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Healthy Environments and Consumer Safety Branch
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January 22, 2021

Terence Hubbard
Vice-President, Operations,
Impact Assessment Agency of Canada
160 Elgin Street, 22nd Floor
Ottawa, ON K1A 0H3

Subject: Health Canada and Public Health Agency of Canada advice on the design of the regional assessment process and the development of the terms of reference for the Ring of Fire Regional Assessment

Dear Terence Hubbard,

Thank you for your letter dated December 7, 2020, requesting Health Canada's input to the design of the process and the development of the terms of reference for the Ring of Fire regional assessment.

Health Canada participates in the regional assessment process as a federal authority under the *Impact Assessment Act* (IAA). Health Canada makes available specialist or expert information or knowledge in its possession, and coordinates input from the Public Health Agency of Canada (PHAC), as required, at the request of the Impact Assessment Agency of Canada (the Agency).

Health Canada and PHAC have considered the proposed goal of the assessment cited in your letter and provided input, where appropriate, in the attached Federal Authority Advice Record. Should the Agency determine that the regional assessment may include human health-related considerations, Health Canada and PHAC can provide expertise on issues within their mandates and federal jurisdiction.



Should you have any questions concerning Health Canada's response, please contact the undersigned.

Sincerely,

<Original signed by>

David Morin
Director General, Safe Environments Directorate
Healthy Environments and Consumer Safety Branch, Health Canada
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Cc: Isabella Chan, Assistant Deputy Minister, Healthy Environments and Consumer Safety Branch, Health Canada
Cc: Denise MacGillivray, Director General, Environmental Health and Pesticides Directorate, Regulatory Operations and Enforcement Branch, Health Canada
Cc: Malgorzata Miszkurka, A/Director, Social Determinants of Health Division, PHAC
Cc: Suzanne Leppinen, Director, Chemicals and Environmental Health Management Bureau, Healthy Environments and Consumer Safety Branch, Health Canada
Cc: Chantal Roberge, Director, Environmental Health and Internationally Protected Persons Programs, Regulatory Operations and Enforcement Branch, Health Canada
Cc: Kathleen Buset, Manager, Chemicals and Environmental Health Management Bureau, Healthy Environments and Consumer Safety Branch, Health Canada

Attachment: Federal Authority Advice Record: Regional Assessment in the Ring of Fire Area, Registry Number: 80468. January 22, 2021

Regional Assessment in the Ring of Fire Area

Federal Authority Advice Record

Response due to IAAC.RegionalRoF-CdFRegionale.AEIC@Canada.ca by January 22, 2021

Registry Number: 80468

Department/Agency	Health Canada and Public Health Agency of Canada
Lead Contact(s)	Kathleen Buset
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PART 1 – In providing your responses to the items below, please include any relevant information on associated Indigenous, public or other consultation or engagement activities and identify any partners or collaborations.

1. MANDATE AND AREA(S) OF EXPERTISE

Clearly outline the mandate of your department or agency and detail your area(s) of responsibility or expertise that may be related to the regional assessment

As federal authorities under the *Impact Assessment Act* (IAA), Health Canada and the Public Health Agency of Canada (PHAC) will support the Impact Assessment Agency of Canada (the Agency) on regional assessments by providing specialist or expert information or knowledge in their possession (expertise) and by completing and presenting any new analysis of health-relevant datasets. The Agency ultimately determines how to use the expertise provided by Health Canada or PHAC.

Health Canada can provide human health expertise in the following areas:

- Air quality;
- Recreational and drinking water quality;
- Traditional foods (country foods);
- Noise;
- Methodological expertise in conducting human health risk assessment;
- Methodological expertise in conducting health impact assessment (HIA);
- Electromagnetic fields;
- Radiological emissions; and,
- Public health emergency management of toxic exposure events.

In addition to the expertise routinely provided on project-specific impact assessments (IA), Health Canada can also provide technical support on the following activities upon request:

- Design and delivery of outreach programs for public and Indigenous groups to increase awareness of potential risks, health impacts and mitigation strategies related to radon, chemicals, air quality and water quality;
- Development and provision of technical guidance and training to support sound management of contaminated sites;
- Design, implementation and interpretation of results related to human biomonitoring studies; and,
- Design, implementation and interpretation of results related to climate change impacts on the health of Canadians, their communities and their health systems, to facilitate effective adaptation.

