explore how to operate an age-restricted specialty vape store in conjunction with their convenience store, to expand the inventory of vapour products that they could legally sell. This change in the retail marketplace has the potential to further increase market availability of vapour products to youth. Based on current compliance rates and reported retailer behaviours, current vapour product regulations are insufficient.

Opportunity to Strengthen Controls to Reduce Youth Access and Increase Retailer Compliance

Rates of youth vaping are escalating at a concerning rate. According to the 2022 Canadian Tobacco and Nicotine Survey, 30% of youth aged 15 to 19 years and 48% of young adults aged 20 to 24 years reported having tried vaping in their lifetime (Statistics Canada, 2023). Reducing youth access to vaping products through the enforcement of age restriction legislation is an important public health measure. Current test shopping and inspection practices of Ontario public health unit staff are critical to promote and monitor retailer compliance; however, opportunity exists to strengthen controls at retail. As noted in the Middlesex-London Health Unit's 2022 submission to Health Canada to help inform the legislative review of Health Canada's *Tobacco and Vaping Products Act*, there is no automatic prohibition lever that can be applied to retailers who continue to sell vapour products to persons under the age of 19 years, nor for non-specialty vape stores that continue to sell vapour products that should only be available for sale in age-restricted stores in Ontario. Retailers are not held to the same level of accountability for non-compliance with the sections of the *SFOA,* 2017 that regulate the sale of vapour products.

Based on lessons learned from the enforcement of the regulations under the *SFOA, 2017* for commercial tobacco products, the Middlesex-London Health Unit recommends that the Ontario Government implements an automatic prohibition regime for vaping products that is modelled after Section 22, which would apply to repeated convictions against retailers who:

- Sell or supply vaping products to someone under the age of 19 years.
- Fail to request identification from someone appearing to be less than 25 years of age.

- Sell or offer to sell vapour products without posting required age restriction and government identification signs.
- Sell or offer to sell vaping products that are regulated by law in a prohibited place.
- Sell or offer to sell vaping products that are prohibited by law.
- Sell or store vapour products during an automatic prohibition.

By permitting public health units to apply to the Ministry of Health for an automatic prohibition order against a retailer who has committed either tobacco product and/or vapour product violations, retailers who are providing either of these products to vulnerable individuals will be prevented from doing so for a defined period of time depending upon the number of registered convictions on file for a location. Nicotine, whether in the form of a vaping product or a commercial tobacco product, is harmful for youth and young adults. Nicotine interferes with healthy brain development, which continues until the age of 25, and young people can become heavily addicted with lower levels of exposure than adults (US Surgeon General, 2016). It is important to hold retailers of these harmful products accountable when commercial tobacco and vaping products are being sold in contravention of the *Smoke-Free Ontario Act, 2017.*

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alPHa RESOLUTION A24-02

TITLE: **Artificial Intelligence for Enhanced Public Health Outcomes**

SPONSOR: **Simcoe Muskoka District Health Unit, Wellington-Dufferin-Guelph Health Unit**

WHEREAS artificial intelligence (AI) has the potential to revolutionize public health by improving disease surveillance, health promotion, health protection, and service delivery; and

WHEREAS AI-driven technologies can significantly aid in the analysis of large datasets, leading to more accurate and/or rapid identification of public health trends and outbreaks; and

WHEREAS the integration of AI in public health can enhance health promotion and health protection interventions; and

WHEREAS ethical considerations, including data privacy, bias, and transparency, are paramount in the deployment of AI technologies in public health; and

WHEREAS there is a growing need for public health professionals to be equipped with knowledge and skills in AI to effectively utilize these technologies; and

WHEREAS collaboration between local public health agencies, technology experts, and policymakers is essential for the responsible and effective implementation of AI in public health; and

WHEREAS there is an opportunity to leverage AI for addressing health disparities and promoting health equity across different populations; and

WHEREAS a proactive approach would position public health agencies as beneficiaries of the technological evolution and as contributors to the ethical and impactful use of AI in improving public health and wellbeing;

NOW THEREFORE BE IT RESOLVED that that the Association of Local Public Health Agencies write to the Ontario Minister of Health to provide background information on the transformational possibilities of AI tools in the future delivery of Public Health programs and services;

AND FURTHER that alPHa call for increased academic investment in data stewardship, AI research, training, and development focused on public health applications and post-secondary educational programs through the Ontario Minister of Colleges and Universities;

AND FURTHER that alPHa acknowledge the transformative potential of AI and other emerging technologies as pivotal tools for the future across all sectors of industry and society, and support public health agencies in carefully leveraging these tools to enhance health outcomes, improve service delivery, and increase operational efficiency;

AND FURTHER that a copy of this resolution be sent to the President and Chief Executive Officer of Public Health Ontario and to the Chief Medical Officer of Health of Ontario.

BACKGROUND:

Introduction

The integration of AI and emerging technologies marks a transformative shift in the landscape of public health. These innovations offer new methods for tackling complex health challenges, enhancing patient care, and improving the delivery of health services. For Ontario's Local Public Health Agencies (LPHAs), adopting AI and related technologies is crucial to meet the evolving needs of public health effectively.

Defining AI and Emerging Technologies

AI refers to the use of technology to perform tasks that otherwise require human-level intelligence to complete[1, 2]. AI has shown effectiveness at an increasingly broad range of tasks, including pattern recognition, decision-making[3], and language understanding[1]. Emerging technologies encompass a broad range of innovative tools and systems, including blockchain, the Internet of Things (IoT), and advanced computing, which are on the cusp of becoming mainstream. These technologies offer new capabilities that can significantly impact various sectors, including public health, by enhancing data analysis, connectivity, and operational efficiency.

AI and Emerging Technologies: Revolutionizing Public Health

AI and emerging technologies are transforming public health through applications in predictive analytics, health equity enhancement[4], and the development of digital health services[5]. These tools offer unprecedented opportunities for disease surveillance[6], optimizing health interventions[7], and providing more personalized care[3,8,9,10].

Predictive Analytics

AI-driven models can sift through vast datasets to predict health trends and potential outbreaks, enabling LPHAs to allocate resources more effectively and prepare for public health emergencies[11]. This predictive capability is critical for planning and emergency response, enhancing the public health system's ability to mitigate threats.

Health Equity

AI can play a pivotal role in identifying and addressing health disparities by analyzing patterns in health outcomes and access to care. By leveraging AI, LPHAs can design targeted interventions to meet the unique needs of underserved populations, thereby promoting equity across different communities[12].

Digital Health Innovations

Advancements in technology have accelerated the adoption of telehealth and digital health platforms, offering new modes of healthcare delivery. AI enhances these services by improving accuracy, enabling real-time patient monitoring, and tailoring treatment plans[3], thus making healthcare more accessible and efficient[8].

Building Capacity for Technological Adoption

To fully benefit from AI and emerging technologies, LPHAs need to invest in digital infrastructure and upskill their workforce. This involves adopting digital tools and training healthcare professionals to use these technologies effectively, ensuring public health units are well-equipped to face future challenges[6, 13, 14, 15].

Ethical Considerations in AI Deployment

Deploying AI in healthcare and public health must adhere to stringent ethical standards, focusing on transparency, fairness, and accountability[10, 13, 16]. It's crucial to protect privacy and ensure that health

outcomes are equitable[7]. Developing comprehensive ethical guidelines and governance frameworks is vital for maintaining public trust in public health practices[8, 10, 17, 18].

Overcoming Challenges: Towards a Strategic Approach

Adopting AI and emerging technologies in public health comes with its set of challenges, including data privacy concerns, potential algorithmic bias, future regulatory frameworks[19] and the digital divide[7, 16, 20]. Addressing these issues requires a strategic approach that includes policy development, stakeholder engagement, data stewardship, and continuous evaluation to ensure responsible and effective use of these technologies[7, 16, 17, 21].

Conclusion

Strategically utilizing AI and emerging technologies presents a significant opportunity for Ontario's LPHAs to enhance public health services and outcomes. Embracing these innovations allows public health units to improve efficiency, responsiveness, and their ability to serve the community. Moving forward, a balanced approach that tackles technological, ethical, and operational challenges will be essential for leveraging the full potential of these technologies in enhancing public health.

