

**Air Quality and Health Index:
Potential partnerships between Environment Canada
& Canadian Museums
A Report to Environment Canada**

March 31, 2009

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1. Executive Summary:

In February of 2009, WorldViews Consulting was engaged by Environment Canada to conduct a study that would assess the potential of museums to help the Canadian public better understand the Air Quality Health Index (AQHI) and to integrate its use into the lives of citizens. Almost 50 professionals who work in or with museums participated in telephone conversations, conference calls, email exchanges and face-to-face meetings.

There was an enthusiastic response to the potential of working with Environment Canada, and possibly Health Canada, in developing public programs that would engage the public on matters of air quality and personal health decisions. It is important to point out that many museums are increasingly positioning themselves to address matters of contemporary relevance through their public programs. As a result, they generally want to see projects developed on the larger matter of public and personal health – and saw the value of the AQHI to be an important feedback loop that would help to make the public link to air quality vital in an ongoing way.

Those who participated in the consultation ranged widely from history museums to science centres to artists who work with community members.

2. Purpose of this Report:

The purpose of this study is to assess the potential for partnerships between Environment Canada and museums across the country. Specifically, EC wants to know whether and how to engage with museums in order to foster public engagement with their new Air Quality Health Index (AQHI).

The AQHI is the result of a collaborative partnership between EC and Health Canada. Comprised of three component parts (ground-level ozone, nitrogen dioxide and particulates), the AQHI provides Canadians with meaningful information that can help them to make decisions about keeping their activity level safe, especially when air quality is poor.

The AQHI is already being used in Environment Canada weather reports. However, it is believed that by having museums include the AQHI as a focus within their public program, there is potential to increase its frequency of use by the public. Accompanying such increased use is also the prospect of fostering greater awareness of relationship that human beings have to their environment – specifically the quality of air that we all breathe.

By contacting members of the museum community from coast to coast, WorldViews Consulting has attempted to gauge the level of interest within museums for creating collaborations with Environment Canada. It was important to understand and document the motivations of museums to enter into such collaborations. Being able

to clarify the common and separate goals of the various parties was considered essential as a foundation for future discussions about how collaborations might work. To this end, Environment Canada has expressed its interest in suggestions for collaborations that would involve regional or national strategies. In turn, it seemed essential to consult with a wide range of individual museums, provincial museum associations and with national associations serving cultural organizations.

3. Background

AQHI was developed through collaborative efforts between EC and Health Canada. The indicator is seen as an important information source for individuals and families across the country, as they make personal decisions about their activity levels during ‘bad air days’. EC has developed a public engagement strategy for the AQHI that is being rolled out through weather report networks and through their website.

WorldViews Consulting was approached by EC to conduct a feasibility study that would sketch the opportunities for partnerships across the Canadian museum community in ways that would feature the AQHI and engage Canadians in using the indicator. The study, as it progressed, identified the following assumptions about the motivations of various stakeholders:

a) EC and HC:

- to reduce the number of emergency room visits for acute respiratory problems
- to sensitize Canadians to the problems associated with poor air quality
- to empower Canadians to act so as to reduce potential respiratory problems

b) Museums, Science Centres and other ‘cultural workers’:

- to engage Canadians in reflecting on issues related to health, part of which involves ‘determinants of health’ (eg. air quality)
- to stimulate dialogue amongst Canadians about their health and how best to understand, mitigate and adapt to environmental risks
- to stimulate dialogue amongst Canadians about addressing societal causes of determinants of health that pose risks to everyone
- to connect historical situations related to community health to related contemporary realities.

4. Method of Information Collection

For this project, a number of strategies were employed to collect information that could answer the key questions that lie at the heart of this initiative.

Targeted Conversations:

It was important to consult with some of the gatekeepers in the Canadian museum community about their responses to the idea of collaborating with EC on the use of the AQHI. Specifically, these phone calls were with some of the leaders in the national and provincial museum associations, as well as selected staff members at some major museums and science centres. These conversations helped us to frame the broad-brush approach to engaging the sector about national/regional collaborative initiatives.