PHAC has expertise on the social determinants of health approach and health equity¹, and may provide that expertise through Health Canada, upon request from the Agency. Additionally, Health Canada collaborates with Indigenous Services Canada's First Nations and Inuit Health Branch on areas of expertise pertaining to First Nations peoples' health, such as drinking water quality on reserves, country foods and food security, certain social determinants of health, and community health and wellness programs and services.

2. REGULATORY AUTHORITIES

List and summarize the nature of the regulatory authorities of your department or agency in relation to physical works or activities in the Ring of Fire area.

Neither Health Canada nor PHAC have a regulatory role with respect to major projects subject to the IAA. Additionally, given the uncertain nature of the scope of future "physical works or activities in the Ring of Fire area", it is not possible to identify which existing regulatory authorities may be exercised in the future.

3. EXPERT INFORMATION OR KNOWLEDGE

List and summarize the specialists or expert information or knowledge that your department or agency has that may be relevant to the regional assessment. Include all research, reports and data sets in this response inventory.

Specific to the Ring of Fire area

An initial scan of internal subject matter expert groups identified few instances of Health Canada or PHAC research, reports or data sets specific to the Ring of Fire area. Knowledge in the general vicinity is typically limited to that provided by project proponents during various federal environmental or IA processes. Work directly relevant to the area includes:

- Health Canada's HealthADAPT initiative funds climate change and health vulnerability and adaptation assessments for seven health units within Northern Ontario², including the Porcupine Health Unit. A climate science and health report for northern Ontario will identify regional vulnerabilities and health risks from climate change, along with current capacity and possible mitigation strategies³;
- Health Canada's Environmental Health Program develops outreach tools and conducts collaborative projects and partnership building with groups vulnerable to environmental health risks. Past initiatives relevant to the Ring of Fire area include outreach tailored to Indigenous audiences at venues in the Thunder Bay area, and a "train-the-trainer" program to enable Indigenous and other community leaders to deliver presentations within their communities based on customized Health Canada materials; and,
- Participation in Agency-led, in-community, early engagement sessions with the Fort Albany First Nation (FN), Kasabonika Lake FN, Martin Falls FN, Webequie FN, Weenusk FN, and Grassy Narrows FN for the Webequie Supply Road Project and the Martin Falls Community Access Road Project IAs.

Information that may be applicable to the Ring of Fire area

Information or knowledge collected outside the area or at a larger scale may nevertheless be pertinent to the regional assessment, depending on final scope. General information or knowledge on impact assessment is available as follows:

Health Canada IA-specific Research:

(Please refer to response 4 for details on this initiative)

- Systemic reviews of sound levels on sleep disturbance, annoyance and stress-related health effects;
- Assessment of the relative contribution of traditional food consumption to nutrition, contaminant exposures and related health outcomes of First Nation children and youth in Canada;
- Effect of country food preparation on concentrations and bio-accessibility of mercury;

¹ Details available at: <https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health.html>

² Available at: <https://www.nwhu.on.ca/ourservices/PreparingForAnEmergency/Pages/Climate-Change-and-Health.aspx>

³ Indigenous Services Canada also funds First Nation community-designed and driven projects related to climate change adaptation in the Ring of Fire area.



- Master database of mercury and methylmercury levels in top country foods contributing to mercury exposure among Indigenous communities; and,
- Best practices related to the integration of sex- and gender-based analysis plus (SGBA+) in IA.

Health Canada Guidance for IAs:

Health Canada has published a series of guidance documents⁴ for evaluating the health impacts of major projects on the following topics:

- Human health risk assessment;
- Air quality;
- Water quality;
- Country foods;
- Noise; and,
- Radiological impacts.

Health Canada is developing guidance on methodological best practices in Health Impact Assessments of major projects under the IAA. This guidance will complement the Agency's practitioner guide on *Analyzing Health, Social and Economic Effects under the Impact Assessment Act*.

