Assessing the Health of Communities:

Indicator Projects and Their Impacts

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MAIN RESEARCH AND POLICY FINDINGS

There remains a lack of systematic validation and use of community-level indicators of health and quality of life. There appear to be no consistent standards for defining success for a given indicator.

There is a clear need for a multidimensional model of health that has potential for a comprehensive "mapping", linking and assessment of a host of community-level indicators of health and quality of life.

Even within a given "category" (i.e., livability) and "element" (green space/open space) one finds a host of diverse indicators in use. There is a need for more consistent and coherent construct validation of specific aspects of community health.

Many communities/decision makers are predisposed toward using community-level indicators in policy and practice decisions. There is an evident need for development of practical and technical supportive resources. A sufficient number of projects exist across Canada so as to allow for potential sharing of resources and contrasting/comparing indicators across jurisdictions.

Most reviewed projects were focussed on sustainability/sustainable development or quality of life. Canadian projects tend to focus more on quality of life and population/public health issues relative to international projects. Most Canadian projects are relatively well established (i.e., > 3 years).

Many Canadian projects are focussed on the city-level. A regional-level focus is more prevalent in Canada. Most projects are driven by one organization with relatively few broad collaborative efforts. Canadian projects were led by government, NGOs and health regions.

The number of categories addressed ranged from 6 to 13 for Canadian projects. The mode was 9 categories addressed. The most commonly addressed categories were Livability, Conviviality, Prosperity, and Equity. Only 2 categories were addressed by less than one half of projects in Canada – Positive Health/Quality of Life and Mastery/Self-Esteem/Coherence. Morbidity/Disability and Mortality fall into 8th and 9th place based on the number of projects addressing them.

In Canada, the mostly commonly measured elements of community health are air/water quality, waste production, safety/security, housing (affordability), commitment to public services, economic disparity, unemployment, educational attainment and negative health. Least commonly measured elements of community health are renewable resources, local production, soil or food contamination, walkability, smoke-free spaces, noise pollution, discrimination, quality of employment, early child development, life-long learning, citizen action and life satisfaction.

Nineteen percent of indicators dealt with: prevalence, incidence of diseases, health-system performance, death rates, crime, land coverage, education attained, substance use, economic diversity. Most common sources of data were government statistics, health ministries, or non-health ministries.

The topics seen priorities that currently do not have indicators included the environment, social issues, economy, health and health system and governance. Identified reasons for current gaps were difficulty in obtaining and measuring the data and the difficulty in choosing indicators that apply to across jurisdictions. Time and money was also a common reason for gaps in indicator projects.

EXECUTIVE SUMMARY

Government and non-governmental organizations across Canada and elsewhere are seeking to develop better community-level measures of health and quality-of-life and. There are increasing possibilities for such measures to be routinely collected through a variety of local, provincial and national strategies including the National Population Health Survey and the Canadian Community Health Survey.

Since the focus on "social indicators" in the 1960s, the past two decades have experienced a resurgence of work around the world on indicators that measure health and quality-of-life. Despite this resurgence, assessing the "health of communities" presents a significant challenge. Little information is being systematically collected on the role of "indicators of the health of communities" and their relations to health, well being and quality-of-life of citizens in a region.

Based on some previous work on the Canadian Community Health Survey several questions of interest were identified. What initiatives have been undertaken to measure the health of communities, in Canada and in other countries, and what measures and approaches have been used? How are community-level health indicators presently being incorporated into policy and program decision making? What lessons for policy-making and program planning can be learned from examining the collection of community health indicators? These questions were central to our research and to this report.

Our research should be envisioned as part of a multi-stage process for creating valid, community-level indicators of health and quality-of-life in Canada. This includes: a clear, consensus view of the "*characteristics*" of "*community*" health: the selection and validation of concrete indicators for each characteristic; and the development of "*standards*" or target for each identified characteristic. Our project was designed to address the first stage of this process. Our research is based on an existing conceptual framework of characteristics of the health of communities, the "Indicators That Count" framework developed by Hancock et al. (1998 and 1999). The framework presents a logical progression from inputs to processes of change to outputs. The inputs are determinants of health. Next, education and governance are related to processes-of-change which underpin community health. Finally, population health outcomes include measures of both positive health and negative health. For the purposes of our research, we refer to factors such as Sustainability, Viability, Livability, etc. as "categories". The sub-levels within categories are referred to as "elements" (e.g., energy use, water consumption, etc.).

Our research involved four strategies: 1) a comprehensive review of indicator reports from around the world (May-September 2001); 2) a web-based survey of people involved in Canadian indicator projects (July-September 2002); 3) telephone interviews of a subset of people involved in Canadian projects (August-September 2002); and 4) focus groups (February 2002). We found the following main findings.

There remains a lack of systematic validation and use of community-level indicators of health and quality of life. There appear to be no consistent standards for defining success for a given indicator. There is a clear need for a multidimensional model of health that has potential for a comprehensive "mapping", linking and assessment of a host of community-level indicators of health and quality of life. Even within a given "category" (i.e., livability) and "element" (green space/open space) one finds a host of diverse indicators in use. There is a need for more consistent and coherent construct validation of specific aspects of community health.

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sufficient number of projects exist across Canada so as to allow for potential sharing of resources and contrasting/comparing indicators across jurisdictions.

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The number of categories addressed ranged from 6 to 13 for Canadian projects. The mode was 9 categories addressed. The most commonly addressed categories were Livability, Conviviality, Prosperity, and Equity. Only 2 categories were addressed by less than one half of projects in Canada – Positive Health/Quality of Life and Mastery/Self-Esteem/Coherence. Morbidity/Disability and Mortality fall into 8th and 9th place based on the number of projects addressing them.

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The present results provide a useful overview of the characteristics of work being done on the measurement and conceptualization of community-level indicators of health and quality of life. They also organize the identified characteristics by using the Hancock et al. framework. Finally, they provide initial insights into perceived reasons for gaps in the "coverage" of potential indicators, the perceived impact of indicator projects, and the reported needs for improving the measurement and conceptualization of community-level indicators of health and quality of life in Canada.

We believe these results have several important implications for future research in this area. We believe that there are five types of relevant research that warrant further attention and future research. These are 1) conceptual, 2) needs assessment, 3) tool development, 4) implementation and 5) intervention outcome research. **Conceptual** research is needed to better articulate the key characteristics of interest as they relate to community health. We need to better understand how Canadians conceptualize health and quality of life at a supra-individual. We also need research on the values underlying these perceptions and their implications for program and policy development. **Needs assessment** research should involve five aspects: identification of users and uses of community-level indicators; better description of target populations and service

environments; more complete description of problems and potential solutions); assessment of the relative importance and nature of specific needs; and communication of these needs to decision makers and relevant audiences. **Tool development** is needed to develop, validate and test new ways of measuring community-level indicators. At present, sufficient tools do not exist or they are poorly validated and not rigorously or widely used. **Implementation research** is needed to examine the factors influencing the successful execution of indicator projects. Many project are developed with the intent of fostering change in a given jurisdiction. If they "fail", it is often difficult to ascertain if they were provided sufficient resources (e.g., time, people, money) so as to be successful. **Intervention outcome research** is needed. Many indicator projects are developed with the goal of launching some form of "intervention" and linking indicators of "community health" to important outcomes such as changes in health behaviours, health status and use of health or social services. At present, we lack sufficient knowledge to say which interventions are effective and to elucidate the causal pathways between community-level factors and the outcomes of interest.

Our report is based on a stage approach to better articulating criteria for stating and measuring community-level indicators as they relate to community health. We argue that any criteria for measuring community-level indicators must consider both the objects of interests for an initiative and the "standards of acceptability" that represent the "definitions of success" associated with specific indicators of the process, impact and outcomes of a given effort. Our present work addresses only the first part of this important process. There is a need for an organized program of research that would flesh out the remainder of this suggested process. More specifically, we would benefit greatly from creating a several demonstration sites across Canada (e.g., Federation of Canadian Municipalities projects) that would collect a set of common indicators that could be validated and then judged against agreed upon common standards of acceptability. The present results and our methods used provide a clear sense of the policy actors engaged in the present work. The project team engaged a host of policy makers and decision leaders during the data collection including representatives of local, municipal, regional, provincial and federal governments, and relevant non-governmental organizations. Policy actors were involved in providing documents and reports, and as participants in the survey and interviews. The present results promise to be of value and interest to each of these constituencies.

Moving forward on efforts toward greater use of community-level indicators in policy and practice domains demands a significant change in behaviours of key players. There is an opportunity to create a process of change that would contribute toward learning and capacity building among community and government partners and researchers. Our results suggest that work remains to be done around improving the knowledge and values of key constituencies as they relate to community-level indicators. There is some evidence of growing enthusiasm for their use but it clear that we do not have a widespread disposition toward use of such indicators in a systematic manner. Interested individuals, groups and communities must be enabled to act on their motive toward using community-level indicators by improving research skills and increasing availability and accessibility of supportive resources. There is a need to remove organizational, structural, economic and cultural barriers to use of these indicators in research, policy and practice. Finally, policy makers, researchers and practitioners who choose to use community-level indicators should be rewarded for doing so. At present, it unclear as to what incentives exist for such groups to use community-level indicators.

Our research directly addresses the aims of the CPHI by advancing our understanding of a crucial aspect of the determinants of health of Canadians (i.e., community health). It provides new knowledge that will enhance decision-makers ability to articulate policy options that improve population health and reduce health inequalities. We believe that the present research makes a contribution on conceptual, methodological and applied levels.

ACKNOWLEDGEMENTS

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1. RESEARCH PROBLEM/CONTEXT

"A population is simply an aggregation of individuals, a community is not" (Shiell & Hawe, 1996)

Government and non-governmental organizations across Canada and elsewhere are seeking to develop better community-level measures of health, quality-of-life and well-being. There are increasing possibilities for such measures to be routinely collected through a variety of local, provincial and national strategies including the National Population Health Survey and the Canadian Community Health Survey.

It is necessary to begin by defining the concept of "community." For the purposes of measuring health, quality-of-life and well-being of citizens in general, it is useful to consider the "spatial" community (Hancock et al., 1998 and 1999). Spatial communities are defined by geographic boundaries, although spatial communities may overlap, and individuals may live in and have an affinity for multiple spatial communities at a given time. On the other hand, "non-spatial" communities are based on affinity (e.g., ethnic or racial groups, socio-economic groups) rather than geography, and may transcend, overlap with and/or be contained within spatial boundaries of one form or another.

The concept of measuring health at a community level must also be distinguished in several ways. The health of a community is related to, but distinct from either single or aggregate measures of the health of individuals within a community. Community health status, like population health status, has generally been considered to be the aggregate of individual health, disease and disability rates, increasingly combined with an aggregate of self-reported health, personal behaviours and environmental, social and economic determinants of health. This is a step forward but such an approach is still insufficient to capture the full spectrum of components of community health and their interactions.

Since the focus on "social indicators" in the 1960s, the past two decades have experienced a resurgence of work around the world on indicators that measure health, quality-of-life, well-being. Despite this resurgence, assessing the "health of communities" nevertheless presents a significant challenge. At the present time, little information is being systematically collected on the role of "indicators of the health of communities" and their relations to the health, well being and quality-of-life of citizens in a given community or region.

Based on some previous work on the Canadian Community Health Survey Frankish (1999), several questions of interest were identified. What initiatives have been undertaken to measure the health of communities, in Canada and in other countries, and what measures and approaches have been used? How are community-level health indicators presently being incorporated into policy and program decision making through shared responsibility and collaborative actions across sectors? What lessons for policy making and program planning can be learned from examining the collection of community health indicators in Canada and elsewhere? These questions were central to our research and to this report.

Our research should be envisioned as part of a multi-stage process for creating valid, community-level indicators of health and quality-of-life in Canada. This includes: a clear, consensus view of the "*characteristics*" of "*community*" health: the selection and validation of concrete indicators for each characteristic; and the development of "*standards*" or target for each identified characteristic. Our project was designed to address the first stage of this process.

2. METHODS

Our research is based on an existing conceptual framework of characteristics of the health of communities, the "Indicators That Count" framework (henceforth termed only as the

"framework") developed by Hancock et al. (1998 and 1999) (see Figure 1). The framework presents a logical progression from inputs to processes of change to outputs. The inputs are determinants of health (environmental viability, liveable built environments, community conviviality, social equity and economic adequacy). Next, education and governance are related to processes-of-change which underpin community health. Finally, population health outcomes include measures of both positive health (e.g., quality-of-life) and negative health (e.g., disability/morbidity/mortality, functional health measures). For the purposes of our research, we refer to Sustainability, Viability, Livability, etc. as "categories" while the sub-levels within these categories are referred to as "elements" (e.g., energy use, water consumption, etc.).

Figure 1: Indicator Categories and Elements of the "Indicator That Count" Framework

DETERMINANTS	**Conviviality**	**Governance**
	Family safety and security	Voluntarism/associational life
Sustainability	Sense of neighbourhood/place	Citizen action/civicness
Energy use	Social support networks	Human and civil rights
Water consumption	Charitable donations	Voter turnout
Renewable resource consumption	Commitment to public services	Perception of political leaders
Waste production and reduction	Demographics	and government services
Local production of resources		Healthy public policy
Land use (allocation of use)	**Equity**	
Ecosystem health	Economic disparity	**HEALTH STATUS**
Ecological footprint	Housing affordability	
	Discrimination and exclusion	**Positive Health and Quality of Life**
Viability	Access to power and control	Well-being/self-reported health
Air quality		Life satisfaction
Water quality	**Prosperity**	Happiness
Toxics production and use	Diverse economy	
Soil contamination	Local control of businesses	**Mastery/Self-esteem/Coherence**
Food chain contamination	Employment/unemployment	
	Quality of employment	**Health-promoting Behaviours**
Livability	Traditional economic activity	
Housing quality	indicators	**Negative Health**
Density and land use in the built		Stress/anxiety
environment	**PROCESSES**	Other morbidity/disability measures
Community safety and security		Health utility index
Transportation/automobile	**Education**	
dominance	Early childhood development	**Mortality**
Walkability	Education attainment/school quality	Overall mortality rate
Green/open space	Adult literacy	Infant mortality rate
Smoke-free space	Lifelong learning	Suicide rate
Noise pollution		Life expectancy

Our research involved four strategies: 1) a comprehensive review of indicator reports from around the world (May-September 2001); 2) a web-based survey of people involved in Canadian indicator projects (July-September 2002); 3) telephone interviews of a subset of people involved in Canadian projects (August-September 2002); and 4) focus groups (February 2002).