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TITLE **A Proposal for a Comprehensive Provincial Alcohol Strategy: Enhancing Public Health through Prevention, Education, Regulation and Treatment**

SPONSOR Oxford-Elgin-St. Thomas Board of Health (Operating as Southwestern Public Health (SWPH)

WHEREAS alcohol caused 6,202 deaths, 60,902 hospitalizations (including day surgery) and 258,676 emergency room visits in Ontario for the year 2020; and [1,2]

WHEREAS the harms due to alcohol are disproportionally carried by individuals with low socio-economic status (SES), compared to those of high SES, even though the exact amounts of alcohol or less are consumed; described as the alcohol harm paradox; and [3,4]

WHEREAS alcohol is classified as a group one carcinogen by the International Agency for Research on Cancer and can cause cancer of the breast, colon, rectum, mouth and throat, liver, esophagus, and larynx; and [5]

WHEREAS between 2017-2020, 31.1% of adults age 19 and older exceeded the low-risk threshold for alcohol-related harms as per the *Canadian Guidance on Alcohol and Health*, having reported drinking more than two alcoholic drinks in the past week, with the recognition that self-reported alcohol intake usually is underreported, and the number of those drinking above this level is likely higher. [6]

WHEREAS alcohol was the most frequently reported substance of concern among people accessing treatment services in both Ontario and Canada; and [7]

WHEREAS research confirms that as alcohol becomes more available and affordable, the following problems increase: street and domestic violence, chronic diseases, sexually transmitted infections, road crashes, youth drinking, injury, [8] and suicide; [9,10] which is disturbing being the current government plans to increase alcohol availability with up to 8,500 new stores eligible to sell alcohol in Ontario; and [11]

WHEREAS the current government has committed $10 million, above current funding, over five years to the Ministry of Health to support social responsibility and public health efforts; and [11]

WHEREAS comprehensive and enforced alcohol control policies delay the age of onset and lower alcohol prevalence and frequency among young people; and [12]

WHEREAS the World Health Organization recognizes that policies need to address the availability, acceptability, and affordability of alcohol, as these are the factors that create alcogenic environments; and [12,13]

WHEREAS despite alcohol revenue, the substantial societal costs caused by alcohol create a deficit of $1.947 billion in Ontario and $6.196 billion each year in Canada. [1,14]

WHEREAS the Canadian Radio-television and Telecommunications Commission (CRTC) Code For Broadcast Advertising Of Alcoholic Beverages has not been updated since 1996 and includes no provisions for new ways of advertising, such as social media and lacks concrete enforcement of the rules; and [15]

WHEREAS the membership previously carried alPHa RESOLUTION A08-2, to Establish Stricter Advertising Standards for Alcohol; and

WHEREAS the membership previously carried alPHa RESOLUTION A08-3 requesting advocacy for an Enhanced Provincial Public Education and Promotion Campaign on the Negative Health Impacts of Alcohol Misuse; and

WHEREAS the membership previously carried alPHa RESOLUTION A08-4.1 to eliminate The Availability of Alcohol Except in Liquor Control Board Outlets (LCBO) (i.e. Increase Point of Sale Control); and

WHEREAS the membership previously carried alPHa RESOLUTION A11-1 to conduct a Formal Review and Impact Analysis of the Health and Economic Effects of Alcohol in Ontario and Thereafter Develop a Provincial Alcohol Strategy; and

WHEREAS the membership previously carried alPHa RESOLUTION A12-4 TITLE: Alcohol Pricing and LCBO Revenue Generation; and

WHEREAS all of the above resolutions on alcohol were introduced more than a decade ago, with the majority of actions taken before 2019, according to alPHa's public records, with the recognition that alPHa recently sent a letter regarding a call for an alcohol strategy dated December 14, 2023; priority for these resolutions must be re-established.

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies write to the Provincial Government recommending that a comprehensive alcohol strategy be developed, which includes the following actions: promote comprehensive public education campaigns, strengthen regulations on advertising, increase alcohol taxes, adopt a prevention model, and improve access to addiction treatment and support services;

AND FURTHER that the alcohol strategy be formed and written with the support of a multidisciplinary panel of experts, including local public health and people with lived experience;

AND FURTHER that the Association of Local Public Health Agencies petitions the federal government to either ban alcohol advertising like cannabis and tobacco, or in the absence of such a ban, update the CRTC code to include alcohol restrictions on digital and social media.

AND FURTHER that the Association of Local Public Health Agencies recommend that health equity be foundational to the strategy;

AND FURTHER that the Association of Local Public Health Agencies recommends that in the development of a provincial strategy, the government implement a tax or pricing system that covers the growing deficit alcohol causes each year;

AND FURTHER that the government limits the influence of the Alcohol Industry on the creation of alcohol policies and education campaigns, as they have a conflict of interest being that increased consumption of alcohol provides increased industry sales and profit. [8]

AND FURTHER that a copy be sent to the Chief Medical Officer of Health of Ontario.

BACKGROUND

Effective Interventions

It is recognized in Canada and internationally that the most cost-effective strategies to reduce the harmful effects of alcohol include increasing price, restrictions on the physical availability of alcohol, restrictions on alcohol advertising and marketing, enforcing drunk driving countermeasures, and implementing screening, brief interventions, referral, and treatment. [1,4,8,13,16,17]

It cannot be disputed that tobacco control policies are highly effective in decreasing smoking rates and lung cancer deaths. [14,18,19] As tobacco regulations have slowly become stronger, alcohol regulation has eroded over the past few decades. [17,11,14] These changes began in 2014 when alcohol retail sales were permitted through farmer's markets in Ontario and continued to become more accessible through grocery stores, bookstores, movie theatres, Liquor Control Board of Ontario (LCBO) convenience outlets, extended off premise retail hours of 9 am to 11 pm, home delivery and now further expansion of privatized alcohol retail locations. [20,21] To reduce population-level harms due to alcohol, the measures used for tobacco control should be applied to alcohol.

Comprehensive Public Education Campaigns

When individuals become aware of the link between cancer and alcohol, their support of alcohol policy increases. [22,23] Education alone is known to be less effective in changing population-level behaviours than policy interventions. However, education has positive impacts when coupled with alcohol policy regulating price, availability, and marketing. [1,8,9]

Studies have shown that the public is largely unaware of the harms of alcohol. [24,25,5] The Canadian Guidance on Alcohol and Health states that even small amounts of alcohol can be harmful and that decreasing alcohol use has benefits. [5] Information on alcohol harms and the Canadian Guidance on Alcohol and Health are not promoted widely. This information must be promoted collectively on government and health organization websites, and at point of sale (by the alcohol industry retail sector) across Ontario and Canada. The lack of restrictions on alcohol marketing promotions, coupled with a population who does not fully understand the implications of their choices regarding alcohol, will likely lead to more harm. To make informed decisions using the most recent recommendations made by the Canadian Guidance on Alcohol and Health, the population needs information readily available. [5]

It is well-documented that the Alcohol Industry distorts and denies evidence of alcohol harm to the public and during government consultations regarding alcohol policy. [22,26,27] They also have a conflict of interest because the more people drink, the more profit they make. [8] Therefore, they should not have input regarding public education and alcohol policy.