Conference Calls:

It was important to invite museum professionals from across the wide range of museum-types and discipline-specializations (eg. curators, educators, managers, directors, artists, scientists, exhibit developers, etc.) to participate in a series of roundtable conversations. By using a range of list-serves used by museum workers across Canada, interested people self-selected to join the discussion. List-serves used for this consultation included: Canadian Museum Association Listserve; Ontario Museum Association Listserve; British Columbia Museums Association Listserve. Beyond this, some provincial museum organizations don't have listserves, but do have distribution lists for their museums. This was used to help reach museums in Alberta, Saskatchewan, and Nova Scotia. In all, 6 conference calls were held over a period of eight days.

Email Exchanges:

For some people email was the best option for communicating on this project. This included collecting some specific ideas for project initiatives.

5. What we Heard:

General: In the period of consultation with museum professionals across the country, there was considerable enthusiasm for collaborating with Environment Canada. The focus of this enthusiasm was the common interest in addressing issues of human health. In recent years, the museum community has become increasingly committed to being as relevant as possible to individuals and groups within their communities. Cultural organizations are searching for ways to develop new relationships with their constituencies – relationships that are meaningful and based on two-way communications. The AQHI was seen as an excellent feed-back loop that both helps individuals to make better decisions that help protect their personal health, but also as a feedback-loop that helps to open up much larger discussions about the determinants of health. In fact, it was in the latter that most of the people we consulted saw the greatest potential. This is natural enough when one reflects on the motivations of the parties involved.

The museums we spoke with are already thinking about new initiatives to address such topics as community health, climate change, urban planning, healthy neighbourhoods, citizen engagement and so on. Many of the museums see that their collections and public programs can help cultivate deeper and broader perspectives on contemporary issues by adding historical, scientific and artistic lenses to the topics upon which they focus. They see the AQHI as an excellent means of opening up public dialogue that builds not only more conscious citizens, but also more involved citizens.

Having access to streaming AQHI data strikes a chord with individual members of the public who want to be able to restrict their exposure to environmental threats. It also has the advantage of leading immediately to other related issues, including

indoor air quality, sources of air pollution, water quality, food contaminants, food labeling and a host of other considerations. Museum professionals expressed a core desire to help facilitate community dialogue about determinants of health in ways that would have impacts on both individual decisions, as well as community responses to systemic health issues.

For this reason, it is essential that Environment Canada reflect on broadening its initial thinking about how best to strike public program partnerships with the museum community. When considering what will motivate museums, and through them the public, to engage in a partnership with EC, most museums want to use this opportunity to realize broader public engagement goals. And the people we spoke to believed that the AQHI would be a natural stepping stone to addressing larger questions of public health.

Ideas for the use of the AQHI:

There were many thoughts of how best to incorporate the AQHI into the public programming of museums, science centres and even historic sites. These included:

- A. Incorporate into existing exhibitions:
 - a. Many science centres already have exhibits that address issues of human health. An example is the Human Factor exhibit at the Royal Saskatchewan Museum, in Regina. One options is to create an exhibit on the AQHI, using a computer/internet link to the national database of AQHI readings, along with supportive material on how individuals could best use the AQHI to make different, and better, decisions about their activity level on poor air days. Most people consulted believed that the AQHI needed to be situated within a larger context that, at a minimum, examined both inside and outside air quality.
 - b. Develop a more extensive exhibit on the relationship between the health of the environment and the health of people. This would require framing the project as a larger initiative that would address both indoor and outdoor air quality, the health of our fresh-water sources and the well-being of soil (along with its impact on food). Such an approach would likely also track the relationships of our lifestyles and societal systems (eg. globalized commerce, transportation, food systems, etc.) to local determinants of health. Illustrating the issues of bad air historically was seen as important, since many improvements have been made over the past century – but these have to seen alongside other developments in global population growth, consumption patterns and so on. Another important component of this approach would be to identify how bad air can flow from some place upwind, and that a city's or industry's bad air will travel downwind, having impacts as it goes. This approach could take the form of a special exhibit that could be researched and developed through an organization like the Canadian Association of Science Centres, in conjunction with Environment Canada and Health Canada – and then either toured to museum and other sites or to be sole to these sites as permanent exhibits.