Review of Indicator Reports. A set of inclusion/exclusion criteria were used to determine which indicator projects would be reviewed. A project was included if it had either a draft set of indicators, or a set of indicators that had already been measured. A project was included if it focused on "spatial" communities with geographic boundaries; therefore projects that were based in communities of affinity were excluded. Projects based in "communities" such as cities or regions were included, while projects were excluded if they were based in neighborhoods (too small a unit to be useful), or provinces, states, and nations (too large to be considered "community"). A project was included if it had an explicitly stated focus on the "health of the community", or if it addressed more than one category of the framework. Finally, only projects that had indicator reports in English were reviewed. Projects were identified by word of mouth from contacts in the health promotion field, or by using the internet search engine "Google" using a combination of terms such as community, sustainability, or quality-of-life indicators. In some cases, documents were available for downloading while others were ordered through forms or via the telephone. We realize that there were more projects than what was reviewed in our research. An attempt was made to obtain reports from a broad cross section of countries and concepts such as quality-of-life, sustainability, etc. The reports were reviewed for basic information (e.g., country/continent of focus, locality such as city or region, years in existence, names and contact information), and for a list of indicators, and their data sources, used in the projects. The indicators culled were then coded into the categories and elements of the

framework. Although only indicator reports in English were reviewed, a special effort was made to find indicator projects in the province of Quϑbec. In addition to the internet search and word of mouth, we also e-mailed the coordinators of Healthy Cities projects in Quebec (identified on the Quebec Network of Healthy Cities and Towns web site) to ask if any indicator projects were being done or had been done in their communities. Only one project met the inclusion criteria. The indicators were gleaned from this project but an interview could not be secured.

Web-Based Survey. We were interested in how people in indicator projects conceptualize their set of indicators as fitting into the framework. In addition, we were interested in any gaps in indicators and the reasons for these gaps, as well as the level of (dis)agreement about statements about possible results of the indicator projects. This was achieved by way of a web-based survey sent to people involved in indicator projects in Canada, as identified in our indicator document review (see Appendix 1 for a copy of the survey). Where multiple cities were involved in a project, the survey was sent to a contact in each city, giving a total of 56 contacts for 37 projects. A letter of invitation was sent via e-mail, and was followed up by 3 e-mail reminders.

Telephone Interviews. A subset of respondents to the web survey (n=25) who agreed to be contacted again and 2 other people who did not complete the survey were interviewed over the telephone. The interview explored three questions: 1) the influence of indicator projects on communities; 2) the factors that affected the projects' influence in their communities; and 3) the changes needed in order for their projects to have a greater influence. All the interviews were audio taped and transcribed.

Focus Groups. Focus groups were conducted in four cities (Vancouver, Edmonton, Toronto, Halifax) to explore the concept of developing a "guidebook" to aid in the indicator process. A resource listing of existing guidebooks was developed with the help of hired consultants.

3. RESEARCH FINDINGS

3.1 <u>Review of Indicator Reports</u>

The indicator reports of 117 projects were reviewed to extract the indicators and classify them into the framework. Of the 117 projects reviewed, 37 were Canadian (32%). The other projects were from over 20 countries around the world (see Appendix 2 for a complete list of projects). A total of 6,646 indicators were culled from the 117 projects.

Concept Focus of the Indicator Projects. A main concept focus was identified in 79% of the projects. Almost one half of the 117 indicator projects (47%) was based on either the concept of sustainability/sustainable development or the concept of quality-of-life (see Appendix 3, Table 1). A greater proportion of Canadian projects (32%) focused on quality-of-life compared to the proportion of international projects (19%). In addition, a greater proportion of Canadian projects (24%) focused on population/public health compared to the proportion of international projects (13%).

Duration of Projects. The duration of the 117 projects ranged from 1 year to 17 years (see Appendix 3, Table 2). The mode (most common) of the duration is 4-6 years, in Canada (30%) and internationally (31%). One quarter of the 117 projects have existed for 7 or more years.

Locality. About one half of the indicator projects in Canada (49%) and internationally (53%) focused on the city-level (see Appendix 3, Table 3). A regional-level focus is more prevalent in Canada (32%) than internationally (18%) while the reverse is true for counties (20% internationally, 3% for Canada).

Leader Organizations Involved. A "leader organization" is any group that has a large share in overseeing and implementing an indicator project. These leader organizations were identified in the indicator reports, and could be government, a grassroots organization, a university, etc. The

number of leader organizations reflects collaboration between groups. The number of leader organizations identified range from 1 to 5 (see Appendix 3, Table 4). In most indicator projects, both in Canada (78%) and internationally (88%), only one leader organization was identified.

A variety of types of leader organizations are involved in indicator projects (see Appendix 3, Table 5). A greater proportion of international projects (37%) than Canadian projects (23%) were led by government, while the reverse is true for independent not-for-profit organizations (32% for Canadian projects, 21% for international projects). Health authorities/departments played a more minor role as leader organizations (19% for Canadian projects, 12% for international projects).

Number of Categories Addressed. In classifying the indicators into the 13 categories in the framework, the number of categories addressed by each project reflects the comprehensiveness of the project in conceptualizing the health of communities. The number of categories addressed ranged from 6 to 13 for Canadian projects, and from 4 to 12 for international projects (see Appendix 3, Table 6). The mode was 9 categories addressed, for both Canadian (30%) and international (21%) projects.

Types of Categories Addressed. The 4 categories that were most commonly addressed, both in Canada and internationally (at least 86% of projects), were Livability, Conviviality, Prosperity, and Equity (see Appendix 3, Table 7). Only 2 categories were addressed by less than one half of the projects in Canada and internationally – Positive Health/Quality of Life and Mastery/Self-Esteem/Coherence. Ranking the categories based on the number of projects addressing them, the traditional measures of "health" fall into 8th and 9th place (Negative Health – Morbidity/Disability and Mortality).

Types of Elements Addressed. Almost all of the categories in the framework are further divided into "elements." For most of these categories, over three quarters of the projects address one particular element within that category: within the category Sustainability 89% of the projects address the element "waste production and reduction"; within the category Viability 87% of the projects address "air quality"; within the category Livability 92% of the projects address "community safety and security"; within Conviviality 87% of the projects address "commitment to public services"; within the category Equity 88% of the projects address "economic disparity"; within the category Prosperity 91% of the projects address "employment/unemployment"; within the category Education 95% of the projects address "educational attainment/school quality"; and within the category Negative Health 96% of the projects are "morbidity/disability" measures (see Appendix 3, Table 8).

Types of Indicators. Each element in the framework is measured via a multitude of indicators. For example, the element "energy use" can be measured by indicators related to non-renewable energy sources, renewable energy sources, energy conservation measures, and so forth. Table 9 in Appendix 3 shows the magnitude of the diversity in the types of measures used in indicator projects around the world. Nevertheless, the following 8 types of indicators represent the top 19% of all the 6,646 indicators culled from the 117 projects.

Type of Indicator	Number
Prevalence, incidence, or self-reports of diseases, conditions, or disability.	247
Health system capacity/performance/efficiency measures (including dental care)	221
Distribution of deaths (rate) by diseases/conditions (cause of death) and/or for sub-populations	161
Crime overall or by type of crime (reports, arrests)	151
Land coverage by type or for specific uses, and comparisons between these	120
Level of education attained	118
Measures of "substance" use in the general (adult) population (not specific to youth/teens)	118
Measures of the diversity of the economy in sectors/industries based on measures that are not specific to jobs or employment	116
Total	1252/6646 (19%)

Data Sources. No data source(s) were identified in the indicator reports for almost one third of the 6,646 indicators (31%). For the remaining 4,594 indicators, 5,396 data sources were identified (see Appendix 3, Table 10). About two thirds of the identified sources (66%) were from government, including departments that are not health-related (38%), statistics departments (17%), and health departments (11%).

3.2 <u>Written Survey</u>

The web-based survey was sent to 56 key contacts involved in 37 Canadian indicator projects. A response rate of 57% was achieved (n=32). The respondents identified themselves as: Coordinators or staff support for the indicator projects (25%); Director or Executive Director of the organization leading the project (22%); Senior Planner, Planning Associate or Planning Officer for their municipality in the planning department (16%); members of a committee that was in charge of an indicator project (16%); Researcher, Research Associate or Research Analyst (12%); and consultant or advisor for a project (9%). The respondents were also asked to indicate the number of years that they had been involved in the indicator projects. The respondents had been involved for a median of 4 years (range 1-15 years) (see Appendix 4, Chart 1).

Respondents' Perceptions of Indicator Development. The respondents were asked to identify the stage of development of indicators for each element in the framework. The response choices were: topic never discussed; deciding whether or not to have indicator; indicator already selected; decided will have indicator; decided not to have indicator; and don't know. In general the responses were diverse across the response choices. However, some similarities were observed for some elements (see Appendix 3, Table 11). At least one half of the respondents

reported that an indicator was already selected for the following elements: morbidity/disability (78%); community safety and security (75%); employment/unemployment (75%); economic disparity (72%); education attainment/school quality (69%); housing affordability (66%); demographics (66%); voter turnout (59%); infant mortality rate (56%); suicide rate (66%); housing quality including homelessness (53%); and overall mortality rate (50%). Between one third and one half of the respondents reported that the following elements had never been discussed: local control of businesses (47%); noise pollution (44%); food chain contamination (41%); access to power and control (44%); renewable resource consumption (37%); human and civil rights (37%); perception of political leaders and government services (37%); smoke-free space (37%); walkability (34%); and happiness (34%).

Gaps in Indicators. The respondents were asked to list up to two topics from the framework that they considered were priorities for which they did not have indicators. Nineteen of the 32 respondents (59%) identified a total of 25 topics as having gaps in indicators. These included indicators related to: the environment (40%); social issues (24%); the economy (12%); health and the health system (12%); and governance (12%). The respondents were also asked to list the reasons for the gaps in indicators. From a diversity of responses, several general themes emerged. First, the gaps in indicators was due in major part to the difficulty in obtaining and measuring data. A second major theme, for projects that spanned multiple municipalities, was the challenge in choosing indicators that apply to the multiple municipalities involved in the project. Finally, the gaps in indicators were due to a lack of time and money in doing these indicator projects.

Results of Indicator Projects. The respondents were also asked to rate their (dis)agreement with 11 statements about the possible results of their indicator projects (see Appendix 3, Table 12).

There was some agreement that some shorter-term changes had occurred in their communities due to the indicator projects, in terms of increased public knowledge about what contributes to a well-functioning community (72%) and increased intersectoral collaboration around priorities in the community (65%). Over one half of the respondents were "neutral" as whether their projects led to longer-term changes such as improved economic (59%), social (69%), or environmental (62%) conditions or to improved health (66%) in their communities.

3.3 Telephone Interviews

A total of 27 interviews were conducted. This included 25 respondents to the web-based survey and 2 people who declined to complete the survey but were interested in being interviewed.

Impact of Indicator Projects. When asked how the indicator projects had influenced their communities, the interviewees identified 78 specific impacts. Forty-four of these impacts (56%) were reported to have been intended, suggesting that some of the objectives of the indicator projects had been achieved to some degree. Five types of impact were observed among the 78 specific impact statements. First, the indicator reports promoted awareness of issues and priorities in the community (31% of the statements about impact, n=24). For example, an indicator report triggered a local newspaper to begin focusing more on health issues. Another community was surprised to learn about the increased number of bankruptcies, as presented in the indicator report. Second, the indicator projects led to some about action taking place for the purpose of improving the health of the community (24%). An example is a task force being created to deal with issues such as poverty and smoking. In another community, a homelessness shelter was finally built when it was realized that the extent of homelessness, presented in the

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indicator report, was as serious as had been estimated. Third, the indicator reports had been used

as a supplement to decision making such as resource allocation, city planning or the creation of

policies (22%).   Fourth, increased community participation via the formation of new

partnerships, networks and/or intersectoral collaboration (19%).   Fifth, a few unexpected

negative results were reported (4%). These include a municipal government or city council who

felt that the indicator report gave their community negative publicity and community groups who

disagreed with the indicators that were selected.

"I think that it started to make people aware of some factors, which they really hadn't considered."

Factors That Influence the Impact of Indicator Projects.   When asked what factors had

affected the success and/or failure of their projects' impact on their community, the interviewees

suggested a total of 113 factors. Seven themes emerged from this list of factors. The first set of

factors relates to the usability, quality and relevance of the data and the report (27% of the

responses). In one case, the interviewee felt the report was too technical and therefore not useful

in a community setting. Another interviewee stated that the indicators that were chosen were not

relevant their community. The second set of factor relates to the level of commitment from the

people involved and from the community (23%). When a project had strong leadership and

committed community partners, it experienced more of an impact. A third set of factors relates

to whether or not the project had the support of the municipal government, city council and/or

city departments (16%). Some interviewees felt that a political agenda often took precedence

over the health of the community, and that some of the politicians were more worried about the

image of the city than the actual city itself. A fourth set of factors relates to the availability of

time and money (12%). For example, obtaining a continuous source of funding for indicator

projects was a major issue for some projects. A fifth set of factors relates to the importance of the credibility of the organization leading the project in the community (11%). Leader organizations that had a good reputation and pre-existing contacts prior to beginning a project tended to have more of an impact. A sixth set of factors relates to publicity (4%). Some interviewees believed that more media coverage and a better marketing strategy would have been extremely useful. A more specific analysis was conducted to identify which impacts were influenced by which factors. From the list of 113 factors identified, 30 of them (27%) were associated with a specific impact. Eighteen factors were associated with the impact of promoting the awareness of issues and priorities, one half of which were related to the usability, quality and relevance of the data and the report. Therefore, the factor that significantly influenced the impact of promoting awareness of issues and priorities was the usability, quality and relevance of the data and the report. On the same note, the factor that significantly influenced the impact of increasing community participation via the formation of partnerships, networks and/or inter-sectoral collaboration was the commitment of people involved and a strong interest from the community (50% of 6 factors identified). The impact of using the report to supplement decision making was reported to have been influenced by the level of support received from the municipal government, city council and/or city departments (100% of 2 factors identified).