Stricter regulations on advertising

Alcohol marketing accelerates the onset of drinking, increases consumption by those already drinking, and is associated with problematic alcohol use. [8] The World Health Organization recommends that alcohol advertising be banned or that comprehensive restrictions on alcohol advertising, sponsorship, and promotion be legislated and enforced. [13]

There must be restrictions on advertising and marketing in conjunction with public health campaigns. The playing field is imbalanced between the Ontario Ministry of Health and the Alcohol Industry. The financial power of the Alcohol Industry, compared to Public Health's vastly smaller budget, gives the Alcohol

Industry a clear advantage when competing in mass communication campaigns. [8,11] Marketing is an important industry strategy. Alcohol companies regularly contribute significant amounts of money towards 'investment in brands'. [8] In 2019, AB InBev, the largest alcohol corporation in 2021, was the 11th largest advertiser in the world, while another six Transnational Alcohol Companies were among the top 100 advertisers in 2019. [8]

The Canadian Radio-television and Telecommunications Commission (CRTC) Code For Broadcast Advertising Of Alcoholic Beverages has not been updated since 1996, and it includes no provisions for new ways of advertising, such as social media, and lacks concrete enforcement of the rules. [15] At a provincial level, the Alcohol and Gaming Commission of Ontario (AGCO) regulates alcohol advertising through the Liquor License Control Act, 2019, through a complaints-based system, and within the parameters set out in the regulation and the Registrar's Interim Standards and Requirements for Liquor. [28,29,30]

It is relevant to look at the experience of banning tobacco marketing when considering the likely impact of a ban on alcohol marketing. Before the global community widely adopted the World Health Organization Framework Convention on Tobacco Control (FCTC), comprehensive but not partial bans were found to reduce tobacco consumption in high-income countries. [8] Post adoption of the FCTC, and after numerous countries adopted the highest level of tobacco advertising bans on all direct and indirect advertising, it is estimated that approximately 3.7 million fewer smoking-attributable deaths occurred due to these measures. [8,31] Research from the World Health Organization currently points toward complete and comprehensive advertising and marketing bans as more effective than partial bans and industry-regulated restrictions. [8,31] The best way forward would be to enact a legislative approach, rather than a code, through a National Alcohol Act, like what exists for cannabis and tobacco. [29]

Without a complete ban, the following restrictions could be suggested as better than the status quo:

- Regulations should include all forms of media, such as the internet, social media, print, radio, and television. [29]
- Cap the quantity of alcohol advertising at all retail outlets. [29]
- Ban marketing activities in connection to young people, people with alcohol use disorders, heavy drinkers, and vulnerable populations. [29]
- Supervision should be introduced to ensure compliance with provincial and federal regulations, creating an independent organization to monitor and pre-screen alcohol advertisements and alcohol industry activities proactively rather than reactively, beyond a complaints-based system. [29]

Decrease Affordability, Increase Price

Alcohol was the substance that cost Canada the most in 2020, at $19.7 billion, due to health care, lost productivity, criminal justice, and other direct costs. In comparison, alcohol costs more than both Tobacco ($11.2 Billion) and Opioids ($7.1 Billion) combined in 2020. [14] At the very least, alcohol should cover the costs it contributes to rather than contribute to government debt each year. In contrast, AB InBev, the largest Alcohol corporation in 2021, had an annual revenue of $45.6 billion (U.S) in 2017. To provide perspective on this amount, half of the world's countries don't reach that amount in terms of their gross domestic product.

Increasing the price of alcohol has been noted as the most effective strategy to decrease harm due to alcohol. [1,8,13] Strong policies that could be used include indexed minimum unit pricing, alcohol-specific sales taxes, and markups. [1] Despite what many may think, pricing is considered an equitable policy, as it has been shown to decrease harm in those populations found to be most deprived. As recently demonstrated in Scotland, Minimum Unit Pricing (MUP) was implemented, and it was associated with a

significant 13.4% reduction in deaths and a 4.1% decrease in hospitalizations from conditions 100% attributable to alcohol consumption. [32] The greatest reductions were found in the four most socioeconomically deprived groups, demonstrating the policy is effective at improving deprivation-based inequalities in harm due to alcohol. [32]

Adoption of a Prevention Model

The factors that contribute to youth initiation of substance use, specifically alcohol, are dynamic and complex. Preventing and reducing substance use among youth should include collaborative interventions that decrease risks and harms and increase protective factors and wellness while providing a safe and inclusive environment that does not promote the use of substances. [12,33,34] Because risk and protective factors exist within every aspect of our society, a substance prevention model should consider interventions with an ecological view. This view would consider factors and interventions at the personal, interpersonal, community and policy levels and how these interact at all levels of society. [33] Participating must have a shared vision, collaboration, and agreement. [33]
The Planet Youth approach is a model that demonstrates the above vision and goals, sometimes known as "The Icelandic Model." This approach improves social environments and decreases substance use through collaborative actions based on local research that includes the whole community and partnerships across sectors. [33,35,36] While being implemented in Iceland, this model decreased youth substance use dramatically. Their rate for 30-day drunkenness decreased from 29.6% in 1997 to 3.6% in 2014, with dramatic decreases among other substances as well. [37] The Planet Youth approach has been introduced to numerous countries since 2006 and has been implemented or used in 16 countries and hundreds of municipalities since 2022. [38] Funding an approach such as the Planet Youth Model as part of an Alcohol Strategy would support goals to prevent future substance use.

Improving Access to Treatment and Support Services

Alcohol was the most common problem substance for people accessing treatment services and was reported by more than 67,000 people per year over 2016-2018. [7] Collaboration with People with Lived Experience and those using treatment services are vital, as they are the experts in this regard and their practical experience should be incorporated into the Alcohol Strategy. An alcohol strategy should consider how to improve access to treatment and support services for alcohol use disorder, such as:

- Incorporation of a Universal Screener for substance use in healthcare settings across Ontario, with compensation for healthcare staff who regularly provide screening, brief interventions, and referral to treatment for their clients.
- Improved wait times for public access to treatment and support services related to mental health care and substance-related treatment, as well as ongoing support while people wait for these services.
- Improved support and capacity for caregivers of those with substance use disorders.

The current alcohol policy environment will impact the need for treatment and support services in the future. Because the proportion of heavy drinkers is strongly associated with the total level of consumption of the general population, it is essential to consider society's overall alcohol policy within a strategy to reduce consumption in general, not just consumption by heavy drinkers. [8]

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alPHa RESOLUTION A24-04

TITLE: **Reviewing Provincial Regulatory Needs for Supportive Living Facilities Serving Vulnerable Individuals**

SPONSOR: Oxford-Elgin-St. Thomas Board of Health (Operating as Southwestern Public Health (SWPH)

WHEREAS medical officers of health and municipal staff are required to perform inspections of residential facilities concerning public health and fire and property standards, respectively, when a complaint is received; and

WHEREAS unregulated and quasi-regulated residential facilities are not required to be registered or licensed with medical officers of health or municipalities on a province-wide basis; and

WHEREAS the human rights, safety, health and well-being of the vulnerable residents residing in unsafe and hazardous conditions of poorly managed and maintained unregulated and quasi-regulated residential facilities may be at risk; and

WHEREAS the state of such facilities may be in part due to the lack of registration, routine inspection, adherence to standards, and enforcement capabilities in these settings, which may lead to limited involvement with medical officers of health and municipal inspection authorities; and

WHEREAS the provision of care required to support activities of daily living in unregulated and quasi-regulated residential facilities is not prescribed provincially in Ontario; and

WHEREAS medical officers of health have no powers to inspect or resolve concerns related to the quality of care of activities supporting daily living in quasi-regulated and unregulated residential facilities; and

WHEREAS the patchwork regulatory nature of this sector in Ontario has contributed to a lack of adequate regulation and oversight in many jurisdictions in the province; and

WHEREAS the lack of regulation and oversight in Ontario has resulted in alleged reports of bad actors taking fiscal advantage of their residents; and

WHEREAS there needs to be more transparency and communication with the general public regarding the operation of unregulated and quasi-regulated residential facilities and the health, safety, and wellness complaints received by these facilities.

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies (alPHa) urges the Government of Ontario to review the need to regulate unregulated and quasi-regulated residential facilities on a provincial basis.

AND FURTHER THAT following such a review, alPHa joins voices with the 45 municipalities across Ontario that have called on the province to develop and enact provincially enforced standards for unregulated and quasi-regulated residential facilities;

AND FURTHER THAT the insights of municipalities on this issue should be heard by consulting with the Association of Municipalities of Ontario and all levels of municipal government;

AND FURTHER THAT consideration should be taken in this review to include recommendations toward greater transparency in reporting health and safety issues in these settings to the public;

AND FURTHER THAT provisions should be developed in this review to prevent and penalize owners and operators who demonstrate unscrupulous practices that take advantage of vulnerable populations who reside in quasi-regulated and unregulated residential facilities;

AND FURTHER THAT that a copy be sent to the Chief Medical Officer of Health of Ontario.