- c. Create a small display using the local AQHI reading, a list of advised behavioural responses for visitors, plus a list of ways that the museum site is committed to using the data. For one historic site, at Ruthven Park in Ontario, it was felt that they could commit to not cutting the grass if the AQHI was above a certain level. It was acknowledged that this could be an electronic display, with automatic data updating, or a simple written version of AQHI (eg. use a chalk board). Sites could also use strategies that use the AQHI, amongst other components, to highlight retrofits that the site is considering to lighten their pollution-generating activities (eg. retrofit with geothermal heating/cooling. The Manager of Ruthven Park identified a common conflict between preserving historical sites and providing clean inside air. This occurs because some historical sites that do not allow living plants, which could help to clean and moisten the air, but which also bring with them the potential of bug infestations. The public could enter into this discussion in interesting ways.
- d. Several organizations currently have ‘ecological footprint’ calculators that enable visitors to examine their own lifestyle and reflect on how they can act to reduce their footprints. The AQHI could be integrated into such displays.
- e. An important perspective was brought to these discussions by the Heating, Ventilation, Air Conditioning and Refrigeration Museum – which currently is an online museum. They felt that there is always a danger of demonizing the use of fossil fuels – and that a balanced approach needed to be taken. The HVACR museum has a great deal of information that will be useful in addressing both the challenges and opportunities related to air quality. It is important to feature how the HVAC industry is responding to the changing environments of climate, politics and consumption.
- f. There is already a temporary exhibit that is circulating, called “Earth’s Climate in the Balance” (developed by the Bruce County Museum in Ontario), and the AQHI could play a useful supplementary role in this exhibit.

B. Onsite Programming:

- a. There were many ideas for onsite programming. Some of these were scientific demonstrations on ‘air quality’, and the AQHI would be part of such a program. There were also suggestions for programs that would provide discounts to those who arrive via energy efficient modes of transportation – walking, public transit, bicycling, car-pooling, etc.. This ‘point of purchase’ approach creates a ‘learning opportunity’ in which visitors can be engaged in interesting ways.
- b. A community-based artist in Calgary who participated in the discussions brought an inspired view of both onsite and offsite programs. By using community theatre that invites members of the public into a dialogue about any number of potential issues, the public becomes part of a solutions-based approach to those issues. There are many community-based artists across the country who are generating novel ways of

informing and empowering community members about topics of health and lifestyle.

- c. The Royal Saskatchewan Museum has developed a Youth Council that could become involved in creating

C. Offsite Programs

It was interesting how many ideas in this category emerged to have museums begin to provide program services within workplaces – basically encouraging museums to expand their programming beyond the traditional ‘leisure-time’ context to address some of the cultural issues that are part of our work contexts.

- a. A community arts practitioner suggested that a program could be developed to aim at where people work. This could be both inside and outside work environment – and would need to have indoor and outdoor versions of the AQHI. Through short theatrical interventions, meaningful dialogue could be fostered amongst employees, leading to proposed solutions.
- b. It was suggested that the AQHI could be the whole or partial focus of a session at museum conferences, demonstrating how to engage the public in issues related to air quality.
- c. An apprenticeship training program, or mini-course, could be offered through museums as a service to industry that needs to encourage employees to be making smart decisions for themselves, but also to help air quality issues that are related to work environments.

D. Online Programs

Perhaps the most interesting concept raised through our consultations was that of the online ‘dashboard’. Some museums have created dashboards to profile what they consider important institutional information. Primarily, this has taken the form of such indicators as: New Artworks on View; Memberships; Attendance; and so on. But this idea was developed further through our discussions to include key environmental issues; health issues; issues related to social equity; and more. By featuring such indicators, a museum gains a better understanding of what the critical issues are within the community – and become less narrowly focused on the corporate issues of the museum. The AQHI was seen as a natural feedback loop in this strategy and would need to be accompanied by support materials that would help empower users.