> *"The city became our enemies rather than our friends simply because [the project report] made them accountable for their decisions and the way that they make their decisions."*
>
> *"We are generally trusted by a lot of community agencies…and the media to produce good quality research."*

Changes Needed in Order for Indicator Projects to Have Greater Impact. Forty changes that were needed were identified by the interviewees. Seven themes emerged from these responses. First, 33% of the changes related to the improvement of research methods, analysis, data

collection and/or indicator selection, e.g., reviewing the existing set of indicators for viability and validity, and improving research capabilities and data interpretation skills. Second, the continuity of projects over a long period of time was needed (15%). Third, support from municipal government, city council and/or universities was needed (15%). Fourth, a constant source of funding is needed to guarantee the projects' continuance (10%). Some felt that the support of the municipality and city council would help in this quest to track indicators over a longer period of time. Fifth, more publicity through media releases or community forums was needed in order to raise the profile of the project (12%). Sixth, this would in turn increase impact by creating a positive public perception of the projects' usefulness in the community (5%). Seventh, leadership and a stronger commitment from the key people involved was needed (10%). Some felt that a lower turnover rate would result in a project that had more influence in the community. Only 1 of the needs was identified with an associated specific impact. The need to improve research methods, analysis, data collection and/or indicator selection was linked to the impact of promoting awareness of issues and priorities in the community.

"Unfortunately there is very little funding for this type of project at the community level."

"We are unable to do (the project) on an annual basis. We don't have so many resources that we can put it out that regularly."

3.4 Focus Groups

Four focus groups were held in the cities of Vancouver, Edmonton, Toronto, and Halifax to obtain feedback on the idea of a draft guidebook for selecting priorities, and developing indicators and objectives. The following main points are summarized from the focus groups: 1) that the intended audience and the purpose of such a guidebook should be clearly stated at the beginning; 2) that attention should be given as to why people should be using the framework; 3)

the guidebook could act as a resource for communities to develop indicators, as well as a tool for education (e.g., guidance on prioritization) and for intersectoral collaboration; 4) that the language of a guidebook should not be too academic; 5) that indicators need to be linked to a purpose or community vision; 6) that the guidebook could provide a short synopsis about what the indicator is, why people would collect it, its limitations, where it is found, and comparisons against criteria; and 7) that the guidebook could promote the importance of indicators to policy makers.

Based on the feedback from the focus groups and research experience, the development of a "guidebook" to aid in the indicator process (selection, measurement, monitoring, action) appears to be a complex and multifaceted undertaking. An initial and important step in developing the concept of a "guidebook" to aid in the indicator process is to review the indicator "resources" that already exist. An annotated compendium of these resources can be found in Appendix 5. These "resources" address different aspects of the indicator process to different degrees.

4. IMPLICATIONS FOR FUTURE RESEARCH ON POPULATION HEALTH IN CANADA

The present results provide a useful overview of the characteristics of work being done on the measurement and conceptualization of community-level indicators of health and quality of life. They also organize the identified characteristics by using the Hancock et al. framework. Finally, they provide initial insights into perceived reasons for gaps in the "coverage" of potential indicators, the perceived impact of indicator projects, and the reported needs for improving the measurement and conceptualization of community-level indicators of health and

quality of life in Canada. We believe these results have several important implications for future research in this area.

We organize our consideration of the potential implications in two ways. First, consider the implications in terms of "types" of research that may need to be conducted. Next, we consider the implications of extending our proposed approach to building "standards" for community-level indicators. We believe that there are five types of relevant research that warrant further attention and future research. These are 1) conceptual, 2) needs assessment, 3) tool development, 4) implementation and 5) intervention outcome research. We discuss each briefly.

Conceptual research is needed to better articulate the key characteristics of interest as they relate to community health. We need to better understand how Canadians (both lay people and decision leaders) conceptualize health and quality of life at a supra-individual (i.e., neighbourhood or community level). We also need research on the values underlying these perceptions and their implications for program and policy development. **Needs assessment** research should involve five aspects: identification of users and uses of community-level indicators; better description of target populations and service environments; more complete description of problems and potential solutions); assessment of the relative importance and nature of specific needs; and communication of these needs to decision makers and relevant audiences. **Tool development** is needed to develop, validate and test new ways of measuring community-level indicators. At present, sufficient tools do not exist or they are poorly validated and not rigorously or widely used. **Implementation research** is needed to examine the factors influencing the successful execution of indicator projects. Many project are developed with the intent of fostering change in a given jurisdiction. If they "fail", it is often difficult to ascertain if

they were provided sufficient resources (e.g., time, people, money) so as to be successful. **Intervention outcome research** is needed. Many indicator projects are developed with the goal of launching some form of "intervention" and linking indicators of "community health" to important outcomes such as changes in health behaviours, health status and use of health or social services. At present, we lack sufficient knowledge to say which interventions are effective and to elucidate the causal pathways between community-level factors and the outcomes of interest.

As noted above, our report is based on a stage approach to better articulating criteria for stating and measuring community-level indicators as they relate to community health. We argue that any criteria for measuring community-level indicators must consider both the objects of interests for an initiative and the "standards of acceptability" that represent the "definitions of success" associated with specific indicators of the process, impact and outcomes of a given effort. Our present work addresses only the first part of this important process. There is a need for an organized program of research that would flesh out the remainder of this suggested process. More specifically, we would benefit greatly from creating a several demonstration sites across Canada (e.g., Federation of Canadian Municipalities projects) that would collect a set of common indicators that could be validated and then judged against agreed upon common standards of acceptability.

5. IMPLICATIONS FOR POLICY AND PRACTICE

The present results and our methods used provide a clear sense of the policy actors engaged in the present work. The project team engaged a host of policy makers and decision leaders during the data collection including representatives of local, municipal, regional,

provincial and federal governments, and relevant non-governmental organizations. Policy actors were involved in providing documents and reports, and as participants in the survey and interviews. The present results promise to be of value and interest to each of these constituencies.

Below, we outline the potential implications of the present work and of putting more significant and more organized resources toward the measurement of community-level indicators in Canada.

- Greater efforts toward measuring community-level indicators and their relevance to policy and practice efforts may demands to new approaches to funding of community health initiatives and their evaluation. Lack of consistent was identified as a challenge.

- Greater emphasis on measuring community-level indicators could lead to new approaches to preventing illness and promoting health. Policy and programs may be needed to explore the multi-level relations between individual health and supra-individual factors. Evidence suggests that many projects support a multidimensional view of health.

- Health professionals, services providers and policy makers may need to develop new capacities and skills if their work is to incorporate greater consideration of community-level indicators.

- Adoption of greater efforts toward measuring community-level indicators in policy and practice efforts may contribute to a new "culture" in the health sector and greater support for disease prevention and health promotion as it relates to broad non-medical determinants of health. Much work remains to be done in terms of generating intersectoral collaboration and training appropriate stakeholders to work together.

- New forms of management for "health" services and population health programs may emerge

from greater consideration of indicators of "community health" and their relations to health behaviours, health status and use of health or social services.

- The health system and health sector may take on new or refocused functions in order to address the targets and goals suggested by community-level indicators.

- Greater efforts toward measuring community-level indicators in policy and practice may lead to the creation of new goals for the health sector. Generally, it remains unclear as to who is "responsible" for measuring community health and which decisions/actions are best taken at which levels of the system (i.e., local, regional, provincial).

- New objects of interest (e.g., foci for evaluation) are likely to result from greater consideration of community-level indicators in policy and practice.

- Adoption of greater efforts toward measuring community-level indicators in policy and practice could lead to the creation of important new partnerships and broader intersectoral collaboration around the determinants of health. At present, it remains unclear as to the role of the health sector in addressing many of the factors highlighted in the Hancock et al framework. We have new research underway to examine the role and capacity of health regions to address non-medical determinants of health.

- Greater emphasis on measuring community-level indicators in policy and practice could contribute to a demand for new resources. It may also help to identify existing resources that can be applied through innovative programs and policies.

- Professionals, service providers and policy makers may need to adopt new or different roles. These new roles may require new skills, training and capacity-building.

- New and additional stakeholders from diverse sectors of government and society may become involved in the health system and the planning, implementation and evaluation of

health promotion services, programs and policies.

- A new definition of success and standards of acceptability (e.g., effectiveness, efficiency) for the health sector may emerge from a greater consideration of community-level indicators in policy and practice.

- Creation of new partnerships and the involvement of more diverse stakeholders may contribute to the creation of new structures in the health sector. The role of community coalitions in building community health vis a vis government warrants further examination.

- Emerging technologies (e.g., Internet) may offer new strategies and resources for decision-making around a greater role for community-level indicators in policy and practice.

Moving forward on efforts toward greater use of community-level indicators in policy and practice domains in Canada demands a significant change in the behaviours of key players (i.e., policy makers, politicians, health professionals). There is an opportunity to create a process of change that would contribute to much needed learning and capacity building among community and government partners and researchers. The target audiences must be motivated to collect and use community-level indicators. Our results suggest that work remains to be done around improving the knowledge, attitudes, beliefs and values of key constituencies as they relate to the utility of community-level indicators. There is some evidence of growing enthusiasm for their use but it clear that we do not have a widespread disposition toward using community-level indicators in a systematic manner. Second, interested individuals, groups and communities must be enabled to act on their motive toward using community-level indicators. This involves improving research skills and increasing availability and accessibility of supportive resources. There is a concomitant need to remove organizational, structural, economic and cultural barriers to use of these indicators in research, policy and practice environments. Finally, policy makers,

researchers and practitioners who choose to use community-level indicators should be reinforced or rewarded for doing so. At present, it unclear as to what incentives exist for such groups to use community-level indicators. Work remains to be done in identifying intrinsic and extrinsic factors that can be manipulated to encourage and sustain involvement in this type of work.

Diffusion of innovation theory suggests that ultimately, there are five factors that determine the likelihood of adoption of widespread use of community-level indicators. These are: the relative advantage of such indicators, the compatibility of their use with current practices, the complexity of their use, the "trialability" of community-level indicators the innovation (i.e., can they be tried out in demonstration projects or must they be adopted wholesale?) and observability, (whether the benefits of their use can be readily observed). Policy and practice initiatives and new research are needed to address each of these five factors.

6. DISSEMINATION/KNOWLEDGE TRANSFER

Completed and Proposed Dissemination Activities. We adopted a participatory approach to our research activities. We define participatory research as "systematic inquiry, with collaboration of those affected by the issue being studied, for purposes of education and taking action or effecting social change." As such, our work was designed to make our research questions more relevant to our community partners, our methods more acceptable, and our results more useful to decision makers.

To date, we have communicated with more than 150 projects across Canada and elsewhere. Many of these projects (N=117) have been included in our results and we have

created an Access database containing project descriptions and contact information. Our work has been presented at several conference and academic rounds.

Our prior research suggests that policy makers and decision leaders are seeking to better communicate with stakeholders and to use research in their decision-making. The present research will be of value and interest to federal, provincial and regional policy makers and their staff, other researchers, and community groups/individuals in the health sector. The foundation of our communication strategy is the creation of a web site that would contain scanned documents, our reports, our database and compiled resources for assessing community health. The web site will allow policy makers and community stakeholders to communicate about community-level indicators of population health. It could maintain mailing lists/inventories of people and groups responsible for indicators project. Finally, it could include a capacity for needs assessments and additional innovative research. In addition to the proposed web site we plan to share our results through publications in regional newsletters, press releases and academic journals, and presentations at regional and academic conferences. The channel and format of our reports or presentations will be matched with the audience (i.e., government or academics vs. community).

Our research directly addresses the aims of the CPHI by advancing our understanding of a crucial aspect of the determinants of health of Canadians (i.e., community health). It provides new knowledge that will enhance decision-makers ability to articulate policy options that improve population health and reduce health inequalities. We believe that the present research makes a contribution on conceptual, methodological and applied levels. First, it contributes toward the application of a comprehensive, conceptual framework. It also provides a concrete stage-approach to articulating the "objects of interest" and standards for assessing community-

level measures of health and quality of life in Canada. This work potential to be developed into educational workshops for interested audiences, the development of an empirically and theoretically-driven set of guidelines for selecting community-level indicators and the creation of a cohort of demonstration projects. These projects could compare/contrast the application of an agreed-upon, core set of common indicators. Locality-specific indicators could supplement common indicators. Information gathered in this way could be shared among different constituencies and jurisdictions and provide a timely tool for stimulating dialogue among decision leaders. The indicators identified in common demonstration projects could be validated through a systematic process that would yield standards for community-level initiatives and guidance for policy making, resource-allocations, identification of health priorities, evidence-based decision making and accountability.

7. BIBLIOGRAPHY

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APPENDIX 1: COPY OF WEB-BASED SURVEY

Questionnaire:
Assessing the Health of Canadian Communities

This questionnaire is about the health of whole communities, such as cities and towns, and what contributes ultimately to human health and development. By "health of communities", we mean the health and well-being of people, the healthfulness (environment, society and economy) of their communities, and the extent to which communities function well and support the good health of their citizens. We are surveying people in Canada such as yourself, who are involved in indicators projects that measure the health of communities in this broad sense. Please complete the questionnaire regarding the community indicators project in which you are involved. The questionnaire will take about 45 minutes to complete. Completion of this questionnaire is voluntary, and there will be no negative consequences if you choose not to complete it. Completion of this questionnaire means that you have given consent to participate in the questionnaire. Your responses will be strictly confidential.

Section 1 – Background Information

This section asks for information such as the name of the project in which you are involved, and information about yourself in relation to the project. Please also provide us with your contact information, so we can send you the results of our research.

1) What is your name? _____

2) In which community indicators project are you involved?

   _____

3) What is the title of your position or your role in the community indicators project?