Other Health Canada Activities:

Health Canada participates in the development of guidelines for the protection of human health. Activities potentially relevant to the Ring of Fire area include:

- Providing human health-related guidance and advice to support an assessment of human health risks from multi-media exposure to chromium (III and VI) and methyl-mercury from potentially contaminating activities. The Department is currently collaborating with the Canadian Council of Ministers of the Environment to update the soil quality guidelines for chromium.
- Participating in the development of the Canadian Ambient Air Quality Standards as part of the Air Quality Management System, including in periodic reviews to enable continuous improvement in air quality. A process is underway to determine the need to update the standards for fine particulate matter (PM_{2.5}) for the year 2025.
- Establishing and updating the *Guidelines for Canadian Drinking Water Quality*, in collaboration with the Federal/Provincial/Territorial Committee on Drinking Water.

Health Canada is leading the development of a national assessment report on climate change-related risks to the health of Canadians and the health system, to be released in 2021: *Health of Canadians in a Changing Climate: Advancing our Knowledge for Action*. The report will include national-level information on issues that the assessment might examine, such as climate change impacts on health risks from wildfires, extreme weather events such as floods, droughts, and ice storms, and changes in food security, cultures and health systems of Indigenous Peoples.

Health Canada also participates in a variety of research initiatives, and attachment 1 provides a selection of research initiatives to illustrate the topics covered.

4. POLICIES, PROGRAMS OR INITIATIVES

List and summarize the past, current and planned policies, programs or initiatives of your department or agency that may be relevant to the regional assessment. Include an outline of related funding initiatives in this response and provide information on geographic locations, next steps and timing for the program/initiative.

Health Canada has relatively limited resources (and PHAC virtually none) to develop new information or programs in support of regional assessments under the IAA. The following existing programs or initiatives may yield specialist or expert information or knowledge relevant to the Ring of Fire regional assessment. Launched in 2019-20, Health Canada's Impact Assessment Research Fund provides annual funding for expert groups internal to the Department (and their partners) to address knowledge gaps and support novel scientific efforts that contribute to the health-related knowledge and expertise provided to reviewing bodies during IA processes. This initiative typically provides a maximum of \$40,000 per project per year, with an annual

⁴ Available at: <https://www.canada.ca/en/services/health/publications/healthy-living.html#a2.5>



maximum funding capacity of \$200,000. The Department solicits proposals in Q3/Q4 of the previous fiscal year, using internal network communications. Please refer to response 3 for a list of previously funded projects.

Health Canada's HealthADAPT program provides \$3 million of contribution funding (over three years) to 10 Canadian health sector projects at the local, regional, provincial and territorial levels. These projects aim to build health authority capacity by enabling them to undertake climate change and health risk assessments, develop plans, and implement adaptations. One of the 10 projects is located in the Ring of Fire area (see details in response to question 3 above). Health Canada also provides related, ongoing technical support through its participation in meetings, a community of practice, and development of resources and guidance.

Relevant funding opportunities related to health promotion and chronic disease prevention may be available through PHAC⁵.

5. Outline any additional responsibilities, information or knowledge and any partners or collaborations that have not been specified, above.

Health Canada participates in various federal government networks on Indigenous Consultation across the country, which aim to maintain relationships across federal departments, share knowledge and contribute to the whole-of-government approach to Indigenous consultation and engagement.

Health Canada is involved in interdepartmental discussions related to the assessment, monitoring and management of cumulative effects. In addition to participating in interdepartmental committees and the Ring of Fire regional assessment, Health Canada will also be providing advice in support of the cumulative effects assessment of the Alberta Foothills (development of iterative, comparative, geospatial and equity-informed assessment methodology), led by ECCC.

Health Canada has collaborated on the following research projects led by Indigenous Services Canada:

- First Nations Food, Nutrition and Environment Study (2008-2018); and,
- First Nations Food Environmental Health and Nutrition for Children and Youth (2020-2030).

Health Canada collaborated with Statistics Canada to collect and interpret information with a focus on nutrition and food insecurity in the 2004 and 2015 Canadian Community Health Surveys. Persons living in remote northern communities or in First Nation communities are often under-represented or not represented in the surveys' coverage. Additional studies and surveys (e.g., First Nations Food, Nutrition and Environment Study, Inuit Health Survey, Aboriginal Peoples Survey, First Nations Regional Health Survey) provide information on nutrition and food security, although data collection may not be regular or consistent. Data from these various sources are informative but may not be reflective of conditions specific to the Ring of Fire communities.