6. **Precedents of partnerships between government departments and museums:**

There are many precedents of partnerships that have been struck between federal departments and the cultural community, including museums, science centres and community arts. Some of these include simple provision of funding to develop and deliver programs, while others involve more collaborative interactions, the sharing of information and so on. Here are some examples:

- a. **Reading the Museum** – This program was a collaboration between the Canadian Museums Association and the Centre for Literacy, funded by the National Literacy Secretariat. Reading the Museum ran from 1993 to 1999. Funding was

- provided to the Canadian Museum Association, which hired Lon Dubinsky as a coordinator of the national program. The concept was to encourage grass-roots approaches to addressing literacy challenges. In order to be considered for project funding, a museum had to establish a partnership with a local literacy group and jointly develop a program proposal that combined the assets of each organization to address literacy in a novel way. Up to \$7500 was available to each successful project proposal. Adults had to be included in the project proposals, but cross-generational projects were encouraged. Funds could be used for the development cost of program materials, for expenses incurred by learners, such as transportation, and for staff time for museum personnel and/or literacy educators. Over the course of this initiative, 34 projects were funded across the country. This collaboration was effective at building new capacities of both museums and literacy groups. See www.nald.ca/library/newsletter/rtn/newslet/archive.htm
- b. **Environmental Monitoring and Assessment Network** – Environment Canada has created a vast network of monitoring changes in ecosystems – from migratory patterns, the health of ecosystems and the dynamics of species interactions within an ecosystem. EMAN relies on partnerships with many organizations across the country, including museums. This program is effective for data-collecting purposes within the scientific mandate of EC, but also fosters involved citizens and creates powerful learning environment for students.
 - c. **Environment Canada has itself funded numerous projects** related to the museum community. First and foremost is the ongoing operation of the Biosphere, in Montreal. This is a significant public interface between the work of Environment Canada and the public. Two other instances of collaborations between Environment Canada and the museum community were with: 1) The BioDome, in Montreal – few details were available – and, 2) an exhibition on the environment that was housed in the CN Tower (again, few details were readily available). Environment Canada, from 2000 to about 2006, supported the work of the Working Group on Museums and Sustainable Communities – which developed workshops and resources for museum associations across the country which were interested in exploring the cultural dimensions of sustainability and how Canadian museums could help foster a ‘culture of sustainability’.
 - d. **Health Canada has collaborated with a variety of cultural organizations**, including the Biosphere, in 2003, on an exhibition that focused on water quality in the St. Lawrence River. One phase of this work examined water quality as it related to healthy habitat for fish, and a second phase examined water quality in relationship to safety for humans swimming in the river.
 - e. **The Canadian Heritage Information Network**, which is part of the Department of Canadian Heritage, has engaged in collaborative projects for many years. CHIN has developed many specialized skills and knowledge which they offer to museums, with a view to creating mutually beneficial projects. Digitizing collections is one manifestation of this work. CHIN provides technical experts who visit museums and train staff in the use of the technology, which enables museums to extend their own special knowledge. The Virtual Museums of Canada is one part of CHIN that has had a huge impact on how museums connect with Canadian publics. Community museums, in turn, have helped the federal department to achieve its national mandate to serve the public.

