

Submission to the Expert Panel

INCLUDING HEALTH IN ENVIRONMENTAL ASSESSMENT: INTEGRATION OF THE HEALTH IMPACT ASSESSMENT (HIA) FRAMEWORK

Lindsay C. McCallum, Ph.D. (Candidate) & Faiza Waheed, Ph.D.

In response to a request from the Expert Panel, following a presentation entitled “Including Health in Environmental Assessment”, delivered by Ms. Lindsay McCallum (Ph.D. Candidate) on November 9, 2016, in Toronto (see attached), the following is a formal submission that identifies ways to integrate health into Next-Generation EA processes, with a focus on sustainability. This submission is divided into key sections, including: (i) what is the issue?; (ii) how can we fix it?; (iii) HIA and sustainability; (iv) proposed solutions; and, (v) international examples.

What is the Issue?

Under the Canadian Environmental Assessment Act (CEAA, 2012), Environmental Assessment (EA) does not require a comprehensive evaluation of impacts to human health. When health is addressed, it is generally limited to chemical exposures evaluated through Human Health Risk Assessment (HHRA). Although HHRA is an appropriate and useful tool for determining toxicological risks to health, it limits the definition of health by focusing only on physical outcomes. The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1948). Although HHRA does look at chemical/physical outcomes, more needs to be done to evaluate the wider range of health determinants. The determinants of health are described as the range of factors that affect the health of individuals and communities including the physical environment, social and economic circumstances and a person’s individual characteristics and behaviours (Figure 1).

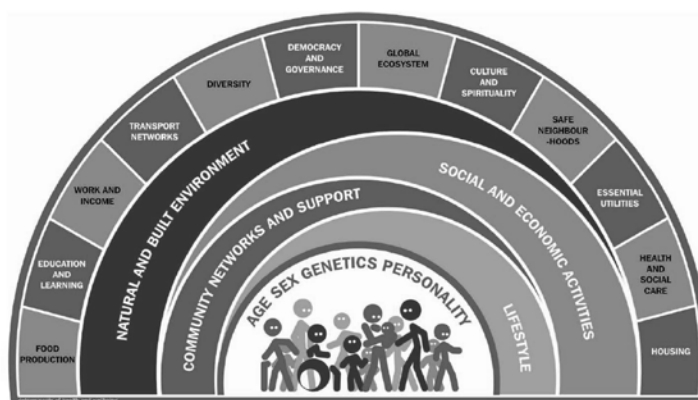


Figure 1 The Determinants of Health (modified from Dahlgren and Whitehead, 1991)

Further, although social and economic aspects are considered in an EA, they are not evaluated through a health lens. For example, the number of jobs created or the amount of reinvestment from a project may be discussed; however, these are not assessed in terms of positive and negative health outcomes.

How Can We Fix It?

Health can be integrated into the EA process using Health Impact Assessment (HIA) as a framework. The overall process required for HIA and EA are compatible with the same general steps being followed to identify, assess and mitigate potential effects (Figure 2).

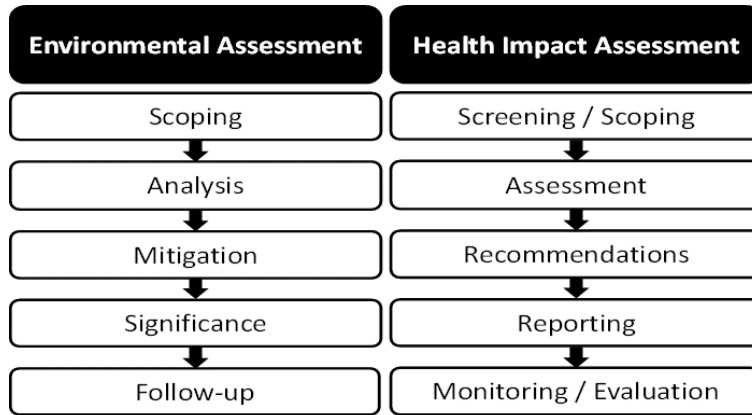


Figure 2 The HIA and EA Processes (McCallum, 2016)

Therefore, integrating an HIA framework within the EA process is very achievable. In addition, the data and information collected, applied and generated as part of the EA process can be fed into the HIA to allow for a streamlined process that avoids duplication and improves collaboration and transparency.