   _____

4) How many <u>years</u> have you been involved in the project?

   Please round to nearest number of year(s): _____

5) Your street address: _____

   _____

   _____

6) City: _____   7) Province/Territory: _____

8) Postal code: _____   9) Phone: (_____) _____

10) Fax: (_____) _____   11) E-mail: _____

This section lists topics that may be addressed by indicators in community indicators projects. **Please pick the one situation that best describes the selection of indicators in your project with respect to each topic.**

Sustainability Indicators
The impact of the community beyond its local environment, on regional and global ecosystems.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
12) Energy use	☐1	☐2	☐3	☐4	☐5	☐6
13) Water consumption	☐1	☐2	☐3	☐4	☐5	☐6
14) Renewable resource consumption (e.g., fisheries, forests, top soil and foodlands)	☐1	☐2	☐3	☐4	☐5	☐6
15) Waste production and reduction	☐1	☐2	☐3	☐4	☐5	☐6
16) Local production of resources (e.g., food, energy)	☐1	☐2	☐3	☐4	☐5	☐6
17) Land use (allocation of land for different uses)	☐1	☐2	☐3	☐4	☐5	☐6
18) Ecosystem health	☐1	☐2	☐3	☐4	☐5	☐6
19) Ecological footprint	☐1	☐2	☐3	☐4	☐5	☐6

Viability Indicators
The state or quality of the air, water, soil and ecosystems in the community's own immediate environment
(the impact of the local community and regional or global processes on the local community environment).

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
20) Air quality	☐1	☐2	☐3	☐4	☐5	☐6
21) Water quality	☐1	☐2	☐3	☐4	☐5	☐6
22) Toxics production and use (e.g., pesticides, heavy metals, persistent organic pollutants)	☐1	☐2	☐3	☐4	☐5	☐6
23) Soil contamination	☐1	☐2	☐3	☐4	☐5	☐6
24) Food chain contamination (bio-concentration of persistent organic pollutants and heavy metals up the food chain)	☐1	☐2	☐3	☐4	☐5	☐6

Livability Indicators

The quality and nature of the built environment (including housing, roads and other transportation systems, other urban infrastructure and urban design and land use), and the extent to which the built environment is designed to be safe from accidental injury, crime and violence.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
25) Housing quality, including homelessness	☐1	☐2	☐3	☐4	☐5	☐6
26) Density and land use in the built environment	☐1	☐2	☐3	☐4	☐5	☐6
27) Community safety and security (e.g., crime, accidents)	☐1	☐2	☐3	☐4	☐5	☐6
28) Transportation/automobile dominance	☐1	☐2	☐3	☐4	☐5	☐6
29) Walkability	☐1	☐2	☐3	☐4	☐5	☐6
30) Green/open space (e.g., urban parks)	☐1	☐2	☐3	☐4	☐5	☐6
31) Smoke-free space	☐1	☐2	☐3	☐4	☐5	☐6
32) Noise pollution	☐1	☐2	☐3	☐4	☐5	☐6

Conviviality Indicators

The ability of people to live together reasonably harmoniously, to provide social support and to have low levels of community and domestic strife and abuse.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
33) Family safety and security (e.g., abuse, having a working smoke alarm)	☐1	☐2	☐3	☐4	☐5	☐6
34) Sense of neighbourhood/place	☐1	☐2	☐3	☐4	☐5	☐6
35) Social support networks	☐1	☐2	☐3	☐4	☐5	☐6
36) Charitable donations	☐1	☐2	☐3	☐4	☐5	☐6
37) Commitment to providing public services (e.g., health care, social services, education, recreation, parks, culture, public security, emergency food and shelter, etc.)	☐1	☐2	☐3	☐4	☐5	☐6
38) Demographics	☐1	☐2	☐3	☐4	☐5	☐6

Equity Indicators
Ensuring everyone has an equal opportunity to be healthy through the elimination of unacceptable inequalities in the economic, social, environmental and other determinants of health.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
39) Economic disparity (e.g., disparities in wealth or income, use of food banks, etc.)	☐1	☐2	☐3	☐4	☐5	☐6
40) Housing affordability	☐1	☐2	☐3	☐4	☐5	☐6
41) Discrimination and exclusion	☐1	☐2	☐3	☐4	☐5	☐6
42) Access to power and control	☐1	☐2	☐3	☐4	☐5	☐6

Prosperity Indicators
Creation of sufficient wealth to enable all community members to achieve a satisfactory level of health, and an economy that is able to withstand and adapt to changing economic tides.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
43) Diverse economy	☐1	☐2	☐3	☐4	☐5	☐6
44) Local control of businesses	☐1	☐2	☐3	☐4	☐5	☐6
45) Employment/unemployment	☐1	☐2	☐3	☐4	☐5	☐6
46) Quality of employment	☐1	☐2	☐3	☐4	☐5	☐6
47) Traditional economic activity indicators (e.g., housing starts, investment rates, new business start-ups, etc.)	☐1	☐2	☐3	☐4	☐5	☐6

Education Indicators
Education is about learning, acquiring social-emotional competence, creativity and innovation, and not just about school tests and passing exams and graduating.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
48) Early childhood development	☐1	☐2	☐3	☐4	☐5	☐6
49) Education attainment/school quality	☐1	☐2	☐3	☐4	☐5	☐6
50) Adult literacy	☐1	☐2	☐3	☐4	☐5	☐6
51) Lifelong learning	☐1	☐2	☐3	☐4	☐5	☐6

Governance Indicators
The process by which we collectively solve our problems and meet our community's needs.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
52) Voluntarism/associational life	□1	□2	□3	□4	□5	□6
53) Citizen action/civicness (e.g., lobbying, advocacy, demonstrations, etc.)	□1	□2	□3	□4	□5	□6
54) Human and civil rights (e.g., disability access, controls over arbitrary use of police power, etc.)	□1	□2	□3	□4	□5	□6
55) Voter turnout	□1	□2	□3	□4	□5	□6
56) Perception of political leaders and government services	□1	□2	□3	□4	□5	□6
57) Healthy public polity (integration of health impact in policies and decisions)	□1	□2	□3	□4	□5	□6

Positive Health and Quality of Life Indicators
Subjective elements of quality of life.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
58) Well-being/self-reported health	□1	□2	□3	□4	□5	□6
59) Life satisfaction	□1	□2	□3	□4	□5	□6
60) Happiness	□1	□2	□3	□4	□5	□6

Mastery/Self-esteem/Coherence Indicators
Sense of manageability/control over one's own life and life events.

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
61) Sense of mastery, self-esteem, self-efficacy or locus of control	□1	□2	□3	□4	□5	□6

Health-promoting Behaviour Indicators						
Adoption of behaviours that promote health and well-being and avoid harm.						
Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
62) Health-promoting behaviours (e.g., smoking, alcohol consumption, nutrition, exercise, drug use, seat belt use, preventive medical practices, etc.)	☐1	☐2	☐3	☐4	☐5	☐6

Negative Health Indicators Indicators (Disability/Morbidity)						
The level of physical and mental illness and injury in the community.						
Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
63) Stress/anxiety	☐1	☐2	☐3	☐4	☐5	☐6
64) Morbidity/disability measures (e.g., low birthweight, physically disabling conditions, illnesses and diseases)	☐1	☐2	☐3	☐4	☐5	☐6
65) Health Utility Index (e.g., general index of overall health based on eight attributes of functional ability - vision, hearing, speech, mobility, dexterity, emotion, cognition and pain/discomfort)	☐1	☐2	☐3	☐4	☐5	☐6

Mortality Indicators						
Death rates overall, and by specific cause, as well as infant mortality rate and life expectancy.						
Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
66) Overall mortality rate	☐1	☐2	☐3	☐4	☐5	☐6
67) Infant mortality rate	☐1	☐2	☐3	☐4	☐5	☐6
68) Suicide rate	☐1	☐2	☐3	☐4	☐5	☐6
69) Life expectancy	☐1	☐2	☐3	☐4	☐5	☐6

70) If there are any indicators in your project that do not fit into the topics listed above, please write them in the spaces provided.

a) _____

b) _____

c) _____

Gap in Indicators for Priority Topics 71) There may be topics listed above for which your project <u>currently does not have indicators</u>. If there are, which <u>two</u> of these topics for which you lack indicators do you see as future priorities in your project? For what reason(s) is there currently a gap in indicators for these topics in your project?	
a) **Priority topic #1**:	c) **Priority topic #2**:
b) Reason(s) for current gap in indicators for **priority topic #1**	d) Reason(s) for current gap in indicators for **priority topic #2**

Section 3 – Results of Your Community Indicators Project

Below is a list of statements about what may happen as a result of community indicators projects. We understand that projects will vary in the length of time that they have been around, and in the tasks and priorities that are chosen. Therefore, these statements are not intended as judgement; they are meant to provide a current "state of the art" on how community indicators projects may have impacted communities. Given this, please respond for your community indicators project by rating your disagreement/agreement with each of the statements.

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
72) Our community indicators project has led to changes in policy that are better aligned with priorities in our community.	☐1	☐2	☐3	☐4	☐5
73) Our community indicators project has led to changes in programs that are better aligned with priorities in our community.	☐1	☐2	☐3	☐4	☐5

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
74) Our community indicators project has led to changes in resource allocation that are better aligned with priorities in our community.	☐1	☐2	☐3	☐4	☐5
75) Our community indicators project has led to increased public knowledge about what contributes to a well-functioning community.	☐1	☐2	☐3	☐4	☐5
76) Our community indicators project has led to increased intersectoral collaboration around priorities in our community.	☐1	☐2	☐3	☐4	☐5
77) Our community indicators project has led to increased community development in our community.	☐1	☐2	☐3	☐4	☐5
78) Our community indicators project has led to increased public participation in our community.	☐1	☐2	☐3	☐4	☐5
79) Our community indicators project has led to improved economic conditions in our community.	☐1	☐2	☐3	☐4	☐5
80) Our community indicators project has led to improved social conditions in our community.	☐1	☐2	☐3	☐4	☐5
81) Our community indicators project has led to improved environmental conditions in our community.	☐1	☐2	☐3	☐4	☐5
82) Our community indicators project has led to improved health for people in our community.	☐1	☐2	☐3	☐4	☐5

83) In the next two months, we are planning to conduct a more in-depth exploration into the use of indicators to measure the health and well-functioning of communities. Please let us know whether we may contact you.

☐1   It is okay for you to contact me in the next two months.

☐2   Please do not contact me again in the next two months.

84) Do you have any additional comments?

Thank you for completing this survey.
Please **either fax** the completed survey to Brenda Kwan at 604-822-4994, **or mail** it to:
Brenda Kwan
c/o UBC Health Care and Epidemiology
5804 Fairview Avenue
Vancouver BC V6T 1Z3

APPENDIX 2: LIST OF INDICATOR PROJECTS THAT WERE REVIEWED

A total of 117 projects were reviewed.

Asia (1 project, 1%)
> Asia's Best Cities (Asia Week Magazine)

Europe (3 projects, 3%)
> European Common Indicators
> Project Megapoles - Health in Europes Capitals
> Urban Audit - Assessing the Quality of Life of Europe's Cities

International (2 projects, 2%)
> WHO Healthy Cities Project
> Urban Indicators Tool Kit (United Nations Commission on Human Settlements)

Australia (4 projects, 3%)
> Melbourne City Plan 2010 - Triple Bottom Line Indicators
> Newcastle City - Indicators of a Sustainable Community
> Noarlunga Health Survey
> Onkaparinga State of the City

Belgium (1 project, 1%)
> Barometer for Sustainable Development (Ghent)

Bulgaria (1 project, 1%)
> Sustainable Varna

Canada (36 projects, 32%)
> The Federation of Canadian Municipalities Quality of Life Reporting System
> Mount Allison University Rural & Small Town Program - Quality of Life in Atlantic
>   Canada
> Pilot Project to Develop a Community Health Measure for Small and Rural Communities
>   (Federation of Canadian Municipalities, Canadian Federation of Agriculture)
> Modelling Quality of Life indicators in Canada: A Feasibility Analysis (Canada
>   Mortgage and Housing Corporation)
> Health Indicators (Statistics Canada/CIHI)
> Sustainable Community Indicators Program (SCIP) (Environment Canada, Canada
>   Mortgage and Housing Corporation)

Alberta
David Thompson Health Region's "The Health Report 1999"
Edmonton LIFE - Local Indicators for Excellence
Working Together for Health - Community Needs Assessment 1999 (Paliser Health
      Authority)
Report on the City of Lethbridge Community Survey 1995
How Healthy Are We? (Capital Health Region)
Sustainable Calgary: State of our City

British Columbia
Sustainability Indicators for the Fraser Basin
Health Goals Regional Index
Quesnel Sustainability Indicators Project
2001 Official Community Plan update - Statistical Profile for the City of New
      Westminister
A Report on the Quality of Life in Prince George
BC Stats Socio-economic Profiles of Regional Districts in BC, Canada
Community Impact Profile for Surrey/White Rock
Report on the Health of the Population of Vancouver/Richmond - Health 2000
New Westminster Healthy and Sustainable Community Indicators Project

Manitoba
Quality of Life Indicators for the City of Winnipeg
South Eastman Community Health Assessment

Ontario
Community Health and Well-Being in Southwestern Ontario: A Resource for Planning
Healthy Toronto 2000
Peterborough Quality of Life Report 2000
Vital Signs the Vitality of the Greater Toronto Area
Fast Forward Thunder Bay Annual Indicators Report
Vision 2020 Sustainability Indicators for the City of Hamilton
Halton State of the Environment
Quality of Life Index for Thunder Bay
The Woolwich Community Report (Healthy Communities)
Quality of Life Index Project of Quinte
Ottawa Heading Towards Sustainability: A Snapshot Report
The Quality of Life in Brant County

Quebec
Gros Plan sur Mercier-Est/Anjou

Saskatchewan
Saskatoon Pulse of the City

China (1 project, 1%)
        Hong Kong - Sustainable Development for the 21st Century

Czech Republic (1 project, 1%)
        Brno Healthy City Project

Denmark (1 project, 1%)
        Local Strategy for Health For All in the City of Horsens (Health Policy Action Plan
            1998-2002)