- f. **Young Canada Works** is a collaborative program in which the Canadian Museums Association manages over five million dollars in federal funding that goes to support students who apply to work in museums across the country.
- g. **The Nova Scotia Museum participates** in several collaborative projects with government. These variously include the federal government, the provincial government (the Nova Scotia Museum is a department within the provincial government). Currently they are working collaboratively with the feds, the province and the Mi'kmaq. Another collaborative relationship that involves the Nova Scotia Museum is between the Canadian Navy and the Maritime Museum – specifically in conducting extensive repairs to the aging wharves of the museum.
- h. **Further afield**, but an interesting instance of museums dealing with health issues, the Science Museum (London, England) has collaborated with Britain's Ministry of Health on a campaign related to "Measles Mumps Rubella Vaccines". Our contact at the Telus Science Centre in Edmonton told us about this exhibit in which the museum helped to collect public data about this vaccine and the controversy that surrounded it. See: www.sciencemuseum.org.uk/about_us/press_and_media/press_releases/2002/10/153.aspx?keywords=measles
- i. **"Psychology: Understanding Ourselves, Understanding Each Other"**, is an exhibit that illustrates another type of collaboration that seems germane here. This was a partnership between the Ontario Science Centre and the American Psychological Association. This exhibit was the product of expert knowledge on psychology, provided by the APA, and expert knowledge on engaging with the public, provided by the OSC. Such a partnership is one of the options related to the current focus on the Air Quality and Health Index.

7. Precedents of Museums Addressing Social Issues

There are a huge number of museum-based projects that have explored social issues, both in Canada, and around the world. There is even a new professional museum journal, "Museums and Social Issues", published by Left Coast Press, that helps to encourage museums to think more proactively about addressing social issues. A few examples are listed below:

- a. "A Question of Truth", reflecting on the role of science in societal notions of 'truth' – Ontario Science Centre
- b. "The Human Factor", an exhibit on sustainability – Royal Saskatchewan Museum
- c. "Odyssey of Light", exhibit on many sides of light, from illumination to pollution – Museum of Civilization (Quebec)
- d. "Massive Change", an exhibit about the challenges of sustainability – Bruce Mau Design Studio, with the Vancouver Art Gallery
- e. "Race: Are we so Different?", an exhibit exploring the social and scientific dimensions of 'race' - Science Museum of Minnesota
- f. "Without Sanctuary: Lynching Photography in America", and exhibit using photographs of lynching to stimulate public reflection and dialogue about prejudice – Andy Warhol Museum
- g. "Climate Change: The Threat to Life and A New Energy Future", American Museum of Natural History

8. Recommendations:

Environment Canada has expressed a desire for recommendations that would address the potential of regional or national approaches to furthering the public engagement with the AQHI. We think this is prudent.

Through our conversations, it is clear that there is interest at the level of front-line museums in participating in a collaborative initiative that would see EC providing both financial inputs and expert information to the museum community. In turn, museums can provide a wide range of approaches to public programming. There are clearly regional differences across the country in terms of how air quality is impacting Canadians. Therefore we would suggest that a set of regional strategy be explored, and this would best be accomplished through the provincial museum organizations. Our discussions were most in-depth with the Alberta Museums Association, the Ontario Museum Association and the Nova Scotia Museum. In each of these cases, there was enthusiasm to develop a mechanism that would be appropriate for engaging their local constituencies.

We also have had conversations with both the Canadian Association of Science Centres and the Canadian Museum Association. Both have expressed an interest in discussing details of how best to move this initiative forward. Since there are few details currently available about what EC would bring to the table, the next step requires some discussions that flesh out this matter in more detail.

One general proposal that has been offered up by the Canadian Association of Science Centres is for EC to contract CASC to conceive and build an exhibit that could either travel across the country, or be available for purchase as a part of the permanent exhibit of participating institutions. This has obvious advantages because the nature of the product could be negotiated in advance so that EC was aware of what they were funding from the beginning of the project.

A second model is to work with either the CMA or CASC to develop a program that would provide funds to museums across the country so that they could develop initiatives that made sense to them for their communities. As was the case with the “Reading the Museum” project, this could involve any museum that wants to apply to first establish a partnership with a local public health organization, with whom they could generate their project proposal, including specifying individual and community outcomes.

A third model would be to begin a pilot project in which EC, potentially in collaboration with Health Canada, would work with the three provincial organizations that expressed keen interest in the AQHI initiative, to develop a mechanism to brainstorm and develop new ideas for engaging the local communities on matters related to environment and health. This approach would benefit from the awareness that local provincial organizations have of the strengths and limitations of the front-line museums and approach them in ways that would help to generate successful outcomes.