BACKGROUND

Reviewing Provincial Regulatory Needs for Residential Facilities

1. Terminology

For a more detailed breakdown of the terminology used in this resolution, please refer to the section below:

Provincially regulated residential facility*:* A residential facility that operates under specified standards of care and may receive provincial funding. For example, the operation and funding of long-term care homes are overseen by the Ministry of Long-Term Care and are regulated through the *Ontario Long-Term Care Homes Act*. Another example is retirement homes: the province requires retirement homes to obtain a license and comply with requirements under the *Retirement Homes Act*; however, retirement homes do not receive funding from the province.[1]

Quasi-regulated residential facility*:* Facilities (e.g., lodging and boarding homes) that receive municipal or provincial funding, are typically registered or licensed and have associated municipal regulations (or standards imposed by community organizations). In Ontario, specific standards of care for these facilities may be prescribed at the municipal level through by-laws.

As a limitation to the operational definition above, it is essential not to disregard facilities that receive funding because there are disparities between residential facilities due to the different funding types available (for instance, Community Homes for Opportunity[2] vs. Community Homeless Prevention Initiative[3]). These funding disparities also translate to inconsistent and less frequent facility assessments, which may affect the quality of care for residents.

Unregulated / not required to be regulated residential facility*:* Defined as a facility that operates without provincial standards of care, provincial or municipal funding or licensing for the aspects of care and accommodation that affect a resident's quality of life. This excludes other regulatory requirements prescribed by the *Ontario Building Code, Fire Code* and *Occupational Health and Safety Act* that protect tenants and workers from hazards that could lead to injury, mental and physical illness, and fatalities. Examples of this type of facility would be boarding homes, supportive living facilities, or residential care facilities operating in areas of Ontario that do not have municipal by-laws regulating these settings or the same facilities that operate without licensure in regions requiring regulations. The quality of care provided in these settings can vary quite notably, with some offering higher levels of accommodation and care and others offering notably poor standards of care. These settings' lack of regulation and standardization may contribute to this variability.

2. Historical context

In the 1970s and 1980s, a process known as deinstitutionalization occurred in Canada.[2] Deinstitutionalization was a practice in which the psychiatric hospitals of the day gradually released their residents into the community.[2] As a movement, deinstitutionalization was associated with increasing advocacy of human rights; this can be demonstrated by the primary goal of this movement, which was to empower people living with mental illness and enable them to integrate into communities.[3-4] However, there was a need to provide adequate community-level care to replace the institutional approach, and there has been a noted failure to provide adequate support (such as income and housing) to people living with a mental illness or substance use disorder.[3] Deinstitutionalization policies contributed to the development of residential care facilities, as new settings in the community were required to offer some degree of support for activities of daily living to individuals with severe and ongoing mental illness.[2]

[2] Community Homes for Opportunity (CHO): This is funding from the province, and can be considered a high quality funding pot for quasi-regulated residential facilities. It includes the provision of Service Liaison personnel that regularly assess the home to ensure standards of care and quality are met.

[3] Community Homeless Prevention Initiative (CHPI): This funding is managed by municipalities and is transferred to agencies with roles in supportive housing, such as the Canadian Mental Health Association (CMHA). The funding may be tied to municipalities' standards via their bylaws, however these standards are not routinely assessed or enforced due to lack of resourcing for community agencies. As such, the condition of these facilities is variable.

Lack of effective oversight and enforcement has led to anecdotes of quasi-regulated and unregulated residential facilities being hazardous for occupants. These conditions can sometimes result in poor health outcomes or even fatalities. Notable examples include a building fire in Toronto that claimed ten lives in 1989, a housing fire in London linked to twelve fire code violations and the death of a resident, and more recently, the closure and relocation of residents living in an unregulated boarding home in St. Thomas.[5-7]

Unregulated residential facilities are often used as last-resort housing; Ontario's lack of affordable housing may be a potential contributing factor.[8] Ontario is currently experiencing an affordable housing crisis, with rent and house prices increasing faster than incomes, lack of rental supply, and unmet demand for supportive housing all playing a role in this crisis.[9] Although multiple levels of government have expressed their commitment to increasing the housing supply, this complex issue is unlikely to be resolved rapidly.[9] In the interim, populations who experience multiple inequities are left with sparse choices for housing and may have to choose between living in an unregulated housing facility or experiencing homelessness.[8]

3. Incidents in these settings that go beyond current province-wide regulations

Additionally, some factors not addressed by the current province-wide regulations (Fire, Building Code, and Food Safety) affect health. For instance, many unregulated and quasi-regulated residential facilities provide care in support of activities of daily living for their residents; this care can vary from requiring periodic involvement with the resident to 24/7 support and supervision.[10] The personal care provided in quasi-regulated and unregulated residential facilities is not subject to province-wide regulatory practices. As such, a regulatory gap exists in that the personal care received by the vulnerable residents who live in quasi-regulated and unregulated residential facilities can be of inferior quality if they happen to live in a municipality that does not have any by-laws that apply to these settings.

Additionally, there have been some anecdotal reports of bad actors within this sector taking advantage of the residents of these facilities. Examples of this type of behavior include operators taking the pension of residents, referring residents to pharmacies they own, and staff of these facilities attempting to bring former residents back to the facility after forced closure by authorities.[11-13]

Even in jurisdictions with bylaws for these types of settings, there has still been some degree of criticism of the regulations in place, with one of the noted concerns being the lack of public-facing transparency. This is an issue as the need for more transparency makes it harder for people looking to live in these facilities (or their relatives/loved ones) to determine a facility of high quality.[2]

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alPHa RESOLUTION A24-05

TITLE: **Early Childhood Food Insecurity: An Emerging Public Health Problem Requiring Urgent Action**

SPONSOR: **Ontario Dietitians in Public Health**

WHEREAS Provincial action is urgently needed to protect young children 0-24 months of age from the harmful effects of household food insecurity; and

WHEREAS alPHa's advocacy efforts have long underscored the need for income-based solutions to food insecurity and have previously resolved on the following areas: A15-04 (Basic Income Guarantee), A18-02 (Minimum Wage that is a Living Wage), A18-4 (Extending the Ontario Pregnancy and Breastfeeding Nutritional Allowance to 24 Months), A18-05 (Adequate Nutrition for Ontario Works and Ontario Disability Support Program Participants and Low Wage Earners), A23-05 (Monitoring Food Affordability); and

WHEREAS food insecurity is a potent social determinant of health, and infants and young children are particularly susceptible to adverse effects of household food insecurity, including associated parental stress, lower breastfeeding rates, and financial barriers to accessing adequate infant formula, when needed; and

WHEREAS when food insecurity results in early childhood malnutrition, infants and young children may experience growth faltering, compromised health, and cognitive impairments which may hinder their lifelong potential and result in considerable burden for the provincial health care system; and

WHEREAS food prices including the price of infant formula have increased over the past year; and

WHEREAS the Ontario Dietitians in Public Health and Food Allergy Canada has called on the Provincial government to amend the Ontario Drug Benefit program to support infants and children with a medical diagnosis*requiring strict avoidance of standard soy and milk proteins; and

WHEREAS the Windsor-Essex County Board of Health passed the resolution *Food Insecurity Compromises Infant Health* in March 2024 in response to a notable local increase in infant food insecurity

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies call on the Provincial government to optimize early growth and development among families most impacted by food insecurity and health inequities, by:

i. Increasing the Pregnancy and Breastfeeding Nutritional Allowance and the Special Diet Allowance to ensure families reliant on Ontario Works or the Ontario Disability Support Program can afford the products they need to adequately nourish their infants.

ii. Expanding the Ontario Drug Benefit to include specialized infant formulas for families whose children (0-24 months) have a medical diagnosis* requiring strict avoidance of standard soy and milk proteins.

AND FURTHER THAT alPHa continues to advocate for income-related policies to reduce household food insecurity, especially for households with children where prevalence of food insecurity is highest.