England (10 projects, 9%)
        Devon Quality of Life Report
        Sheffield Trends
        Merseyside's Health 1999
        Indicators for a Sustainable Coventry - Agenda 21
        The Health of the Population (Avon Health Authority)
        Sustainable Surrey Forum - The Common Agenda Counts: Measuring Progress Towards
            a Better Quality of Life in Surrey
        Local Agenda 21 Strategy South Gloucestershire
        Local Indicators to Monitor Urban Sustainability (LITMUS)
        York Local Agenda 21 - A Better Quality of Life in York
        Rushmoor Sustainability Indicators

Finland (1 project, 1%)
        Turku Healthy City (Health Profile 1999)

Hungary (1 project, 1%)
        Pecs City Health Plan (Hungary)

Italy (1 project, 1%)
        Indicators of Sustainable Development for the City and Lagoon of Venice

Japan (1 project, 1%)
        Outline of the Master Plan of Kyoto City

Korea (1 project, 1%)
        Seoul City Index for a Better Quality of Life

Netherlands (1 project, 1%)
        Rotterdam Health Barometer

New Zealand (3 projects, 3%)
        Wellington's State of the City Report
        Dunedin City Strategic Plan
        Canterbury's Quality of Life Indicators Programme

Northern Ireland (1 project, 1%)
      Craigavon Community Indicators

Phillipines (1 project, 1%)
      1999 Regional Development Report (Central Visayas region)

Scotland (1 project, 1%)
      Measuring Edinburgh's Performance

South Africa (2 projects, 2%)
      State of the Environment: Cape Town Metropolitan Area
      Durban Metro State of the Environment and Development

Spain (1 project, 1%)
      Vitoria-Gasteiz - Agenda 21

Sweden (1 project, 1%)
      The Stockholm Indicators for Sustainable Development

United Kingdom (2 projects, 2%)
      Sustainable Development - Indicators (Regional Quality of Life Counts)
      Sustainable Development - Indicators (Local Quality of Life Counts)

United States (36 projects, 31%)
      Quality of Life in Jacksonville: Indicators for Progress
      Sustainable Seattle
      Delaware Valley Direction 2020: Regional Indicators
      Chamber of Commerce Boone County Report Card
      Santa Monica Sustainable City Program
      VHA Foundation Value Model for Community Health Improvement Efforts
      Regional Benchmarking: A Resource for Community Dialogue
      The Health of Boston
      Weld County Indicators of Community Health
      Social Capital Community Benchmark Survey
      Boone County Health and Human Services Needs Assessment 1998
      Hartford Health Survey 2000
      Sitka Community Indicators
      A Community Indicators Study for a Sustainable Blacksburg
      Indicators for a Sustainable San Mateo County
      Vital Signs: Sustainability indicators for Virginia's Technology Corridor
      Scottsdale Seeks Sustainability Indicators Report
      Pueblo Community Indicators Project
      Life in Hamilton County
      Cape Cod Sustainability Indicators Project
      Healthy Anchorage Indicators Project

Healthy Community Indicators - A Tool for Sustainable Development in the Roaring
        Fork and Colorado River Valleys: A Report on Long Term Trends in Our Region
Joint Venture's Index of Silicon Valley
The Valley Health Profile (Naugatuck Valley, Connecticut)
Santa Barbara South Coast Community Indicators
The Yampa Valley Partners Community Indicators Project
Santa Fe County 1999 County Health Profile
Mesa County: Our Picture of Health
Life in Santa Cruz County - Community Assessment Project
Oklahoma County Vital Signs
Quality of Life in Boulder County 2000
The Pasadena Quality of Life Index 1998
DuPage County, Illinois Behavioral Risk Factor Survey 2000
Missoula Measures
The Sustainability Plan for the City of San Francisco
Pierce County Quality of Life Benchmarks

Wales (1 project, 1%)
        Local Sustainability Strategy for Cardiff

APPENDIX 3: LIST OF TABLES

Table 1: List of Main Concept Focus in Indicator Projects

Concept	Number of Projects[a]		
	All	Canada	Other
Sustainability/Sustainable Development	28 (24%)	7 (19%)	21 (26%)
Quality of Life	27 (23%)	12 (32%)	15 (19%)
No reference to a specific concept	25 (21%)	6 (16%)	19 (24%)
Population/Public Health	19 (16%)	9 (24%)	10 (13%)
Local Agenda 21	7 (6%)	0	7 (9%)
Healthy Cities/Healthy Communities	5 (4%)	2 (5%)	3 (4%)
State of the Environment	3 (3%)	1 (3%)	2 (3%)
Other (social capital, Health For All, Habitat Agenda)	3 (3%)	0	3 (4%)
Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 2: Duration of Indicator Projects

Duration (in years)	Number of Projects[a]		
	All	Canada	Other
0 (less than 1 year, completed and not on-going)	3 (3%)	3 (8%)	0
1-3	24 (21%)	10 (27%)	14 (18%)
4-6	36 (31%)	11 (30%)	25 (31%)
7 or more years	29 (25%)	7 (19%)	22 (28%)
Unknown	25 (21%)	6 (16%)	19 (24%)
Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 3: Localities of the Indicator Projects

Locality	Number of Projects[a]		
	All	Canada	Other
City	60 (51%)	18 (49%)	42 (53%)
Region	26 (22%)	12 (32%)	14 (18%)
County	17 (15%)	1 (3%)	16 (20%)
Town	4 (3%)	3 (8%)	1 (1%)
Borough	3 (3%)	0	3 (4%)
Community	2 (2%)	0	2 (3%)
Multiple localities (city, region, municipality, etc.)	2 (2%)	2 (5%)	0
District	1 (1%)	0	1 (1%)
Local authority area	1 (1%)	0	1 (1%)
Territoire	1 (1%)	1 (3%)	0
Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 4: Number of Leader Organizations in Indicator Projects

Number of Leader Organizations Per Project	Number of Projects[a]		
	All	Canada	Other
1	99 (85%)	29 (78%)	70 (88%)
2	15 (13%)	7 (19%)	8 (10%)
4	2 (2%)	1 (3%)	1 (1%)
5	1 (1%)	0	1 (1%)
Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 5: Types of Leader Organizations Involved in Indicator Projects

Type of Organization	Number of Organizations[a]		
	All	Canada	Other
Government (federal, provincial/state, municipal)	46 (32%)	11 (23%)	35 (37%)
Independent not-for-profit organization (partnerships, grassroots)	35 (25%)	15 (32%)	20 (21%)
Healthy authority/department	20 (14%)	9 (19%)	11 (12%)
Educational institution (university)	12 (8%)	5 (11%)	7 (7%)
Other	10 (7%)	2 (4%)	8 (8%)
Independent research organization	8 (6%)	0	8 (8%)
Umbrella organization	6 (4%)	3 (6%)	3 (3%)
Foundation	3 (2%)	1 (2%)	2 (2%)
Media	2 (1%)	1 (2%)	1 (1%)
Total	142	47	95

[a] The percentages shown based on the total for that particular column.

Table 6: Number of Categories Addressed in the Framework by Indicator Projects

Number of Categories Addressed	Number of Projects[a]		
	All	Canada	Other
4	2 (2%)	0	2 (3%)
5	2 (2%)	0	2 (3%)
6	6 (5%)	1 (3%)	5 (6%)
7	11 (9%)	6 (16%)	5 (6%)
8	20 (17%)	5 (14%)	15 (19%)
9	28 (24%)	11 (30%)	17 (21%)
10	21 (18%)	7 (29%)	14 (18%)
11	16 (14%)	2 (5%)	14 (18%)
12	10 (9%)	4 (11%)	6 (8%)
13	1 (2)	1 (3%)	0
Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 7: Number of Categories in the Framework Addressed by Indicator Projects

Rank	Number of Categories Addressed	Number of Projects[a]		
		All	Canada	Other
1	Livability	111 (95%)	33 (89%)	78 (98%)
2	Conviviality	111 (95%)	35 (95%)	76 (95%)
3	Prosperity	109 (93%)	36 (97%)	73 (91%)
4	Equity	103 (88%)	34 (92%)	69 (86%)
5	Education	95 (81%)	32 (86%)	63 (79%)
6	Viability	91 (78%)	28 (76%)	63 (79%)
7	Sustainability	85 (73%)	26 (70%)	59 (74%)
8	Negative Health (Morbidity/Disability)	80 (68%)	29 (78%)	51 (64%)
9	Mortality	79 (68%)	26 (70%)	53 (66%)
10	Governance	73 (62%)	20 (54%)	53 (66%)
11	Health-promoting Behaviours	70 (60%)	20 (54%)	50 (63%)
12	Positive Health/Quality of Life	50 (43%)	18 (49%)	32 (40%)
13	Mastery/Self-esteem/Coherence	5 (4%)	3 (8%)	2 (3%)
	Total	117	37	80

[a] The percentages shown based on the total for that particular column.

Table 8: Elements in the Framework Addressed by Indicator Projects

Category	Element	Number of Projects					
		All	%[a]	Canada	%[a]	Other	%[a]
Sustainability		85	73%	26	70%	59	74%
	Energy use	50	59%	9	35%	41	69%
	Water consumption	42	49%	10	38%	32	54%
	Renewable resource consumption	18	21%	4	15%	14	24%
	Waste production and reduction	76	89%	22	85%	54	92%
	Local production of resources	9	11%	2	8%	7	12%
	Land use (allocation of land for different uses)	55	65%	13	50%	42	71%
	Ecosystem health	36	42%	6	23%	30	51%
	Ecological footprint	1	1%	0	0%	1	2%
	Other (Sustainability)	25	29%	3	12%	22	37%
Viability		91	78%	28	76%	63	79%
	Air quality	79	87%	23	82%	56	89%
	Water quality	65	71%	20	71%	45	71%
	Toxics production and use	22	24%	9	32%	13	21%
	Soil contamination	11	12%	3	11%	8	13%
	Food chain contamination	3	3%	3	11%	0	0%
	Other (Viability)	4	4%	2	7%	2	3%
Livability		111	95%	33	89%	78	98%
	Housing quality, including homelessness	71	64%	23	70%	48	62%
	Density and land use in the built environment	40	36%	9	27%	31	40%
	Community safety and security	102	92%	31	94%	71	91%
	Transportation/automobile dominance	79	71%	17	52%	62	79%
	Walkability	19	17%	2	6%	17	22%
	Green/open space	47	42%	12	36%	35	45%

Category	Element	Number of Projects					
		All	%ª	Canada	%ª	Other	%ª
	Smoke-free space	3	3%	1	3%	2	3%
	Noise pollution	12	11%	0	0%	12	15%
	Other (Livability)	30	27%	8	24%	22	28%
Conviviality		111	95%	35	95%	76	95%
	Family safety and security	45	41%	18	51%	27	36%
	Sense of neighbourhood/place	29	23%	9	26%	20	22%
	Social support networks	28	25%	10	29%	18	24%
	Charitable donations	14	13%	7	20%	7	9%
	Commitment to providing public services	97	87%	29	83%	68	89%
	Demographics	68	61%	22	63%	46	61%
	Other (Conviviality)	10	9%	1	3%	9	12%
Equity		103	88%	34	92%	69	86%
	Economic disparity	91	88%	32	94%	59	86%
	Housing affordability	71	69%	31	91%	40	58%
	Discrimination and exclusion	18	17%	4	12%	14	20%
	Access to power and control	23	22%	3	9%	20	29%
	Other (Equity)	8	8%	2	6%	6	9%
Prosperity		109	93%	36	97%	73	91%
	Diverse economy	63	58%	20	56%	43	59%
	Local control of businesses	2	2%	0	0%	2	3%
	Employment/unemployment	99	91%	33	92%	66	90%
	Quality of employment	10	9%	4	11%	6	8%
	Traditional economic activity indicators	33	30%	10	28%	23	32%
	Other (Prosperity)	74	68%	25	69%	49	67%
Education		95	81%	32	86%	63	79%
	Early childhood development	8	8%	3	9%	5	8%
	Education attainment/school quality	90	95%	32	100%	58	92%
	Adult literacy	18	19%	7	22%	11	17%
	Lifelong learning	22	23%	2	6%	20	32%
	Other (Education)	10	11%	2	6%	8	13%
Governance		73	62%	20	54%	53	66%
	Voluntarism/associational life	29	40%	11	55%	18	34%
	Citizen action/civicness	7	10%	2	10%	5	9%
	Human and civil rights	13	18%	3	15%	10	19%
	Voter turnout	43	59%	13	65%	30	57%
	Perception of political leaders and government services	15	21%	6	30%	9	17%
	Healthy public policy	4	5%	1	5%	3	6%
	Other (Governance)	26	36%	11	55%	15	28%
Positive Health/QOL		50	43%	18	49%	32	40%

Category	Element	Number of Projects					
		All	%ᵃ	Canada	%ᵃ	Other	%ᵃ
	Well-being/self-reported health	28	56%	11	61%	17	53%
	Life satisfaction	4	8%	2	11%	2	6%
	Happiness	5	10%	2	11%	3	9%
	Other (Positive Health/QOL)	41	82%	14	78%	27	84%
Mastery/Self-esteem/Coherence		5	4%	3	8%	2	3%
Health-promoting Behaviours		70	60%	20	54%	50	63%
Negative Health (Morbidity/Disability)		80	68%	29	78%	51	64%
	Stress/anxiety	20	25%	11	38%	9	18%
	Morbidity/disability measures	77	96%	27	93%	50	98%
	Health utility index	2	3%	2	7%	0	0%
Mortality		79	68%	26	70%	53	66%
	Overall mortality rate	28	35%	9	35%	19	36%
	Infant mortality rate	41	52%	17	65%	24	45%
	Suicide rate	33	42%	16	62%	17	32%
	Life expectancy	32	41%	16	62%	16	30%
	Other (Mortality)	54	68%	16	62%	38	72%

ᵃ For each category, the first percentage in the column is based on all 117 projects. The rest of the percentages for that category are based on the number of projects for that particular category, not the overall total of 117.