HIA and Sustainability

Sustainability has been identified as one of the core objectives for Next-Generation EA:

“All assessments should ensure the long term health of the environment and social values, and the equitable distribution of risks impacts and benefits” (Johnston, 2016).

This description of a sustainable EA process is directly aligned with the values and objectives of HIA. Specifically, the discussion of health including physical/environmental and social considerations, the distribution of effects and equity impacts, as well as the identification of negative and positive aspects of a proposal, are all key components of the HIA process. By adding HIA as a component of EA, it takes the EA process one step closer to the objective of reaching a more sustainable approach in Canada. Individual and community health and wellbeing are integral to ensuring that proposals are implemented in such a way that it maintains the health integrity of all Canadians. Without consideration of health, EA can never be truly sustainable.

The main goal of HIA is to assess potential positive and negative health effects resulting from proposed projects, policies and programs. Based on the results of the assessment, the HIA makes specific recommendations with the intention of enhancing positive outcomes and minimizing negative outcomes. In doing so, an HIA ensures that the proposal is more sustainable from the perspective of the health and well-being of Canadians now and in the future. Additionally, the inextricable link between health and the environment means that ecosystem health and human health should be considered together, rather than assessed in isolation.

Proposed Solution

The proposed solution for ensuring health is integrated into the EA process, aligning with the Next-Gen EA objective of sustainability, is to incorporate the HIA framework into EA. In order to achieve this, every EA should include a mandatory HIA Screening. This Screening should follow established HIA protocols (Example Tool: Figure 3), and at a minimum include:

- i. Screening of available proposal information to identify potential direct and indirect effects on human health (positive and negative);
 - o Whenever possible, screening should be conducted with relevant regulatory input (e.g., environmental health and/or public health experts)
- ii. Where effects may exist, vulnerable or at-risk populations should be identified;
- iii. In cases where there are potential health effects and possible vulnerable or at-risk groups, a full HIA should be completed consisting of the following steps: Scoping, Assessment, Recommendations, Reporting, Monitoring and Evaluation (Figure 4).