Backgrounder: Early Childhood Food Insecurity: An Emerging Public Health Problem Requiring Urgent Action

SPONSOR: Ontario Dietitians in Public Health

We acknowledge that this document refers to breastfeeding. Breastfeeding is traditionally understood to involve an individual of the female sex and gender identity who also identifies as a woman and mother. However, it is important to recognize that there are individuals in a parenting and human milk feeding relationship with a child who may not self-identify as such and who may prefer to use the term "chestfeeding" rather than breastfeeding.

Nutrition is fundamental for growth and development in the early years of life[1]. Early childhood malnutrition presents a considerable burden to the health care system in Ontario. The long-term effects of malnutrition during early childhood include increased risk of hypertension, dyslipidemia, insulin resistance in adulthood, poor school achievement due to impaired cognitive development and increased risk of mental illness[2]. These conditions cost millions of dollars in health care expenditures.

Food insecurity, inadequate or insecure access to food due to household financial constraints, continues to be a serious and pervasive public health problem. While the prevalence of infant-specific food insecurity has not been formally investigated, as no provincial surveillance system exists, it is likely significant considering that nearly 1 in 4 children under the age of six live in a household experiencing food insecurity[3].

In the last year, Statistics Canada data demonstrated that the price of food has increased by 10.6%, rising at a rate not seen since the early 1980s[4]. During the same time, the price of infant formula increased 35.5% in Ontario[5]. Exclusive breastfeeding is recommended for up to two years and beyond to support healthy growth and development[6], yet many families choose to offer infant formula instead of breastfeeding for a variety of reasons. Women who experience food insecurity tend to stop exclusive breastfeeding sooner than those who are food secure and they tend to struggle more often to maintain an adequate supply of breastmilk[7,8]. Medical conditions such as food allergies are another reason one may choose to offer infant formula. For those with a medical diagnosis* requiring the strict avoidance of standard soy and milk proteins, there is no substitute for breastmilk other than specialized infant formula. It is estimated that 5,125 infants and children 0-24 months of age in Ontario have a medical diagnosis requiring strict avoidance of standard soy and milk proteins and must have specialized infant formula to meet their nutrient needs[9]. When household food insecurity results in unreliable access to breast milk or formula, both infant health and parental mental health are threatened which can have significant implications for our healthcare system.

*Medical diagnosis can include an IgE mediated food allergy and/or a non-IgE mediated food allergy, such as food protein-induced enterocolitis syndrome (FPIES), food protein-induced enteropathy (FPE), allergic proctocolitis (AP), eosinophilic esophagitis (EoE) and several others. Due to the variability in clinical presentation and lack of validated diagnostic tests, a diagnosis relies on a detailed medical history, physical examination, and a trial elimination of the suspected food allergen.

Provincial interventions that reduce the prevalence of food insecurity, optimize breastfeeding, and improve access to infant formula, including expansion of the Ontario Drug and Benefit program, must be actioned.

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alPHa RESOLUTION A24-05

TITLE: **Compliance with Ontario Not-for-Profit Corporations Act (ONCA): Proposed 2024 alPHa General Operating By-Law to replace The Constitution of the Association of Local Public Health Agencies (Ontario)**

SPONSOR: **alPHa Board of Directors**

WHEREAS *The Ontario Not-for-Profit Corporations Act* (ONCA) is a significant legislative update that replaced Ontario's Corporations Act on October 19, 2021, as regards to not-for-profit corporations, including alPHa; and

WHEREAS ONCA represents a pivotal step forward in enhancing the governance, accountability, and overall operations of alPHa as a not-for-profit organization in Ontario; and

WHEREAS ONCA provides a comprehensive set of regulations tailored to meet the unique needs of non-profit corporations while promoting transparency, accountability, and effective governance; and

WHEREAS ONCA includes clauses that allow flexibility in organizational structure and the customization of certain provisions to the specific needs and missions of individual organizations; and

WHEREAS organizations that do not formally file such provisions within ONCA's compliance requirements with the government of Ontario by October 18, 2024, will be subject to the more restrictive governance provisions of the Act; and

WHEREAS alPHa has, in consultation with legal counsel, drafted a General Operating By-Law that retains the key elements, structures, processes and objectives of its current Constitution while ensuring compliance with ONCA provisions; and

WHEREAS substantial time and significant resources have been committed to this process since the Spring of 2022 with regular updates to members throughout; and

WHEREAS alPHa must file the General Operating By-Law with the Ontario Government no later than October 18, 2024, to ensure that alPHa's current organizational structure and objectives remain legislatively compliant; and

WHEREAS changes to the alPHa Constitution require ratification by the alPHa membership via resolution at a general meeting by a majority vote,

NOW THEREFORE BE IT RESOLVED that the Association of Local Public Health Agencies formally adopt and approve the formal filing of *GENERAL OPERATING BY-LAW NO. 2, A by-law relating generally to the conduct of the affairs of the ASSOCIATION OF LOCAL PUBLIC HEALTH AGENCIES (ONTARIO),* which will replace *The Constitution of the Association of Local Public Health Agencies (Ontario)* effective October 18, 2024.

Ontario's Not-for-Profit Corporations Act (ONCA)

as of March 18, 2024

Ontario's Not-for-Profit Corporations Act (ONCA) is a significant legislative update that replaced Ontario's *Corporations Act* on October 19, 2021 regarding not-for-profit corporations, including alPHa. The ONCA was introduced to enhance the legal framework governing not-for-profit organizations in the province of Ontario. It provides a comprehensive set of regulations tailored to meet the unique needs of non-profit corporations while promoting transparency, accountability, effective governance and to ensure due diligence.

The Association of Local Public Health Agencies (alPHa) has until October 18, 2024, to review, update, and file governing documents with the Ontario government or ONCA provisions will prevail. Until then, the rules in alPHa's articles and Constitution continue to be valid.

Why the changes and what are the changes?

The main objectives of introducing the ONCA were as follows:

Enhanced Governance: The outdated Act did not provide comprehensive guidelines for effective governance, leading to potential issues with accountability and transparency. ONCA aims to strengthen the governance structures of not-for-profit corporations. It introduces clearer guidelines for Boards of Directors, Members, and Officers, enabling organizations to operate more efficiently and effectively.

Improved Accountability: The Act places a strong emphasis on financial accountability, requiring not-for-profit corporations to maintain accurate records, prepare financial statements, and undergo regular audits.

Improved Flexibility: The inflexibility of the previous legislation hindered the ability of not-for-profit corporations to adapt to changing circumstances and needs. ONCA streamlines the incorporation process and provides more flexibility in organizational structure. It allows for the customization of certain provisions, tailoring them to the specific needs and missions of individual organizations.

Enhanced Member Rights: The Act enhances the rights and protections of members of not-for-profit corporations, ensuring greater participation and representation in the decision-making processes.

Modernization and Legislative Gaps: The Ontario *Corporations Act*, which had been in place for decades, was outdated and unable to address the evolving needs and complexities of not-for-profit organizations. ONCA was designed to offer a modernized regulatory framework, aligning with current legal landscape and best practices. The ONCA provisions address modern challenges such as electronic communications, online governance, and virtual meetings.

Harmonization with Federal Laws: The ONCA aligns provincial regulations with the *Canada Not-for-profit Corporations Act* (CNCA).

Existing nonprofits are not required to pass new By-laws. However, alPHa has received legal advice to change to a By-law from the current Constitution of the Association of Local Public Health Agencies (Ontario). If alPHa does not ensure development of a By-law that aligns with, and reflects the applicable ONCA rules, the rules set out in the ONCA will prevail over alPHa's current Constitution.

Many organizations, such as the Ontario Municipal Association and others, have passed their new by-laws to come into compliance with ONCA.

How do these changes impact alPHa and its members?

The ONCA represents a pivotal step forward in enhancing the governance, due diligence, accountability, and overall operations of alPHa as a not-for-profit organization in Ontario.

On legal advice, this By-law was targeted to address the ONCA legal compliance. Within the new By-law, the Constitution of the Association of Local Public Health Agencies (Ontario) and its objectives remain valid and have not changed substantively. The Constitution has been customized and tailored into a By-law that aligns with, and follows the ONCA rules, and supports alPHa's letters of patent and alPHa's annual requirements updating the Ontario Business Registry. This By-law is a legal necessity to allow for alPHa's unique organizational structure to remain legislatively compliant.

alPHa staff, volunteers and legal counsel have worked tirelessly on this for the better part of two years. alPHa would like to sincerely thank them for their work.