Table 9: List of Types of Indicators Measured by Indicator Projects, Classified into Elements in the Framework

Category	Element	Number of Indicators	Description
Sustainability	Energy use	34	*Energy (non-renewable or unspecified) consumption/purchased overall or by fuel type.* Fuel types include: oil; gasoline; electricity; petroleum; diesel; fossil fuels (coal, natural gas).
		25	*Energy (non-renewable or unspecified) consumption by sector(s) or specific consumers.* Sectors includes: residential/household; industrial/commercial; domestic transport; agricultural.
		22	*Products of energy use overall or by sector/consumer.* Includes: greenhouse gas emissions (carbon dioxide).
		13	*Energy conservation strategies or measures of energy efficiency.* Includes: heat recovery; co-generation; firms or buildings participating in energy reduction programs; supply of and demand for energy-efficient products; uptake of household energy efficiency measures.
		9	*Energy consumption by alternate, more environmentally-friendly, or renewable sources.* Includes: wind power; solar power; reduced emission fuels; biogas; small hydro; landfill gas.
		8	*Comparisons of types of energy used that include both renewable and non-renewable energy.*

Category	Element	Number of Indicators	Description
		7	*Proxy measures of energy consumption.* Includes: km travelled by private vehicle; connections to energy networks; percentage of unelectrified homes (use of wood and paraffin fuels).
		7	*Cost of energy, e.g., for households.*
		5	*Other.*
	Water consumption	30	*Water consumption overall or by type of water (source).* Includes: groundwater; imported water; potable (drinking) water; freshwater; sea water.
		22	*Water consumption by sector(s) or specific consumers.* Includes: residential, commercial/industrial.
		2	*Proxy measures of water consumption.* Includes: connections to water supply.
		1	*Water conservation strategies.* Includes: expenditure on water saving services.
		11	*Water availability and demand/availability comparisons.*
		1	*Cost of water.*
	Renewable resource consumption	22	*Marine resources.* Includes: availability (amounts of marine species available, conservation of marine areas/species); harvesting (# of fishing licences, # of fishing boats, # of fishers, amounts of marine species harvested, area of water used for harvesting); value of marine resources (sales).
		17	*Foodlands (agriculture and livestock).* Includes: availability and conservation (sustainable practices); production (number of livestock); value (investments, sales).
		7	*Forests.* Includes: availability (trees planted); harvesting; sales; consumption (imports).
		3	*Other.*
	Waste production and reduction	96	*Amount of solid waste by destination/processing/diversion and comparisons between these.* Including: landfill; recycling; incinerator; burning garbage; composting; re-use of waste.
		35	*Wastewater production/reduction/treatment.* Includes: wastewater; sewage; effluent; septic tanks (re-use of treated effluent); reducing waste content in wastewater.
		27	*Solid waste production or disposal by sector/customer (destination not specified).* Includes: residential; institutional; commercial/industrial; demolition (land clearing and construction debris).
		22	*Solid waste production or disposal overall (destination not specified).*
		20	*Other.*
		10	*Hazardous waste production, reduction and treatment.*
		9	*Litter.* Includes: infrastructure; production; collection.
		4	*Participation in reducing the amount of solid waste produced.* Includes: by city councils and staff, businesses, and institutions (waste reduction/recycling programs); by residents (donating to or buying from second-hand stores).
		2	*Demand/availability of products that have been recycled, in whole or in part.*

Category	Element	Number of Indicators	Description
		1	*Capacity for solid waste disposal/processing/treatment.* Includes: remaining landfill capacity.
	Local production of resources	6	*Growth and harvesting of food for personal consumption.* Includes: community gardens and plots; wild resources.
		6	*Local consumption of goods (retail supply and consumer purchases).* Includes: programs that promote the selling of local produce to local consumers; % of demand met by local provision of goods; # of outlets selling local produce (farmers' markets).
		2	*Consumption of non-local foods.* Includes: distance that food travels to reach the locality; amount of food imported.
	Land use (allocation of land for different uses)	120	*Land coverage by type or for specific uses, and comparisons between these.* Includes: agricultural, livestock or rural land; developed or urban land; impervious land and artificial surfaces; natural areas (forests, habitats, wetlands, wilderness); derelict or run-down land; residential; commercial/industrial; for mineral extraction; public/private; irrigation; conservation/protected/renewed areas.
		19	*Development on greenfield sites (previously undeveloped land) and/or brownfield sites (previously developed land).*
		2	*Other.*
	Ecosystem health	55	*Counts or lists of selected indicator species, animal or plant.*
		5	*Other.*
		4	*Invasive or noxious plants (that reduce the number of other plant species).*
		3	*Number of indicator animal species taken by hunters.*
		2	*Salvaging or planting of native or indigenous plants.*
		1	*Contamination of local species.* Includes: heavy metals in mussels.
	Ecological footprint	1	*Ecological footprint.*
	Other (for Sustainability category)	17	*Businesses, organizations and associations participating in environmental improvement programs, or selling/offering environmentally-friendly goods and services.*
		14	*Government participation in environmental management programs or awareness raising initiatives.*
		10	*General awareness, interest in, and (dis)satisfaction with the environmental/sustainability and related services.*
		9	*School participation in environmental education and sustainability.*
		4	*Environmental education opportunities (outside of schools) for general community or for specific groups.*
		3	*Other.*
		2	*Environmental regulations and standards, including: Environmental Impact Assessment (EIA); compliance with standards.*
Viability	Air quality	63	*Air quality by the concentration of key pollutants.*
		42	*Air quality measures compared to accepted standards, guidelines or regulations.*
		36	*Ratings of air quality (e.g., good, moderate, bad).* Includes: Air Quality Index; Index of the Quality of the Air (IQUA).

Category	Element	Number of Indicators	Description
		13	*Residents' perceptions and attitudes about air quality.* Includes: air quality complaints/reports; willingness to make changes to improve air quality.
		6	*Other.*
		5	*Indoor air quality.* Includes: exposure to second-hand smoke; complaints about residential indoor air quality; industrial health rating.
		4	*Air pollution by source/use and comparisons between these.*
		3	*Effects of air pollution on human health (respiratory problems).* Includes: mortality; hospitalization.
		3	*Investment/strategies to improve air quality.*
		2	*Generic air quality (no units of measure specified).*
	Water quality	29	*Water quality compared with standards/guidelines/objectives.*
		23	*Levels of selected chemicals, gases, and minerals in water.*
		19	*Levels of biological life forms in water.* Includes: faecal coliform; Macroinvertebrate Community Index; toxic alga blooms.
		13	*Generic water quality (no units of measure specified).*
		12	*Measures (proxy) of water quality related to wastewater (treatment) and run-offs (erosion, stormwater).* Includes: pollutants removed from wastewater.
		9	*Ratings of water quality (e.g., good, moderate, bad).* Includes: Water Quality Index; Ecological Status Class.
		9	*Advisories about water quality.* Includes: beaches open for swimming; boil-water advisories.
		5	*Commitment of maintaining/improving water quality.* Includes: watershed management plan; funding allocated for improvements; infrastructure development for measuring water quality.
		5	*Residents' perceptions and attitudes about water quality.* Includes: (dis)satisfaction with water quality.
		2	*Other.*
	Toxics production and use	12	*Amount of toxics released as a by-product.* Includes: nuclear waste; Toxic Release Inventory.
		8	*Unregulated emissions.* Includes: environmental spills (effluent discharges); leakages of radioactive materials and other hazardous substances.
		7	*Reducing the use of toxics.* Includes: production and consumption of organic food; natural methods of treatment of parks and forests.
		6	*Use of toxics, e.g., pesticides.*
	Soil contamination	11	*Contaminated or potentially contaminated land.* Includes: extent or area of contaminated land; number of contaminated sites.
		1	*Strategies to cleanse or reduce soil contamination.*
	Food chain contamination	2	*Detection of contaminants in species at the top of the food chain.*
		1	*Species that should not be eaten, e.g., warnings.*

Category	Element	Number of Indicators	Description
	Other (for Viability category)	4	*Other.*
Livability	Housing quality	45	*Housing availability overall and by type (e.g., house, apartment, mobile home, etc.).* Includes: vacancy rates; housing stock (and comparison with demand).
		38	*Extent of homelessness.* Includes: number of homeless people; use of shelters and hostels; evictions (as reflecting homelessness).
		33	*Quality of housing.* Includes: houses in need of repair or considered sub-standard; availability of basic services in the home; age of housing units; improvements made to housing; property size.
		26	*Housing tenure.* Includes: whether housing is temporary; owner/renter-occupied housing.
		12	*Comparisons between living space and the number of people in the household.* Includes: crowding; number of rooms/number of inhabitants.
		5	*Other.*
		4	*Availability and use of specialized shelter and housing, e.g., seniors' housing.*
	Density and land use in the built environment	46	*Availability and usage of shops, restaurants, and amusement events/facilities.*
		16	*Importance placed on existing buildings/structures.* Includes: identified as important (heritage, at risk); heritage sites lost; preservation or refurbishing work (e.g., derelict buildings).
		10	*Other.*
		9	*Density of residential or commercial buildings.*
		9	*Availability of commercial buildings/space.* Includes: office vacancy rates.
	Community safety and security	161	*Crime overall or by type of crime (reports, arrests).* Includes: self-reports of being a victim of crime.
		82	*Accidents, arrests, and convictions due to unsafe operation of motor vehicles specifically.* Includes: traffic offences; number of accidents; mortality and morbidity due to motor vehicle accidents (passengers, pedestrians, cyclists); driving under the influence of alcohol or drugs.
		64	*Residents' perceptions and attitudes about personal safety and community safety.* Includes: fear of crime; importance of safety; safety issues that are of priority; perceptions of/(dis)satisfaction with the emergency response system.
		63	*Extent of unintentional injuries (accidents like falls, drowning, etc.) or poisonings specifically, overall and/or by type (excluding those specific to the unsafe operation of motor vehicles).* Includes: number of accidents/poisonings and deaths (farm, work-related, firearm-related); hospital admissions/discharges; morbidity and mortality.
		46	*Infrastructure/capacity to prevent/deal with crimes, emergencies, and natural disasters.* Includes: expenditures committed to this; availability of staff; emergency response time; existence of plans, policies, and standards (crime prevention, weapon control); existence and participation in prevention/education programs (neighbourhood watch).
		35	*Juvenile delinquency and crime (overall or by type).* Includes: self-reports of being in trouble with the police; violence at school.
		12	*Self-reports of unsafe/safe practices or risk of injury to others.* Includes: driving while drunk; unsafe storage of firearms or ammunition; obeying the speed limit.

Category	Element	Number of Indicators	Description
		12	*Exposure to safety problems or hazards (at home, in the community, or at work).* Includes: radiation and dangerous goods; foodborne illnesses; lead.
		7	*Convictions/clearance for crimes and compared with arrests.*
		6	*Other.*
		2	*Rehabilitation of convicted criminals.*
	Transportation/ automobile dominance	50	*Use of public transit specifically.* Includes: ridership numbers; as a proportion of all trips (number of trips, vehicles miles travelled).
		44	*Use of private automobiles specifically.* Includes: number of automobile registrations and compared with the population or number of households; number of passengers per car; number of vehicles at a specific location during a specific period; vehicle miles traveled.
		40	*Comparison/distribution of modes of transport (no one mode as a specific indicator).* Includes: modal split between public and private transport.
		38	*Public transit performance and capacity.* Includes: buses that are on time; number of transit vehicles available; extent of the transit network or routes; public (dis)satisfaction with public transit (accessibility, adequacy); expenditures and revenues; average trip time.
		38	*Traffic flow.* Includes: commuting time; congestion and delays; traffic volume; length of trips (time, distance); residents' perceptions of traffic flow; ease road traffic flow (incoming of goods via ports, travel by air).
		18	*Infrastructure for transportation other than via private vehicle, including: pedestrian and bicycle friendly streets or pathways; km of cycle lanes or paths.*
		11	*Use of specific (overall or by type) alternate modes of transportation other than a private vehicle (e.g., cycling, walking, telecommuting, private bus companies) (may or may not include public transit).*
		11	*Measures of the level of transportation that is more global than the immediate community.* Includes: air traffic (flights, passengers); port traffic (cargo, freight).
		10	*Other.*
		4	*Public/private transport comparisons other than rate of usage.* Includes: cost; commuting time.
	Walkability	26	*Distance between people and services/amenities.*
	Green space/open space	69	*Extent of greenspace or other public open space (may or may not be protected).* Includes: area of greenspace (per capita); number of community gardens; number of trees.
		13	Residents' (dis)satisfaction with the extent or quality of greenspace.
		5	*Other.*
	Smoke-free space	2	*Residents' perceptions about smoking in public spaces.*
		1	*Existence of by-laws, ordinances, or policies regarding smoking in public spaces.*
	Noise pollution	6	*Residents' (dis)satisfaction with the level of noise.* Includes: number of noise complaints; expressed concerns about noise level.
		4	*Level of noise.*
		4	*Exposure to excessive noise levels (e.g., above 65 dB).*
		1	*Commitment to reducing the level of noise (e.g., noise action plan).*