⁵ The current list of grant and contribution funding opportunities from PHAC are available at: <https://www.canada.ca/en/public-health/services/funding-opportunities/grant-contribution-funding-opportunities.html>

PART 2 – To contribute to the design of the regional assessment process and development of the terms of reference, please provide information or advice in relation to the items below.

1. POTENTIAL OUTCOMES OF THE REGIONAL ASSESSMENT

A health impact assessment (HIA) could contribute to the following outcomes of the regional assessment:

- A health baseline or community profile for future project IAs to compare against;
 - Priority determinants of health and sensitive pathways of effects identified (through community engagement);
 - Tailored health assessment criteria for use on future project-specific IAs in the Ring of Fire area; and,
 - Clear and meaningful environmental, social and economic triggers and actions that support adaptive management of cumulative effects.
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2. RELEVANT GEOGRAPHIC AND TEMPORAL BOUNDARIES

Health Canada recommends determining the spatial and temporal boundaries for the regional assessment through community engagement. However, as a starting point, the geographic boundaries may consider:

- Priority determinants of health including potential ecological, social and economic changes resulting from regional development;
- The range of human movements (e.g., migrations in or out of communities based on development pressures or opportunities and increased mobility), and the resulting effects on existing and future communities in the area; and,
- Development implications outside of the Ring of Fire area (e.g., proposal of transporting ore to a ferrochrome smelting facility in Sault St Marie). Although this secondary development may not be within the scope of the regional assessment, the acknowledgement may inform public health planning processes within the host communities.

Health Canada recommends the temporal boundaries consider:

- Historical legacies at the root of existing community health characteristics and that may influence the population health responses to future development in the region;
 - Likely scale of scenarios for development pressure in the region;
 - Common economic development cycles (i.e., initial rush, boom, bust); and,
 - Response time between development activities and population-level effects, which may extend beyond the operational timeframes of individual projects.
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3. FACTORS TO BE CONSIDERED IN THE REGIONAL ASSESSMENT AND THE SCOPE OF THOSE FACTORS

The ways in which the regional assessment considers **Indigenous peoples' worldview on health** is a key factor, which supports requirements under the IAA to consider Indigenous knowledge, and the Government of Canada's proposed approach to affirm and implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) under Bill C-15⁶. UNDRIP Article 24 states that:

"Indigenous peoples have the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals (...)" and "to the enjoyment of the highest attainable standard of physical and mental health."

The **capacity of Indigenous groups to participate** in the regional assessment and subsequent cumulative effects monitoring and management is critical. Health-related assessments or recommendations that are oriented towards or affecting Indigenous peoples should reflect their priorities. UNDRIP Article 23 states:

"Indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In particular, indigenous peoples have the right to be actively involved in developing and determining health, housing and other economic and social programmes affecting them and, as far as possible, to administer such programmes through their own institutions."

⁶ Bill C-15 is at the introduction and first reading stage of the legislative procedure, and is subject to change. The current version is available at: <https://parl.ca/DocumentViewer/en/43-2/bill/C-15/first-reading>



Early and ongoing engagement can be supported via an HIA (e.g., through an HIA steering committee). Sharing diverse perspectives and building relationships between the various participating groups is particularly important in the implementation of the regional assessment's outcomes.

An **equity focus** emphasizes the importance of not only assessing the collective effects on the health of the study population but also assessing the distribution of the health effects within this population. Indeed, an equity perspective assists in identifying how identity factors intersect with one another to influence health and well-being. The practice of Gender-based Analysis-plus (GBA+) offers a valuable tool through which to apply an equity lens to the assessment.

The assessment may also identify which activities are likely to leverage certain **health co-benefits** (e.g., Government of Canada sustainable development goals and targets, and efforts to 'build back better'⁷).

4. MEANS OF COMMUNICATION AND ENGAGEMENT THAT WOULD BEST FACILITATE PARTICIPATION OF YOUR DEPARTMENT OR AGENCY IN THE REGIONAL ASSESSMENT

Health Canada and PHAC will make available specialist or expert information or knowledge in its possession, similar to project IA processes. Means of engagement that would best facilitate Health Canada's participation include:

- Participation in existing Agency-led committees for general briefing on progress and strategic discussions;
- Participation in regular working level meetings with other federal departments for coordination and resolution on common issues;
- Contribution to focused working groups on environmental, social and economic issues that are linked to human health; and,
- Participation in public and Indigenous engagement activities.