Proposed changes will come forward in a Resolution at the AGM in June for the membership to pass.

SOUTHWESTERN PUBLIC HEALTH

For the Three Months Ending Sunday, March 31, 2024

STANDARD/ PROGRAM	YEAR TO DATE ACTUAL	YEAR TO DATE BUDGET	YEAR TO DATE VAR	FULL YEAR BUDGET	FULL YEAR VAR	% VAR
Direct Program Costs						
Foundational Standards						
Emergency Management	$25,847	$31,602	$5,754	$126,407	$100,559	20.%
Effective Public Health Practise	68,230	80,747	12,516	322,986	254,756	21.%
Health Equity Program	76,283	75,316	-966	301,266	224,983	25.%
Population Health Assessment	65,701	93,506	27,805	374,023	308,322	18.%
Foundational Standards Total	**236,061**	**281,171**	**45,109**	**1,124,682**	**888,620**	**21.%**
Chronic Disease Prevention & Well-Being						
Built Environment	47,546	67,502	19,956	270,008	222,462	18.%
Healthy Eating Behaviours	24,796	27,444	2,648	109,777	84,980	23.%
Physical Activity and Sedentary Behaviour	27,749	30,682	2,932	122,727	94,977	23.%
Suicide Risk & Mental Health Promotion	62,078	66,553	4,476	266,213	204,135	23.%
Chronic Disease Prevention & Well-Being Total	**162,169**	**192,181**	**30,012**	**768,725**	**606,555**	**21.%**
Food Safety						
Food Safety (Education, Promotion & Inspection)	121,473	126,864	5,392	507,457	385,984	24.%
Food Safety Total	**121,473**	**126,864**	**5,392**	**507,457**	**385,984**	**24.%**
Healthy Environments						
Climate Change	53,290	86,318	33,028	345,273	291,982	15.%
Health Hazard Investigation and Response	101,644	135,030	33,386	540,121	438,477	19.%
Healthy Environments Total	**154,934**	**221,348**	**66,414**	**885,394**	**730,459**	**17.%**
Healthy Growth & Development						
Breastfeeding	61,393	99,020	37,628	396,082	334,689	16.%
Parenting	41,224	97,467	56,243	389,868	348,644	11.%
Reproductive Health/Healthy Pregnancies	85,228	156,728	71,499	626,910	541,682	14.%
Healthy Growth & Development Total	**187,845**	**353,215**	**165,370**	**1,412,860**	**1,225,015**	**13.%**
Immunization						
Vaccine Administration	34,331	39,386	5,055	157,544	123,213	22.%
Vaccine Management	17,192	33,346	16,153	133,382	116,190	13.%
Immunization Monitoring and Surveillance	24,238	30,144	5,906	120,574	96,337	20.%
Immunization Total	**75,761**	**102,876**	**27,115**	**411,500**	**335,740**	**18.%**
Infectious & Communicable Diseases						
Infection Prevention & Control	368,682	520,028	151,346	2,080,112	1,711,430	18.%
Needle Exchange	0	12,800	12,800	51,200	51,200	0.%
Rabies Prevention and Control and Zoonotics	35,860	44,071	8,212	176,285	140,425	20.%
Sexual Health	243,643	279,472	35,829	1,117,887	874,245	22.%
Tuberculosis Prevention and Control	17,310	22,624	5,314	90,497	73,187	19.%
Vector-Borne Diseases	29,814	56,341	26,526	225,362	195,548	13.%
COVID-19 Mass Immunization	178,963	217,217	38,255	868,869	689,907	21.%
Infectious & Communicable Diseases Total	**874,272**	**1,152,553**	**278,282**	**4,610,212**	**3,735,942**	**19.%**
Safe Water						
Water	47,224	40,947	-6,276	163,789	116,566	29.%
Safe Water Total	**47,224**	**40,947**	**-6,276**	**163,789**	**116,566**	**29.%**
School Health - Oral Health						
Healthy Smiles Ontario	201,030	214,990	13,959	859,958	658,928	23.%
School Screening and Surveillance	86,702	91,087	4,384	364,347	277,645	24.%
School Health - Oral Health Total	**287,732**	**306,077**	**18,343**	**1,224,305**	**936,572**	**24.%**
School Health - Immunization						
School Immunization	246,520	318,719	72,199	1,274,875	1,028,356	19.%
School Health - Other						
Comprehensive School Health	351,734	409,883	58,149	1,639,533	1,287,799	21.%
Substance Use & Injury Prevention						
Harm Reduction Enhancement	32,178	45,380	13,202	181,520	149,342	18.%
Injury Prevention	46,556	51,351	4,795	205,404	158,848	23.%
Smoke Free Ontario Strategy: Prosecution	46,997	61,588	14,591	246,352	199,355	19.%
Substance Misuse Prevention	94,434	107,452	13,018	429,807	335,373	22.%
Substance Use & Injury Prevention Total	**220,165**	**265,771**	**45,606**	**1,063,083**	**842,918**	**21.%**
TOTAL DIRECT PROGRAM COSTS	**2,965,890**	**3,771,605**	**805,715**	**15,086,415**	**12,120,525**	**20.%**

INDIRECT COSTS						
Indirect Administration	825,593	840,318	14,726	3,361,274	2,535,681	25.%
Corporate	565	58,201	57,636	232,805	232,240	0.%
Board	6,888	8,736	1,848	34,945	28,057	20.%
HR - Administration	155,484	232,705	77,221	930,820	775,336	17.%
Communications	17,942	13,375	-4,567	53,500	35,558	34.%
Premises	402,286	429,789	27,503	1,719,154	1,316,868	23.%
TOTAL INDIRECT COSTS	**1,408,758**	**1,583,124**	**174,367**	**6,332,498**	**4,923,740**	**22.%**
TOTAL GENERAL SURPLUS/DEFICIT	**4,374,648**	**5,354,729**	**980,081**	**21,418,913**	**17,044,265**	**20.%**
100% MINISTRY FUNDED PROGRAMS						
MOH Funding	15,658	19,954	4,296	79,814	64,156	20.%
Senior Oral Care	257,655	394,301	136,646	1,577,205	1,319,550	16.%
TOTAL 100% MINISTRY FUNDED	**273,313**	**414,255**	**140,942**	**1,657,019**	**1,383,706**	**16.%**
One-Time Funding - April 1, 2023 to March 31, 2024						
OTF NEP	48,385	55,000	6,615	55,000	6,615	88.%
OTF Public Health Inspector Practicum	20,000	20,000	0	20,000	0	100.%
OTF- VACCINE FRIDGE	32,600	32,600	0	32,600	0	100.%
OTF IPAC HUB	547,521	582,500	34,979	582,500	34,979	94.%
OTF Merger Planning - Strengthening Public Health	23,914	75,000	51,086	75,000	51,086	32.%
Total OTF	**672,420**	**765,100**	**-31,779**	**765,100**	**-16,779**	**184.%**
Programs Funded by Other Ministries, Agencies						
Healthy Babies Healthy Children	1,653,539	1,653,539	0	1,653,539	0	100.%
Pre and Post Natal Nurse Practitioner	139,000	139,000	0	139,000	0	100.%
School LDCP	23,894	58,116	34,222	58,116	34,222	41.%
PHAC Smoking Cessation	225,038	264,826	39,788	264,826	39,788	85.%
Low German Speaking Partnership Study	1,125	0	-1,125	0	-1,125	0.%
Total Programs Funded by Other Ministries, Agencies	**2,042,596**	**2,115,481**	**-167,838**	**2,115,481**	**1,175,688**	**34.%**

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INDEPENDENT PRACTITIONER'S REASONABLE ASSURANCE REPORT ON COMPLIANCE

To the Board of Health and the Ministry of Health and Long-Term Care:

Report on the Annual Reconciliation

We have audited the 2023 Annual Reconciliation Report (Certificate of Settlement), for the **Oxford Elgin St. Thomas Health Unit** for:

1) 2023 base funding approved for the period of January 1, 2023 to December 31, 2023;
2) 2022 one-time funding approved to March 31, 2023;
3) 2023 one-time funding approved to December 31, 2023;
4) 2023 one-time funding (including 2022-23 Carry Over one-time funding) approved to March 31, 2024;

The 2023 Annual Reconciliation Report have been prepared by management based on the Transfer Payment Agreements between the Ministry of Health (the "Ministry") and the Board of Health and the "Instructions for Completion of the 2023 Year-End Settlement".