Category	Element	Number of Indicators	Description
	Other (for Livability category)	17	*Availability and access to (connected to) basic services.* Includes: garbage removal; drinking water; sanitation; sewer system; electricity.
		10	*Other.*
		9	*Cleanliness of streets, buildings, and common (public) spaces.*
		8	*Expenditure on and efficiency in use of infrastructure (e.g., streets, roads, public spaces).*
		6	*Measures of the condition (quality) of roads.*
		5	*Communications connections (e.g., basic telephone, TV, modem/internet, cell phone).*
		4	*Scenic value of the built environment.*
		2	*Public (dis)satisfaction with basic services.*
Conviviality	Family safety and security	53	*Child abuse or neglect specifically.* Includes: reported cases; out-of-home placements (e.g., foster care); children aided by child protective services.
		20	*Measures of family or domestic abuse, assault or violence overall.* Includes: reported cases; arrests; use of crisis lines or crisis centres; number of victims (receiving victim assistance, self-reports).
		8	*Spousal abuse, assault or violence specifically.* Includes: reported cases; as a proportion of all crimes; use of (abuse) shelters.
		4	*Elder abuse specifically.*
		4	*Readiness for emergencies in the home.* Includes: fire escape plan; smoke detectors.
		4	*Residents' perception of safety in the home or in current relationship.*
		3	*Residents' perception about family safety and security in the community.*
		3	*Other.*
	Sense of neighbourhood/ place	51	*Availability of and participation/membership in social/fraternal/special interest clubs/organizations.*
		12	*Residents' perception of whether there is a sense of community or feeling of belonging.*
		12	*Residents' perceptions about trust between people.*
		11	*Residents' perceptions about how welcome/friendly people are in the community.*
		6	*Other.*
	Social support networks	23	*Whether people have social interactions, activities, or contacts with others in general.* Includes: having people over to one's home; knowing neighbours by name; going out or hanging out; on-line discussions; number of friends.
		18	*Availability of people to turn to in times of difficulty, crisis, need, or for care (e.g., friends, family, neighbour, social support group).*
		16	*Diversity of social contacts and interactions.* Includes: ethnic background; occupation; religious orientation; sexual orientation; inter-generational.
		13	*Other.*
		9	*Satisfaction with relationships (e.g., family, living partner, social life, friends).*

Category	Element	Number of Indicators	Description
		5	*Generic or integrative measures of social support.* Includes: Social Support Index.
		2	*People living alone (involuntarily).* Includes: self-reports of feeling lonely or isolated.
	Charitable donations	26	*Charitable donations made overall or to specific organizations or causes.* Includes: money donated; proportion of population donating.
		1	*Donation of blood.*
	Commitment to public services	221	*Health system capacity/performance/efficiency measures (including dental care).* Includes: availability of professionals or services (per capita); access to services (e.g., waitlists or waiting time for services); hospital bed occupancy rate; length of stay at hospitals; outpatient/inpatient (as a % of all stays, or as length of stay); appropriate/inappropriate use of health services; public perception of performance/quality or access.
		86	*Objective measures of the availability of public services and programs (may include health).*
		86	*Awareness and usage of public services and programs (may include health).*
		74	*Commitment to public services (e.g., expenditures, staff).* Includes: health; parks and recreation/leisure; arts and culture; education; social services (affordable housing, welfare, income assistance to those in need, finding work); mental health; libraries.
		46	*Measures related to child or day care.* Includes: supply (availability) and demand; usage; cost; quality of care (e.g., accreditation/licensing, qualifications of child care caregivers).
		42	*Affordability/cost of health or dental care for residents.* Includes: whether people have insurance; whether people can afford to see a doctor/dentist; proportion of services paid for by an insurance plan; whether people can afford drug prescriptions.
		35	*Residents' attitudes and (dis)satisfaction with public services other than health.* Includes: availability; access (cost); quality.
		3	*Other.*
	Demographics	59	*Population size.*
		55	*Age.* Includes: median or average age; distribution by age groups; proxy measures (e.g., school attendance as an indicator of youth, Medicare enrollment as an indicator of senior citizens); child dependency rate; elderly dependency rate.
		47	*Household- related measures.* Includes: family structure/composition (e.g., lone parent families, seniors living alone); number and size of households.
		42	*Visible minorities.* Includes: race or ethnicity; mother tongue (language spoken at home).
		30	*Residency and mobility.* Includes: migration (in, out, net); length of residency.
		25	*Births or fertility rate.*
		14	*Marital status.*
		14	*Mixed demographic features (i.e., each feature is not part of a distinct indicator).* Includes: age and gender; race and gender.
		14	*Population density.*
		11	*Gender.*

Category	Element	Number of Indicators	Description
		9	*Other.*
		4	*Employment status.*
	Other (for Conviviality category)	18	*Other.*
Equity	Economic disparity	96	*Income distribution.* Includes: people considered to be poor, low income, or in poverty; distribution of income levels; income disparities; Gini coefficient; for sub-populations.
		58	*Income assistance or provision of basic needs (where food aid is not the specific focus).* Includes: employment insurance; social assistance; social security; government transfer income; welfare assistance; emergency family assistance.
		37	*Child poverty specifically.* Includes: child poverty rate; students participating in free or reduced lunch programs.
		22	*Food aid.* Includes: food hampers distributed; use of food banks or other food assistance (e.g., food stamps, etc.).
		19	*Whether people have adequate income to meet basic needs (relative to income).* Includes: self-reported concern over having enough money for basic needs; cost/affordability of living/basic amenities (public transportation, education, etc.).
		14	*Requirements to meet basic needs.* Includes: income needed to meet basic needs (e.g., food, etc.); work hours required; cost requirements; low income cut-off.
		5	*Other.*
	Housing affordability	29	*Cost of housing in overall (or unspecified as to whether for rent or purchase) relative to income.*
		28	*Cost of purchasing housing relative to income.* Includes: whether people can afford to purchase a home; those who spend (usually) >30% of their income on home purchase; average mortgage vs. average income (community-level measure of affordability of purchasing a home).
		23	*Cost of purchasing.* Includes: average price of houses sold; housing unit values; average mortgage rate.
		20	*Housing assistance/subsidy (number of applicants, people on waitlists, and residents).*
		19	*Cost or renting (e.g., average rental price).*
		19	*Cost of rental housing relative to income.* Includes: whether people can afford to rent; those who spend (usually) >30% of their income on rent; average rent vs. average income (community-level measure of affordability of rental units).
		8	*Housing purchases (number of sales).*
		6	*Residents' perceptions of housing affordability.*
		4	*Other.*
		1	*Cost of housing overall (or where rent/purchase is not specified).*
	Discrimination and exclusion	11	*Other.*
		10	*Equity in employment.* Includes: number of people employed; equal opportunity policies; discrimination complaints.
		8	*Equity in political participation (e.g., locally elected officials).*

Category	Element	Number of Indicators	Description
		8	*Residents' perceptions of discrimination in the community or self-reports of being discriminated against.*
		2	*Equity in participation in civic and social activities.* Includes: sports; cultural activities; committees.
	Access to power and control	21	*Availability and access to information.* Includes: number of public computer terminals; access to Internet; media (TV, radio, newspapers).
		9	*Actual participation in opportunities for decision making.*
		7	*Residents' perception and (dis)satisfaction with accessibility/availability of information or opportunities for participation and influence.*
		7	*Availability of opportunities for participation and influence (e.g., consultations).*
		4	*Perception of sense of power or ability to influence or control one's living and working conditions.*
	Other (for Equity category)	6	*Overall measure of deprivation or general measure of social inequality.* Includes: deprivation index; children registered as "endangered".
		3	*Comparative measures of social inequity.*
		2	*Availability of and consumption of fair-trade products.*
Prosperity	Diverse economy	116	*Measures of the diversity of the economy in sectors/industries based on measures that are not specific to jobs or employment.* Includes: size; production; revenue.
		68	*Measures of the diversity of the economy or occupational structure (e.g., professional, management, etc.) specifically based on jobs and employment in sectors/industries.* Includes: the largest employers or employment concentration; proportion of jobs by industry or sector; number of employees by industry or sector.
		17	*Wages, income, or salaries by sector/industry/occupation specifically.*
		3	*Indices of economic diversity.* Includes: Economic Diversity Index; Industry Diversity Index.
	Local control	1	*Businesses that are locally owned.*
		1	*Money spent in locally-owned businesses.*
	Employment/un-employment	67	*Overall unemployment.* Includes: number of people unemployed (rate); number of workless households; "real unemployment rate" (includes those who are underemployed or no longer looking for work).
		32	*Overall employment rate.*
		30	*Job opportunities.* Includes: number of jobs; job-to-population comparisons; job-to-housing comparisons.
		23	*Measures of labour force participation.* Includes: those not in the labour force; for sub-populations.
		16	*Long term unemployment.* Includes: receipt of unemployment benefits for over a year.
		15	*Nature/tenure of employment or jobs.* Includes: full-time; part-time; self-employed; part-year; casual; permanent; temporary; union vs. non-union; job uncertainty.

Category	Element	Number of Indicators	Description
		14	*Residents' attitudes and (dis)satisfaction with personal or community employment/unemployment.* Includes: availability of (good) jobs.
		12	*Youth unemployment/employment specifically.* Includes: unemployment benefits to youth; school leavers going into employment.
		11	*Proxy measures of unemployment.* Includes: people receiving unemployment benefits; people leaving the community due to lack of work; lay-offs.
		9	*Unemployment/employment by sub-population or sub-jurisdictional comparisons.* Includes: age groups; gender; ethnic/cultural groups; educational attainment.
		8	*Location of employment relative to location of residence.* Includes: people who live and work in the same municipality.
		6	*Other.*
		5	*Underemployment.*
	Quality of employment	7	*Perception of the quality of employment.* Includes: job satisfaction; work pace.
		5	*Work flexibility.* Includes: working at home (telecommute); proportion of employers operating flexible hours.
		2	*Employers that adopt programs to improve working conditions.*
	Traditional economic activity indicators	26	*Number of businesses.* Includes: number of businesses; start-ups; failures; proxy measures (number of commercial phone lines).
		22	*Development activity.* Includes: number/value of housing starts; number/value of building permits.
	Other (for Prosperity category)	56	*Measures of (adjusted for inflation or cost of living or "real") personal income, salary, or wages (not distributional).* Includes: per capital personal income; average wages; median hourly wages; median income.
		45	*Other.*
		17	*Measures of overall production.* Includes: GDP (gross domestic product); gross metropolitan product; GGP (gross geographic product); proxy measures (e.g., value added per employee).
		15	*(Global) Flow of goods and people.* Includes: imports and exports (trade); air passengers; cargo.
		11	*Indices of the cost of living.* Includes: Cost of Living Index; Consumer Price Index; Retail Price Index.
		11	*Cost(s) of doing business.* Includes: cost of commercial space; cost of services (phone, energy).
		9	*Bankruptcies, business and/or personal.*
		9	*Measures of consumer/business confidence.* Includes: consumer spending; retail sales; perceptions of business proprietors.
		8	*Personal (self-reported) financial well-being.*
		5	*Inflation rates.*
		4	*Effective buying power or disposable income (income-after-tax).* Includes: Buying Power Index.

Category	Element	Number of Indicators	Description
Education	Early childhood development	5	*Preschool children or children entering school who meet child development norms, or have developmentally appropriate behaviour and skills.* Includes: school readiness.
		5	*Availability of and enrollment in early childhood education/intervention programs.*
	Education attainment/school quality	118	*Level of education attained.* Includes: high school (e.g., drop-out rate); high school equivalency diplomas; university degree; certificates; diplomas.
		49	*Performance on specific tests or classes.*
		43	*Enrollment in tests, classes, or schools.*
		21	*Objective measures of school quality.* Includes: number of staff-to-student ratios (e.g., class size); accreditation.
		9	*Residents' (dis)satisfaction with the quality of schools.*
		6	*Qualifications of teachers.* Includes: certification; teachers with tertiary education.
		2	*Other.*
	Adult literacy	17	*Overall adult literacy.*
		2	*Other.*
	Lifelong learning	19	*Enrollment in continuing education programs or courses.* Includes: non-credit higher education; adult education; community education.
		4	*Employer support of employee training.* Includes: budget spent on employee training; formal recognition of the employer as having good practice in training and development.
		4	*Opportunities for lifelong learning (e.g., courses).*
		3	*Other (proxy) measures of interest in lifelong learning aside from enrollment in courses.*
		3	*Participation in training that is job-related.*
		3	*Other.*
	Other (for Education category)	4	*School absenteeism.*
		4	*Other.*
		3	*Measures relating to foreign students (e.g., ESL).*
		2	*Computer literacy.*
Governance	Voluntarism/asso-ciational life	33	*Actual volunteering in general or for specific organizations.* Includes: time devoted to volunteering; frequency of volunteering; number of volunteers (rate).
		6	*Expressed interest in volunteering.* Includes: inquiries about volunteering; applying for a volunteer position; referrals made by volunteer center.
		4	*Other.*
	Citizen action/civicness	9	*Participation in social or political action.* Includes: political meetings, hearings, or rallies; signing a petition; demonstrations; protests; boycotts; marches; writing to the media or city council.
		3	*Existence of civic action groups (e.g., coalitions, advocacy).*

Category	Element	Number of Indicators	Description
		3	*Changes in the community (as a result of social or political action).* Includes: attainment of goals; implemented public comments.
	Human and civil rights	10	*Measures of disability access.* Includes: buildings with access for disabled people; availability of public transportation for disabled people; perceptions of disability access (e.g., satisfaction).
		6	*Measures of other civil rights.* Includes: equal rights; voting rights; justice and law; freedom of expression.
	Voter turnout	47	*Proportion of (registered) people who actually vote in elections.*
		12	*Registration to vote (not the same as actual voting).*
		5	*Other.*
	Perception of political leaders and government services	15	*Perception of political leaders.* Includes: satisfaction with leaders; trust in the government to do what is right; whether leaders care about people in the community; whether the decisions of elected officials reflect community values; effectiveness of politicians.
		12	*Perception of government services.* Includes: treatment by public employees; satisfaction with services (complaints); tax collection and spending.
	Healthy public policy	3	*Existence of policies/ordinances/resolutions that recognize impacts on health.*
		2	*Extent to which health-related issues are discussed by city council.*
		2	*Other.*
	Other (for Governance category)	26	*Objective measures (not perceptions) of government administration and management.* Includes: government employee/population ratio; financial situation.
		9	*Interest in, and awareness of, civic/political affairs.* Includes: receive daily newspaper; able to name city councillors; keeping up with local government news.
		8	*Measures of working together (collaboration).* Includes: joint planning; cooperation with other jurisdictional levels.
		8	*Other.*
		4	*Influence (authority) of higher levels of government on the local government.*
		2	*Existence of a community plan or shared vision for the future, and the extent to which the plan/vision is used or implemented.*
Positive Health and Quality of Life	Well-being/self-reported health	28	*Self-rated "health" (e.g., health status, state of health).*
		8	*Self-rated "physical health".*
		3	*Other.*
		2	*Measures of "well-being" (e.g., Well-Being Index).*
	Life satisfaction	5	*Self-reported satisfaction with life.*
	Happiness	6	*Self-rated level of happiness.*
	Other (for Positive Health and Quality of Life category)	40	*Community quality of life.* Includes: Quality of Life Index; perception of whether the community is a good place to live/work; satisfaction with the community.
		18	*Other.*
		10	*Measures of weather/climate.*