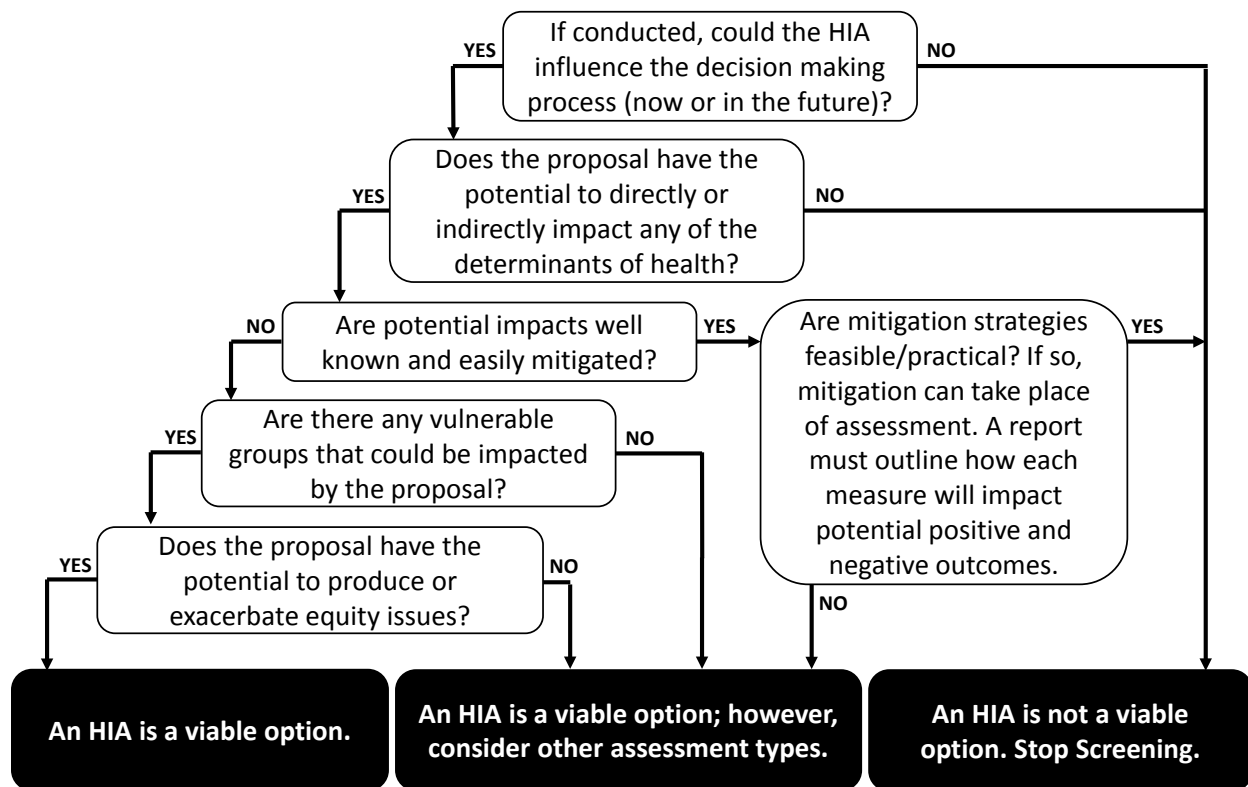


Figure 3 Example Tool: Initial HIA Screening (McCallum et al., 2016)

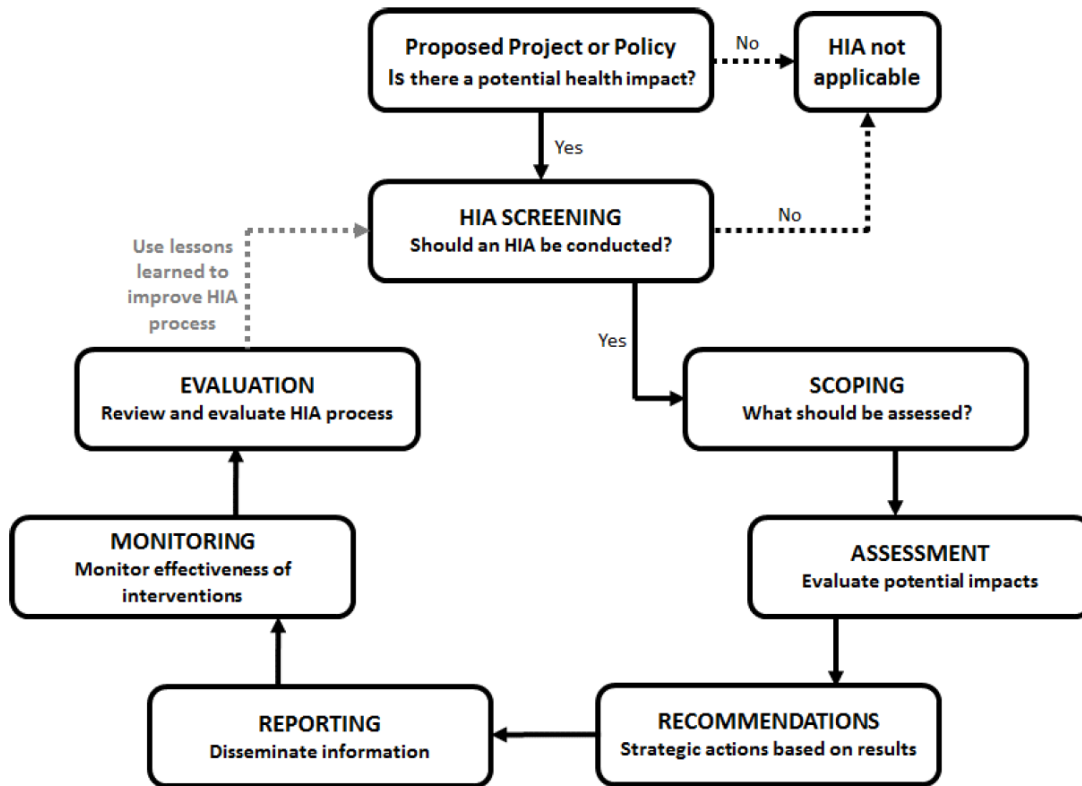


Figure 4 Steps of an HIA (McCallum et al., 2015)

The HIA should be completed as part of the EA process and should use tools and methods that are clear and transparent in their evaluation of effects. The assessment should also be carried out using the best available data and scientific evidence, and should include meaningful stakeholder engagement to inform the scoping and assessment processes. This can be achieved through various engagement activities (e.g., public meetings) to identify key issues that are of most concern from a health perspective and use this feedback to assist in scoping the HIA, where appropriate. Additionally, in cases where the EA is subject to a public comment period, the HIA should be included in that process so that individuals can review and provide feedback on the HIA. This will ensure that HIA is incorporated into EA in a way that aligns with another objective of Next-Gen EA, which is to ensure that:

“Meaningful participation is early, ongoing, accessible and dynamic. It occurs at all levels of assessment and has the ability to influence outcomes” (Johnston, 2016).