Management's Responsibility for the Annual Reconciliation Report

Management is responsible for the preparation of the Annual Reconciliation Report in accordance with the financial reporting provisions in the Transfer Payment Agreements between the ministry and Board of Health, the "Instructions for Completion of the 2023 Year-End Settlement", and for such internal controls as management determines are necessary to enable the preparation of the Annual Reconciliation Report that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on the Annual Reconciliation Report based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance that the Annual Reconciliation Report is free from material misstatement taking into account the Transfer Payment Agreements between the ministry and the Board of Health and the "Instructions for Completion of the 2023 Year-End Settlement".

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Auditor's Responsibility (Continued)

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the Annual Reconciliation Report. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Annual Reconciliation Report, whether due to fraud or error.

In making those risk assessments, the auditor considers internal controls relevant to the entity's preparation of the Annual Reconciliation Report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the Annual Reconciliation Report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Our Independence and Quality Control

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

The firm applies Canadian Standard on Quality Control 1, Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance Engagements and, accordingly, maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

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INDEPENDENT PRACTITIONER'S REASONABLE ASSURANCE REPORT ON COMPLIANCE (CONTINUED)

Basis for Audit Opinion

The Board of Health derives funding from the ministry for the provision of mandatory and related public health programs and services.

Satisfactory audit verification as to the use and reporting of funding forms the basis of the audit opinion. Where audit verification is unsatisfactory, limited, or incomplete, a qualified opinion may occur.

Audit Opinion

In our opinion, the Annual Reconciliation Report presents fairly in all material aspects, the results of the Board of Health Operations for the 2023 Settlement Year and is in accordance with the Transfer Payment Agreements between the ministry and the Board of Health and the "Instructions for Completion of the 2023 Year-End Settlement".

Basis of Accounting and Restriction and Distribution of Use

The Annual Reconciliation Report is prepared to assist the Board of Health to meet the financial reporting requirements of the ministry. As a result, the Annual Reconciliation Report may not be suitable for other purposes.

Our report is intended solely for the Board of Health and the ministry, and should not be distributed to or used by parties other that the Board of Health or the Ministry.

St. Thomas, Ontario

April 25, 2024

Graham Scott Enns LLP

CHARTERED PROFESSIONAL ACCOUNTANTS
Licensed Public Accountants

MINISTRY OF HEALTH

OFFICE OF CHIEF MEDICAL OFFICER OF HEALTH, PUBLIC HEALTH

2023 ANNUAL RECONCILIATION REPORT (CERTIFICATE OF SETTLEMENT)

NAME OF PUBLIC HEALTH UNIT: **Southwestern Public Health**

Section 1: Base Funding (January 1, 2023 to December 31, 2023)
- Programs Funded at 70%
- Programs Funded at 100%

Section 2: 2022 One-Time Funding Approved to March 31, 2023
- One-Time Non-Covid Projects/Initiatives Funded at 100%
- One-Time Covid Projects/Initiatives Funded at 100%

Section 3: 2023 One-Time Funding Approved to December 31, 2023
- One-Time Non-Covid Projects/Initiatives Funded at 100%
- One-Time Covid Projects/Initiatives Funded at 100%

Section 4: 2023 One-Time Funding Approved to March 31, 2024
- One-Time Non-Covid Projects/Initiatives Funded at 100% (including Carry over programs from yea
- One-Time Covid Projects/Initiatives Funded at 100%
- One-Time Capital Projects Funded at 100% (including Carry over programs from year 2022-23)

		Program Name per Transfer Payment Agreement	Approved Allocation	Funding Received	Expenditure at 100%	(Deduct) Offset Revenue	Net Expenditure	Eligible Expenditure	Due to / (from) Province
Section 1 Base Funding (January 1, 2023 to December 31, 2023)	Programs Funded at 70%	Mandatory	11,168,975	11,168,978	16,840,134	(366,865)	11,531,288	11,168,975	3
							-	-	-
		Sub-Total Programs Funded at 70%	**11,168,975**	**11,168,978**	**16,840,134**	**(366,865)**	**11,531,288**	**11,168,975**	**3**
	Programs Funded at 100%	Ontario Seniors Dental Program	1,061,100	1,061,106	1,071,232	10,132	1,081,364	1,061,100	6
		MOH	178,700	179,305	62,632	-	62,632	62,632	116,673
		One-Time Mitigration	1,498,900	1,498,900	1,498,900	-	1,498,900	1,498,900	-
		Sub-Total Programs Funded at 100%	**2,738,700**	**2,739,311**	**2,632,764**	**10,132**	**2,642,896**	**2,622,632**	**116,679**
Total Section 1 Base Funding (January 1, 2023 to December 31, 2023)			**13,907,675**	**13,908,289**	**19,472,898**	**(356,733)**	**14,174,184**	**13,791,607**	**116,682**
Section 2 2022 One-Time Funding Approved to March 31, 2023	One-Time Non-Covid Projects / Initiatives Funded at 100%	Mandatory Programs: Needle Exchange Program	36,500	36,500	35,434	-	35,434	35,434	1,066
		Mandatory Programs: Public Health Inspector Practicum Program	20,000	20,000	20,000	-	20,000	20,000	-
		School-Focused Nurses Initiative	897,000	897,000	897,000	-	897,000	897,000	-
		Infection Prevention and Control Hub Program	685,000	685,000	685,000	-	685,000	685,000	0
		Temporary Retention Incentive for Nurses	386,000	327,223	205,766	-	205,766	205,766	121,457
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Non-Covid Projects / Initiatives Funded at 100%	**2,024,500**	**1,965,723**	**1,843,199**	**-**	**1,843,199**	**1,843,199**	**122,524**
	One-Time Covid Projects / Initiatives Funded at 100%						-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Covid Projects Funded at 100%	**-**	**-**	**-**	**-**	**-**	**-**	**-**
	One-Time Capital Projects / Initiatives Funded at 100%	Ontario Seniors Dental	500,000	500,000	453,910	-	453,910	453,910	46,090
		Ontario Seniors Dental Care Program Capital: Mobile Dental Clinic	1,540,000	-	-	-	-	-	-
		Space Needs Assessment	20,000	20,000	-	-	-	-	20,000
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Capital Projects Funded at 100%	**2,060,000**	**520,000**	**453,910**	**-**	**453,910**	**453,910**	**66,090**
Total Section 2 - 2022 One-Time Funding Approved to March 31, 2023			**4,084,500**	**2,485,723**	**2,297,109**	**-**	**2,297,109**	**2,297,109**	**188,614**

MINISTRY OF HEALTH

OFFICE OF CHIEF MEDICAL OFFICER OF HEALTH, PUBLIC HEALTH

2023 ANNUAL RECONCILIATION REPORT (CERTIFICATE OF SETTLEMENT)

NAME OF PUBLIC HEALTH UNIT: Southwestern Public Health

Section 1: Base Funding (January 1, 2023 to December 31, 2023)
- Programs Funded at 70%
- Programs Funded at 100%

Section 2: 2022 One-Time Funding Approved to March 31, 2023
- One-Time Non-Covid Projects/Initiatives Funded at 100%
- One-Time Covid Projects/Initiatives Funded at 100%

Section 3: 2023 One-Time Funding Approved to December 31, 2023
- One-Time Non-Covid Projects/Initiatives Funded at 100%
- One-Time Covid Projects/Initiatives Funded at 100%

Section 4: 2023 One-Time Funding Approved to March 31, 2024
- One-Time Non-Covid Projects/Initiatives Funded at 100% (including Carry over programs from year
- One-Time Covid Projects/Initiatives Funded at 100%
- One-Time Capital Projects Funded at 100% (including Carry over programs from year 2022-23)