Overall, we strongly recommend that EC provides the opportunity for the museum community to generate novel ways to situate the AQHI within the broader framework of community health. This approach is in keeping with the transformations that are currently occurring within the museum community and offers the best potential for engaging the public in ways that lead to a more aware and motivated citizenry.

Appendix 1:

People who participated in the consultation process:

- i. Wendy Aitkens, Galt Museum & Archives, Lethbridge, AB
- ii. Chris Bagley, Manager of Public Programs, Black Creek Pioneer Village, ON
- iii. Therese Baribeau, Biosphere, Montreal
- iv. James Benson, Prince Albert Museums, Sask
- v. Louise Julie Bertrand, Head of Exhibitions, Montreal Science Centre
- vi. Cathy Blackburn, Ontario Museums Association
- vii. Tracy Calogheros, Exploration Place, Prince George, BC
- viii. David Christianson, Manager of Collections, Nova Scotia Museum.
- ix. Valerie Collins, Telus World of Science
- x. Lon Dubinsky, past Director of 'Reading the Museum', CMA
- xi. Kevin Fassett, Biosphere, Montreal
- xii. CJ Fleury, artist, Wakefield, QC
- xiii. Amanda Gibbs, Director of Audience Engagement, Vancouver Museum
- xiv. Helen Graves, Cdn Museum of Science and Technology, Ottawa
- xv. Darryl Gray, Manager of Education, Toronto Region Conservation Authority
- xvi. Marilyn Havelka, Ruthven Park NHS, Ontario
- xvii. Anne Hayward, Alberta Museums Ass'n
- xxviii. Bruce Henbest, Upper Canada Village, Morrisburg, ON
- xix. John Hennigar-Shuh, Nova Scotia Museums
- xx. Robert Janes, Past Director of Glenbow, cultural mentor
- xxi. Irene Kerr, Director, Museum of the Highwood, Alberta
- xxii. Elizabeth Kidd, Roundhouse Community Arts Centre, Vancouver
- xxiii. Elizabeth Kilvert, Environment Canada
- xxiv. David Klatt, Director, Western Development Museum, Saskatchewan
- xxv. Kim Louagie, Doon Heritage Cross Roads, Kitchener, ON
- xxvi. Janet Maltby, Manager, Nova Scotia Museum of Natural History;
- xxvii. Brian Masschaele, Director of Community & Cultural Services, Elgin County, On
- xxviii. Carole Mayer, UBC Museum of Anthropology
- xxix. John McAvitiiy, Canadian Museum Association
- xxx. Gillian McIntyre, Coordinator of Adult Programs, Art Gallery of Ontario
- xxxi. Laurel McIvor, Nova Scotia Museum of Natural History
- xxxii. Hooley McLaughlan, Ontario Science Centre, ON
- xxxiii. Cathy Molloy, Markham Museum, ON
- xxxiv. Lissa Morotti, Biosphere
- xxxv. Kate Oxley, Ontario Ministry of Culture
- xxxvi. Carla Powell, Manager, Atlas Coal Mine Museum, East Coulee, AB
- xxxvii. Monty Reid, Director of Exhibitions, Canadian Museum of Nature
- xxxviii. Kim Reinhardt, Manager, Maritime Museum of the Atlantic;
- xxxix. Paul Robertson, Museum of Health Care, Kingston, ON
- xl. Tracy Ross, Cdn Assn of Science Centres, Ottawa
- xli. Brenda Sherring, Executive Director, Museums Association of Saskatchewan
- xlii. Ron Shuker, HVACR Museum
- xliii. Mariette Sluyter, Foundation Lab, Calgary
- xliv. Glenn Sutter, Royal Saskatchewan Museum, Regina
- xl. Norman Tresswell, Maritime Museum of BC

xlvi. Ian Walker, Workers Arts & Heritage Centre, Hamilton