HIA in all Levels of Next-Gen EA

Another objective of Next-Gen EA is to have “integrated, tiered assessments starting at the strategic and regional levels” (Johnston, 2016). In order to ensure that health is included in each level of EA, including Strategic, Regional, and Project-level EA, an HIA screening should be conducted in all cases. For each type of EA, the HIA would have unique and specific goals and targets; with each level of assessment informing those below (Figure 5).

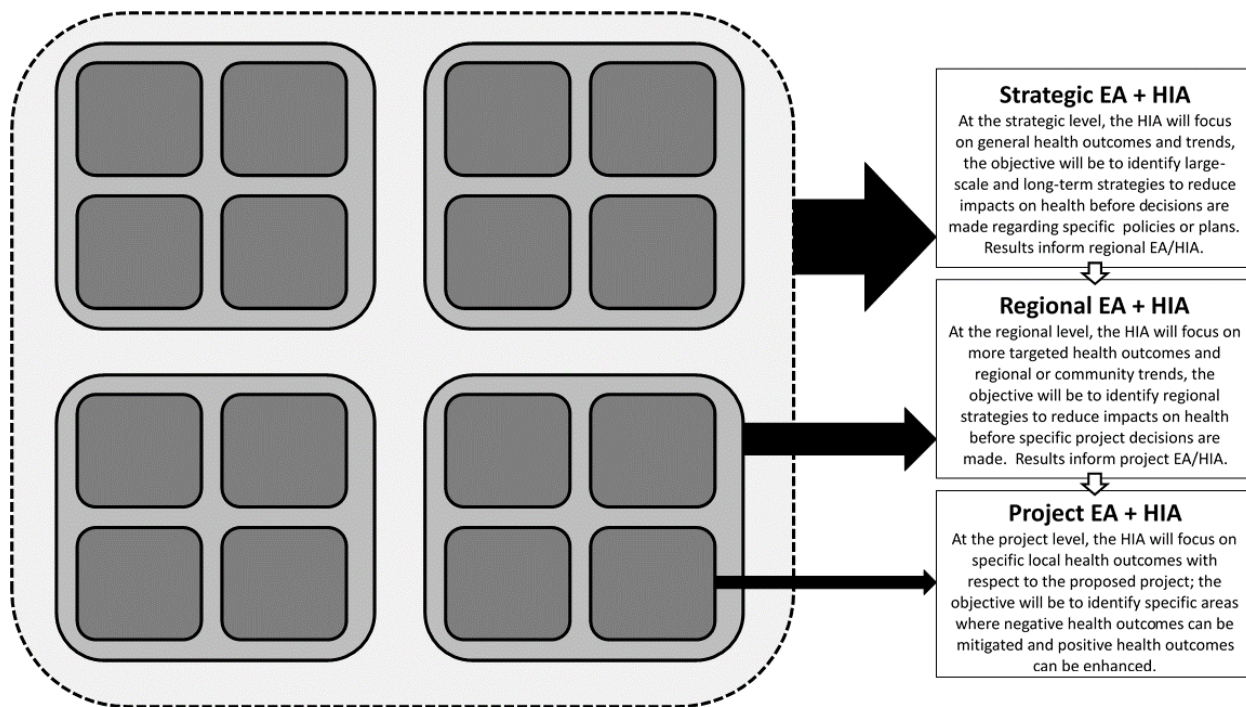


Figure 5 Structure of HIA as Part of Next-Gen EA Process

Examples of HIA in EA: A Foundation for Success

Currently, HIAs are used in many different countries and widely applied to projects in diverse sectors, such as transportation, housing, oil and gas, mining, and policy development. Although HIAs have been applied in several countries, they are most popular in the US, the UK, Australia and New Zealand. In these jurisdictions, HIAs are either carried out alone or as part of a larger assessment process. For example, in the UK, although there is no statutory requirement to carry out an HIA for Local Transportation Plans in the way that an EA is required, the Department for Transport’s Guidance on Local Transport Plans (Department for Transport, 2009) states that:

“Consideration of ‘Human Health’ is a legal requirement in a Strategic Environmental Assessment (SEA) and a health impact assessment (HIA) is an integral part of a SEA to identify and inform health issues in Plans. Undertaking an HIA should provide an evidence base to help the decision making process in developing an effective Local Transport Plan, and to mitigate the negative effects on health and well-being (whether physical and/or mental health).”