		Program Name per Transfer Payment Agreement	Approved Allocation	Funding Received	Expenditure at 100%	(Deduct) Offset Revenue	Net Expenditure	Eligible Expenditure	Due to / (from) Province
Section 3 2023 One-Time Funding Approved to December 31, 2023	One-Time Non-Covid Projects / Initiatives Funded at 100%						-	-	-
							-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Non-Covid Projects / Initiatives Funded at 100%	-	-	-	-	-	-	-
	One-Time Covid Projects / Initiatives Funded at 100%	COVID-19: General Program Extraordinary Costs	175,000	-	-	-	-	-	-
		COVID-19: Vaccine Program Extraordinary Costs	464,100	-	219,547	-	219,547	219,547	(219,547)
				-	-	-	-	-	-
							-	-	-
		Sub-Total One-Time Covid Projects / Initiatives Funded at 100%	**639,100**	**-**	**219,547**	**-**	**219,547**	**219,547**	**- 219,547**
Total Section 3 - 2022 One-Time Funding Approved to December 31, 2023			**639,100**	**-**	**219,547**	**-**	**219,547**	**219,547**	**(219,547)**
Section 4 2023 One-Time Funding Approved to March 31, 2024 (To be settled with 2024 settlement)	One-Time Non-Covid Projects/Initiatives Funded at 100%	Mandatory Programs: Needle Syringe Program	55,000	41,249	11,606	-	11,606	11,606	29,643
		Mandatory Programs: New Purpose Build Vaccine Refrigerators	32,600	24,447	32,600	-	32,600	32,600	(8,153)
		Mandatory Programs: Public Health Inspector Practicum Program	20,000	14,998	20,000	-	20,000	20,000	(5,002)
		School-Focused Nurses Initiative	225,000	225,000	225,000	-	225,000	225,000	-
		Infection Prevention and Control Hub Program	582,500	436,878	371,805	-	371,805	371,805	65,073
		Respiratory Syncytial Virus (RSV) Adult Prevention Program	313,000	-	-	-	-	-	-
		Strengthening Public Health: Merger Planning	75,000	-	-	-	-	-	-
							-	-	-
		Sub-Total One-Time Non-Covid Projects / Initiatives Funded at 100%	**1,303,100**	**742,572**	**661,011**	**-**	**661,011**	**661,011**	**81,561**
	2022-23 **Carry Over** Non-Covid One-Time Funds at 100%						-	-	-
							-	-	-
							-	-	-
		Sub-Total Carry Over One-Time Non-Covid Projects / Initiatives Funded at 100%	-	-	-	-	-	-	-
	One-Time Covid Projects/Initiatives Funded at 100%	COVID-19: Vaccine Program Enhancement	257,800				-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Covid Projects / Initiatives Funded at 100%	**257,800**	**-**	**-**	**-**	**-**	**-**	**-**
	One-Time Capital Projects Funded at 100%	Ontario Seniors Dental Care Program Capital: New Fixed Site - Oxford County Dental Suite	1,540,000	1,540,000	-	-	-	-	1,540,000
							-	-	-
							-	-	-
							-	-	-
							-	-	-
		Sub-Total One-Time Capital Projects Funded at 100%	**1,540,000**	**1,540,000**	**-**	**-**	**-**	**-**	**1,540,000**
	2022-23 **Carry Over** One-Time Capital Projects at 100%						-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
							-	-	-
		Sub-Total Carry Over One-Time Capital Projects Funded at 100%	-	-	-	-	-	-	-
Total Section 4 - 2023 One-Time Funding Approved to March 31, 2024 (To be settled in 2024)			**3,100,900**	**2,282,572**	**661,011**	**-**	**661,011**	**661,011**	**1,621,561**

Sub-Total 2023 Settlement (Non-Covid Programs)	**17,992,175**	**16,394,012**	**21,770,007**	**- 356,733**	**16,471,294**	**16,088,716**	**305,296**
Sub-Total 2023 Settlement (Covid Programs)	**639,100**	**-**	**219,547**	**-**	**219,547**	**219,547**	**- 219,547**
Net Total 2023 Settlement (Section 1) + (Section 2) + (Section 3)	**18,631,275**	**16,394,012**	**21,989,554**	**- 356,733**	**16,690,841**	**16,308,263**	**85,749**

Having the authority to bind the Board of Health for the Public Health Unit:

We certify that the Financials shown in the Annual Reconciliation Report and the supporting schedule are complete and accurate and are in accordance with Transfer Payment Agreements and Reports filed with the appropriate Municipal Council.

April 29, 2024
Date

Signature
Medical Officer of Health / Chief Executive Officer

April 29, 2024
Date

Signature
Chair of the Board of Health / Authorized Officer

MINISTRY OF HEALTH
OFFICE OF CHIEF MEDICAL OFFICER OF HEALTH, PUBLIC HEALTH
2023 ANNUAL RECONCILIATION REPORT (CERTIFICATE OF SETTLEMENT)

NAME OF PUBLIC HEALTH UNIT: **Southwestern Public Health**

SCHEDULE 1: Schedule of Offset Revenues

Mandatory Programs (70%)	Line #	Reference	Actual $	Ministry Use Only
Interest Income	L 1		221,209	
Universal Influenza Immunization Program clinic reimbursement	L 2			
Meningococcal C Program clinic reimbursement	L 3		23,880	
Human Papilloma Virus Program reimbursement	L 4			
Healthy Smiles Ontario (70%) - part of Mandatory Programs	L 5			
Revenues Generated from Other Government Dental Program:	L 6			
Ontario Works (OW)	L 7			
Ontario Disability Support Program (ODSP)	L 8			
Other government dental programs (please specify):	L 9			
Other (Specify):	L 10			
Other fees and recoveries	L 11		121,776	
	L 12			
	L 13			
2023 Total Offset Revenues	**L 14**	**To Summary Page Cell G18 - Offset (Revenue)**	**366,865**	

Ontario Seniors Dental Care Program (100%)	Line #	Reference	Actual $	Ministry Use Only
Interest Income	L 15			
Client Co-Payments	L 16			
Revenues Generated from Other Government Dental Program:	L 17			
Ontario Works (OW)	L 18			
Ontario Disability Support Program (ODSP)	L 19			
Other government dental programs (please specify):	L 20			
Senior Dental offset revenue	L 21		(10,132)	
	L 22			
	L 23			
2023 Total Offset Revenues	**L 24**	**To Summary Page Cell G23 - Offset (Revenue)**	**(10,132)**	

4. ACCUMULATED SURPLUS

The accumulated surplus consists of the following individual fund surplus/(deficit) and reserves as follows:

	2023 $	2022 $
SURPLUS		
General reserve	**307,034**	306,899
Levy to be returned to municipalities	**255,500**	-
Invested in tangible capital assets	**9,381,629**	9,299,868
	9,944,163	9,606,767
AMOUNTS TO BE RECOVERED		
Net long-term debt	**(6,929,000)**	(7,170,000)
ACCUMULATED SURPLUS	**3,015,163**	2,436,767

5. DEFERRED REVENUE

	2023 $	2022 $
Ontario Seniors Dental Care Program Capital:		
New Fixed Site (March 31, 2024)	**1,540,000**	-
Low German Needs Assessment	**67,392**	84,269
IPAC Hub Infection (March 31, 2024)	**65,073**	-
Locally Driven Collaborative Projects (March 31, 2024)	**53,222**	-
Healthy Babies Healthy Children (March 31, 2024)	**41,503**	
Needle Syringe Program (March 31, 2024)	**29,643**	-
Sewage Inspection Program	**17,175**	17,175
Public Health Agency of Canada	**9,067**	9,067
Prenatal and Postnatal Nurse Practitioner (March 31, 2024)	**846**	-
Ontario Seniors Dental Care Program Capital:		
New Fixed Site (March 31, 2023)	**-**	1,155,004
Mobile Dental Clinic (March 31, 2023)	**-**	500,000
Healthy Babies Healthy Children (March 31, 2023)	**-**	57,529
Needle Syringe Program (March 31, 2023)	**-**	17,039
Total Deferred Revenue	**1,823,921**	1,840,083