Health Canada notes that an HIA would be well suited to achieve the desired outcomes and address the factors identified in the Part 2 responses above. The HIA process is heavily dependant on engagement with potentially affected communities, and Health Canada would be available to provide guidance to the Agency in the scoping, planning and implementation of an HIA.

5. INPUT OR ADVICE ON ANY OTHER ASPECT OF THE REGIONAL ASSESSMENT

The regional assessment should consider previous work completed and relationships built in the area (e.g., Ring of Fire Community Wellbeing Pilot Project⁸ under the Government of Canada's Strategic Partnerships Initiative program).

⁷ Details available at: <https://budget.gc.ca/fes-cca/2020/themes/building-back-better-rebatir-mieux-en.html>

⁸ Available at: <https://www.truecallingmedia.com/the-wellbeing-project>

ATTACHMENT 1

Health Canada's Healthy Environments and Consumer Safety Branch - Selection of research initiatives since 2010

To support broader internal collaboration, partnerships and knowledge translation and exchange objectives, the Office of Science Policy, Liaison and Coordination has published an internal (to Health Canada) annual compilation of Healthy Environments and Consumer Safety Branch research abstracts since 2010. The following excerpts summarize information on initiatives that may be relevant to the Ring of Fire regional assessment. Publications associated with some of these initiatives may be available or forthcoming. Further details may be obtained upon request.

- *Indoor air quality and the effects on children's respiratory health in First Nations reserves in the Sioux Lookout Zone*: This study evaluated Indoor Environmental Quality in houses of approximately 100 children living in four isolated communities in relation to respiratory health and related utilisation of health care services. This research identified simple home improvements or building interventions that may improve the respiratory health of children living in the homes. The findings may inform future, similar studies/interventions in remote First Nations reserves across Canada.
- *Updates to the Air Quality Health Index*: Designed for national usage, and currently based on urban areas only due to data availability on air pollution, the update will include data from rural areas.
- *Development of a national forest fire smoke PM_{2.5} exposure model based on fine particle concentrations from ground monitors, forest classification, remotely sensed fires, meteorology, and elevation.*
- *Health impact analysis of PM_{2.5} from wildfire smoke in Canada (2013-2015, 2017-2018)*: A retrospective analysis⁹ of air quality modelling to quantify human exposure to wildfire-PM_{2.5} and to estimate the associated health impacts.
- *The Canadian House Dust Study*: Characterization of residential exposures to metals and organics based on samples collected from 1025 homes in 13 cities.
- *Design of cost-effective drinking water surveys in the 21-st century*. This project is in preparation for anticipated future surveys and builds on multiple targeted surveys and two national surveys on drinking water to generate data used for the development of Guidelines for Canadian Drinking Water Quality.
- *National Biomonitoring Program under the Canadian Health Measures Survey Cycles 7-8 (2021-2024)*: This project includes a regional analysis of biomonitoring survey data to help relate exposures to regional or point sources of pollutants and/or sociodemographic or lifestyle factors unique to a region.
- *Cross-Canada Survey of Radon Concentrations in Homes (2009-2011)*.
- *Radon outreach campaign for Thunder Bay public health, Thunder Bay libraries and Nokiwin Tribal Council.*
- *The Canadian Total Diet Study* is an ongoing food surveillance program that monitors the concentrations of chemical contaminants in commercial foods¹⁰ that Canadians typically consume. The study results on the concentrations of the chemicals in the different food composites are publically available¹¹. Some study results are published in peer-reviewed scientific literature¹².
- *Economic analysis of climate change impacts on health and on the health system*: The analysis, impacts, methods and data identified in this project may inform economic cost-benefit analyses.

⁹ Available at: <https://pubmed.ncbi.nlm.nih.gov/32302851>

¹⁰ These activities are specific to commercial foods, which are subject to the provisions of the *Food and Drugs Act* and the *Food and Drug Regulations*.

¹¹ Available at: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/canadian-total-diet-study/concentration-contaminants-other-chemicals-food-composites.html>

¹² Available at: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/canadian-total-diet-study/list-publications-presentations.html>