In the transportation sector alone, there have been more than 164 HIAs conducted on a variety of initiatives including transportation planning, road and bridge development, public transit, ports, airports, railroads and active transportation (Waheed et al., 2016).

In North America, HIAs have either been stand-alone or conducted as part of wider EA processes (e.g., Environmental Impact Statements (EIS)). Under the United States National Environmental Policy Act (NEPA), HIA has been implemented when a lead federal agency determines that the impacts to human health should be evaluated as part of an EIS process.

The purpose of NEPA is “to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man” (NEPA, 1969). Although the consideration of human health impacts is a required component of the EIS, it has been largely discounted in the past, prompting a requirement for a more dedicated and comprehensive process to address human health - an HIA.

In addition, resource development has promoted the use and application of HIA, particularly in Alaska. The purpose of the Alaska HIA program is to ensure that “*large-scale resource development projects are designed to maximize the positive health benefits and to minimize the negative health impacts to all Alaskans*” (Anderson et al., 2013). Currently, the State of Alaska does not require a formal HIA as part of its regulatory framework. However, the development of an HIA Toolkit to guide HIA efforts allows the State to include HIA as part of the NEPA Review/EIS process upon request from the lead federal agency. Under this program, several HIAs have been completed or are in progress for various projects including: transportation, mining, coal, hydro-electric and oil and gas (Anderson, 2011; Krieger and Anderson, 2014).

Specific examples where health and/or HIA has been included as part of an EA or other impact assessment process are provided below:

Example I: Transportation Planning

- **Approach:** Northumberland (Ontario) Local Transport Plan HIA was carried out alongside the EA process and utilized data from the EA process. This HIA analyzed the health and wellbeing implications of the proposed LTP’s goals, objectives and interventions, particularly to inequality/equity issues around provision and access to transport for rural and urban settlements.
- **Benefit / Outcome:** Recommendations from the HIA, such as use of measures to calm traffic, were adopted into the final Plan.

Example II: Oil Leasing

- **Approach:** An HIA was conducted as part of the EIS for oil leasing in the National Petroleum Reserve, Alaska. The Alaska Inter-Tribal Council, in cooperation with the North Slope Borough, worked with scientists from the Bureau of Land Management (BLM) to draft a fully integrated HIA including new health-focused mitigation measures (BLM, 2007). The HIA was approved by agency management in Washington, DC, subjected to internal agency reviews, and finally included in the EIS without any changes (Bhatia and Wernham, 2008).
- **Benefit / Outcome:** The outcome of including the HIA led to the addition of new mitigation measures to the EIS. These included regulatory changes to add monitoring of health indicators in case of adverse outcomes, and the requirement that the industry must identify and mitigate any possible health impacts for all development plans within the region.

Example III: Housing

- **Approach:** In San Francisco, California, an HIA was undertaken by the San Francisco Department of Public Health (SFDPH) on a proposal to demolish and redevelop rent-controlled housing as private condominiums (the Trinity Plaza Redevelopment). The HIA was undertaken as a part of the project’s EIA, to qualitatively assess the potential

impacts of demolition and displacement/relocation on the health of the community. The assessment corroborated community concerns and provided the San Francisco Department of City Planning (SFDCP) with evidence of potential adverse health impacts.

- **Benefit / Outcome:** The SFDCP officials used the SFDPH input to revise the scope of the EIA to include residential displacement and any indirect impacts on health (Bhatia and Wernham, 2008). A long-term impact of the HIA was that the City of San Francisco included analysis of residential displacement into EIAs on housing projects. In addition, City policies were developed requiring replacement of affordable housing lost during development (SFDCP 2008).

Example IV: Oil Drilling and Development

- **Approach:** A comprehensive HIA was carried out to evaluate potential health effects of a proposed oil drilling and development project in Hermosa Beach, California. The HIA was conducted alongside the Environmental Impact Report (EIR), which was a regulatory requirement of the project. The HIA used data and information from the EIR to facilitate a robust assessment of 18 different determinants of health and included consideration of proposed mitigation measures. Both reports underwent a public comment period.
- **Benefit / Outcome:** The HIA was used to inform the Hermosa Beach City Council and the community members who were voting on whether to allow the project to go ahead. The HIA produced recommendations wherever potential negative outcomes were found, and these recommendations were incorporated into a legally binding document that would be required if the project were to go forward.

Closing

There is a need for integrating all possible health effects into the EA process. The HIA framework provides a solid foundation for consideration of physical, social, economic and cultural aspects of health and well-being within the EA process. Using existing information and data from the various EA components for inclusion in the HIA will avoid duplication of effort and promote conservation of resources. Additionally, including health in EA will not only promote sustainability of the process, but also encourage sustainable planning and development within Canada.

To ensure that all determinants of health are considered within EA, an HIA screening should be conducted for all levels of EA (strategic, regional, project-level, etc.). This screening will identify potential health impacts (positive and negative) that could occur and identify whether an HIA should be conducted. Where HIA is warranted, the process should use the best available evidence and adopt clear, transparent methods and tools.

References

- Anderson, P., Yoder, S., Fogels, E., Krieger, G., & McLaughlin, J. (2013). The State of Alaska's early experience with institutionalization of health impact assessment. *International Journal Of Circumpolar Health*, 72. <http://dx.doi.org/10.3402/ijch.v72i0.22101>
- Anderson, P.J. (2011). Health Impact Assessment Point Thomson Project. State of Alaska HIA Program. Available at: <http://dhss.alaska.gov/dph/Epi/hia/Documents/PointThomsonCompletedHIA.pdf>
- Bhatia, R., Wernham, A. (2008). Integrating Human Health into Environmental Impact Assessment: An Unrealized Opportunity for Environmental Health and Justice. *Environmental Health Perspectives* 116:991–1000; <http://dx.doi.org/10.1289/ehp.11132>
- BLM (Bureau of Land Management). (2007). Northeast NPR—A Draft Supplemental IAP/EIS. Washington, DC: Department of the Interior Bureau of Land Management.
- CEAA. (2012). Canadian Environmental Assessment Act, 2012. S.C. 2012, c. 19, s. 52. Retrieved from <http://laws-lois.justice.gc.ca/PDF/C-15.21.pdf>
- Dahlgren, Goren and Whitehead, Margaret. (1991). Policies and strategies to promote social equity in health. Stockholm Institute for Future Studies.
- Department for Transport (2009). Guidance on Local Transport Plans. Available: <http://webarchive.nationalarchives.gov.uk/20110509101621/http://www.dft.gov.uk/adobepdf/165237/ltp-guidance.pdf>
- Johnston, A. (2016). Federal Environmental Assessment Reform Summit. Executive Summary. West Coast Environmental Law.
- Krieger, G. and Anderson, P.J. (2014). Health Impact Assessment for Proposed Coal Mine at Wishbone Hill, Matanuska-Susitna Borough Alaska. HIA Program. Available at: <http://dhss.alaska.gov/dph/Epi/hia/Documents/WishboneHillCompleteHIA.pdf>
- McCallum, L. C., Ollson, C. A., & Stefanovic, I. L. (2015). Advancing the practice of health impact assessment in Canada: Obstacles and opportunities. *Environmental Impact Assessment Review*, 55, 98–109. <http://dx.doi.org/10.1016/j.eiar.2015.07.007>
- McCallum, L. C., Ollson, C. A., & Stefanovic I. L. (2016). Development of a Health Impact Assessment Screening Tool: A Value vs. Investment Approach. *International Journal of Environmental Assessment Policy and Management*, 18(3). <http://dx.doi.org/10.1142/S1464333216500198>
- McCallum, L.C. (2016). Development and Application of an HIA Framework: Improvements and Alignment with the EA process in Canada. PhD. Thesis in the Department of Physical and Environmental Sciences. University of Toronto.
- NEPA (National Environmental Policy Act of 1969). (1969). Public Law 91-190, 42 U.S.C. 4321–4347.

SFDCP (San Francisco Department of City Planning) (2008). East SoMa Area Plan. San Francisco: San Francisco Department of City Planning. Available: http://sf-planning.org/sites/default/files/FileCenter/Documents/2107-East_SoMa_Area_Plan_DEC_08_Final_Adopted.pdf

Waheed, F., Ferguson, G.M., Ollson, C.A., MacLellan, J.I., McCallum, L.C., and Cole, D.C. (2016). Health Impact Assessment of Transportation Projects, Policies and Plans: A Systematic Scoping Review. To be submitted to Environmental Impact Assessment Review. Manuscript in preparation.

WHO (1948). Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948.