Category	Element	Number of Indicators	Description
		4	*Personal (self-rated) quality of life overall or for specific aspects.*
		4	*Measures of quality of life in seniors.* Includes: being active; living in houses they choose.
		2	*Self-reported vitality or level of energy.*
		2	*Self-reported sense of calmness or peace (of mind).*
		1	*Residents' attitudes and perceptions about personal financial well-being.*
Mastery/self-esteem/cohe-rence	No elements.	3	*Self-rated self-esteem or sense of self-worth.*
		2	*Other.*
Health-promoting behaviours	No elements.	118	*Measures of "substance" use in the general (adult) population (not specific to youth/teens).*
		51	*Whether people participate in preventative screenings or check-ups (e.g., blood pressure, cholesterol, colorectal, prostate, breast exam, mammogram, Pap smear, dental, diabetes, physical check-up, eye examination).*
		47	*Measures of "substance" use in youth or teens specifically.* Includes: smoking; drugs (marijuana, cocaine, heroin, etc.); alcohol.
		44	*Measures of sexual knowledge and practices in youth or teens specifically.* Includes: sexual activity; teen pregnancy (teen fertility rate, teens giving birth, teen abortions).
		43	*Prenatal care and immunization in children/youth specifically.*
		38	*Physical activity and exercise.*
		23	*Eating habits and diet, weight, and use of supplements/alternative products (vitamins, herbal teas, etc.).*
		18	*Use of physical protection devices (e.g., sunscreen, seatbelts, bike helmets).*
		18	*Perception of (specific) unhealthy behaviours as a (community) concern.*
		9	*Immunization in the general (adult) population.*
		9	*Other.*
		7	*Measures of "substance" use during pregnancy.*
		7	*Sexual practices in the general (adult) population.* Includes: unintended conception; abortions.
		4	*Measures of passive smoking and avoidance of it.*
		3	*Self-reports of safe practices in the operation of vehicles.* Includes: self-reports of driving while drunk; whether speed limits are obeyed.
Negative health (disability/mor-bidity)	Stress/anxiety	4	*"Subjective" (self-report) measures of stress, anxiety, depression, or mental health.*
		4	*"Objective" measures of stress, anxiety, depression, or mental health.* Includes: calls to crisis lines.
		4	*"Subjective" measures of the ability to cope with stress, anxiety, depression, or mental distress.*
	Other morbidity/disabi-lity measures	247	*Prevalence, incidence, or self-reports of diseases, conditions, or disability.* Includes: cancers; lung diseases; coronary or cardiovascular disease; high blood pressure; high cholesterol level; stroke; asthma (in adults) and allergies; reportable or notifiable diseases (e.g., HIV/AIDS, hepatitis, tuberculosis, pertussis, etc.); alzheimer's; arthritis or rheumatism; diabetes; intestinal illnesses; substance-exposed newborns; children with "special needs"; caries.

Category	Element	Number of Indicators	Description
		55	*Proxy measures of diseases or conditions.* Includes: hospital data (admissions, discharges); use of health care; taking medication.
		53	*Birth weight.*
		27	*Measures of limitation of life activity due to impairment or (chronic) health problems.* Includes: magnitude or length of disability (staying home from work or school).
		11	*Asthma in young people.* Includes: hospitalization rates; emergency room visits.
	Health utility index	2	*A composite index of health utility (hearing, seeing, communicating, mobility, dexterity, pain, cognition, emotion).* Includes: Health Status Index.
Mortality	Overall mortality rate	28	*Number of deaths (rate), all causes (age-standardized, crude rate, standardized mortality ratio).*
	Infant mortality rate	48	*Number of deaths (rate) in infants (up to the age of 5).*
	Suicide rate	31	*Suicide rate (deaths).*
		7	*Suicide attempts (not necessarily resulting in death).*
		4	*Contemplation of suicide (suicidal thoughts).*
	Life expectancy (including disability-free and health-adjusted life expectancy)	36	*Life expectancy overall.* Includes: disability-free and health adjusted life expectancy; for sub-populations.
		12	*Potential years of life lost.* Includes: lifetimes lost; for sub-populations; for specific diseases or conditions.
	Other (for Mortality category)	161	*Distribution of deaths (rate) by diseases/conditions (cause of death) and/or for sub-populations.*

Table 10: Types of Data (Where the Sources Were Identified) Used for Indicators

Number of Data Sources (%)	Data Source Description
2027 (38%)	Government department/ministry that is not health. Includes federal, provincial/state, municipal government. e.g., education, labour, transportation, planning.
907 (17%)	...ment statistics agency/bureau (census, vital stats, population surveys). e.g., BC Stats, Statistics Canada, Statistics NZ, US Census Bureau.
619 (11%)	Government health department/ministry (health surveillance system, reports, surveys). Includes health and social services/human services/environment/aged care departments.
435 (8%)	Surveys, interviews, or opinion polls (where the lead agency is not identified).
402 (7%)	Non-government (non-partisan), not-for-profit social/environmental organizations or groups. e.g., United Way, Sustainable Calgary, charities.
250 (5%)	Local authorities that are not health. e.g., education board, regional council.
250 (5%)	Other (does not fit in any category above).
130 (2%)	Academic institutions. e.g., universities, colleges.
125 (2%)	Associations or federations with special interests. e.g., professional associations, chamber of commerce, arts association.
78 (1%)	Private for-profit companies (private/business sector).
67 (1%)	Health authorities (not direct government). e.g., regional health authorities, district health authorities, local health board.
53 (1%)	Specific reports or journal articles (where the lead agency is not identified)
53 (1%)	Independent research organizations (not part of a university or government).
5,396 (100%)	Total

Table 11: Survey Respondents' Classification of Indicators Into the Framework

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
Sustainability Indicators						
12) Energy use	6 (19%)	8 (25%)	6 (19%)	5 (15%)	6 (19%)	1 (3%)
13) Water consumption	7 (22%)	8 (25%)	4 (13%)	4 (13%)	6 (19%)	3 (9%)
14) Renewable resource consumption (e.g., fisheries, forests, top soil and foodlands)	12 (37%)	4 (13%)	2 (6%)	2 (6%)	7 (22%)	5 (16%)
15) Waste production and reduction	5 (16%)	5 (16%)	11 (35%)	5 (16%)	5 (16%)	1 (3%)
16) Local production of resources (e.g., food, energy)	10 (31%)	5 (16%)	4 (13%)	1 (3%)	8 (25%)	4 (13%)
17) Land use (allocation of land for different uses)	5 (16%)	7 (22%)	8 (25%)	4 (12%)	6 (19%)	2 (6%)
18) Ecosystem health	6 (19%)	9 (28%)	4 (13%)	3 (9%)	4 (13%)	6 (19%)

	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
19) Ecological footprint	7 (22%)	10 (31%)	4 (13%)	2 (6%)	5 (16%)	4 (13%)

Viability Indicators						
Topic	**Topic never discussed**	**Deciding whether or not to have indicator**	**Indicator already selected**	**Decided will have indicator**	**Decided not to have indicator**	**Don't know**
20) Air quality	1 (3%)	7 (22%)	14 (44%)	5 (16%)	5 (16%)	0
21) Water quality	1 (3%)	7 (22%)	13 (40%)	5 (16%)	6 (19%)	0
22) Toxics production and use (e.g., pesticides, heavy metals, persistent organic pollutants)	6 (19%)	6 (19%)	3 (9%)	2 (6%)	8 (25%)	7 (22%)
23) Soil contamination	10 (31%)	5 (16%)	1 (3%)	1 (3%)	8 (25%)	7 (22%)
24) Food chain contamination (bio-concentration of persistent organic pollutants and heavy metals up the food chain)	13 (41%)	3 (9%)	2 (6%)	0	7 (22%)	7 (22%)

Livability Indicators						
Topic	**Topic never discussed**	**Deciding whether or not to have indicator**	**Indicator already selected**	**Decided will have indicator**	**Decided not to have indicator**	**Don't know**
25) Housing quality, including homelessness	1 (3%)	5 (16%)	17 (53%)	5 (16%)	3 (9%)	1 (3%)
26) Density and land use in the built environment	9 (28%)	6 (19%)	6 (19%)	4 (12%)	5 (16%)	2 (6%)
27) Community safety and security (e.g., crime, accidents)	0	1 (3%)	24 (75%)	3 (9%)	4 (13%)	0
28) Transportation/automobile dominance	7 (22%)	5 (15%)	9 (28%)	3 (9%)	4 (13%)	2 (6%)
29) Walkability	11 (34%)	4 (13%)	4 (13%)	2 (7%)	4 (12.5)	7 (22%)
30) Green/open space (e.g., urban parks)	3 (9%)	6 (19%)	14 (44%)	4 (13%)	4 (13%)	1 (3%)
31) Smoke-free space	12 (37%)	2 (7%)	4 (13%)	1 (3%)	8 (25%)	5 (16%)
32) Noise pollution	14 (44%)	0	1 (3%)	1 (3%)	10 (31%)	6 (19%)

Conviviality Indicators						
Topic	**Topic never discussed**	**Deciding whether or not to have indicator**	**Indicator already selected**	**Decided will have indicator**	**Decided not to have indicator**	**Don't know**
33) Family safety and security (e.g., abuse, having a working smoke alarm)	8 (25%)	2 (6%)	8 (25%)	4 (13%)	6 (19%)	4 (13%)
34) Sense of neighbourhood/place	7 (22%)	7 (22%)	6 (19%)	3 (9%)	5 (16%)	4 (13%)
35) Social support networks	2 (6%)	9 (28%)	9 (28%)	4 (13%)	4 (13%)	4 (13%)
36) Charitable donations	3 (9%)	3 (9%)	4 (13%)	13 (40%)	2 (6%)	1 (3%)
37) Commitment to providing public services (e.g., health care, social services, education, recreation, parks, culture, public security, emergency food and shelter, etc.)	7 (22%)	6 (19%)	12 (37%)	3 (9%)	2 (6%)	1 (3%)

| 38) Demographics | 4 (13%) | 2 (6%) | 21 (66%) | 1 (3%) | 2 (6%) | 2 (6%) |

Equity Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
39) Economic disparity (e.g., disparities in wealth or income, use of food banks, etc.)	0	1 (3%)	23 (72%)	6 (19%)	1 (3%)	1 (3%)
40) Housing affordability	1 (3%)	3 (9%)	21 (66%)	3 (9%)	4 (13%)	0
41) Discrimination and exclusion	8 (25%)	6 (19%)	5 (16%)	1 (3%)	5 (16%)	7 (22%)
42) Access to power and control	13 (41%)	3 (9%)	4 (13%)	0	6 (19%)	6 (19%)

Prosperity Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
43) Diverse economy	8 (25%)	3 (9%)	5 (16%)	7 (22%)	3 (9%)	6 (19%)
44) Local control of businesses	15 (47%)	1 (3%)	0	3 (9%)	6 (19%)	7 (22%)
45) Employment/unemployment	1 (3%)	0	24 (75%)	5 (16%)	2 (6%)	0
46) Quality of employment	3 (9%)	3 (9%)	11 (34%)	5 (16%)	6 (19%)	4 (13%)
47) Traditional economic activity indicators (e.g., housing starts, investment rates, new business start-ups, etc.)	4 (13%)	4 (13%)	13 (40%)	3 (9%)	6 (19%)	1 (3%)

Education Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
48) Early childhood development	7 (22%)	6 (19%)	7 (22%)	3 (9%)	5 (15%)	3 (9%)
49) Education attainment/school quality	1 (3%)	2 (6%)	22 (69%)	6 (19%)	1 (3%)	0
50) Adult literacy	2 (6%)	6 (19%)	12 (37%)	0	6 (19%)	6 (19%)
51) Lifelong learning	8 (25%)	6 (19%)	4 (13%)	2 (6%)	6 (19%)	5 (16%)

Governance Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
52) Voluntarism/associational life	3 (9%)	5 (16%)	15 (47%)	3 (9%)	5 (16%)	1 (3%)
53) Citizen action/civicness (e.g., lobbying, advocacy, demonstrations, etc.)	10 (31%)	3 (9%)	4 (13%)	2 (6%)	9 (28%)	4 (13%)
54) Human and civil rights (e.g., disability access, controls over arbitrary use of police power, etc.)	12 (37%)	2 (6%)	2 (6%)	1 (3%)	8 (25%)	7 (22%)

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
55) Voter turnout	2 (6%)	1 (3%)	19 (59%)	2 (6%)	8 (25%)	0
56) Perception of political leaders and government services	10 (31%)	4 (13%)	2 (6%)	3 (9%)	5 (16%)	8 (25%)
57) Healthy public policy (integration of health impact in policies and decisions)	12 (37%)	7 (22%)	1 (3%)	3 (9%)	3 (9%)	5 (16%)

Positive Health and Quality of Life Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
58) Well-being/self-reported health	4 (13%)	8 (25%)	10 (31%)	1 (3%)	4 (13%)	5 (15%)
59) Life satisfaction	8 (25%)	7 (22%)	5 (15%)	1 (3%)	7 (22%)	4 (13%)
60) Happiness	11 (34%)	6 (19%)	4 (13%)	0	6 (19%)	5 (15%)

Mastery/Self-esteem/Coherence Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
61) Sense of mastery, self-esteem, self-efficacy or locus of control	10 (31%)	7 (22%)	4 (13%)	0	6 (19%)	5 (15%)

Health-promoting Behaviour Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
62) Health-promoting behaviours (e.g., smoking, alcohol consumption, nutrition, exercise, drug use, seat belt use, preventive medical practices, etc.)	4 (13%)	4 (13%)	11 (34%)	3 (9%)	7 (22%)	3 (9%)

Negative Health Indicators Indicators (Disability/Morbidity)

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
63) Stress/anxiety	4 (13%)	6 (19%)	7 (22%)	1 (3%)	8 (25%)	4 (13%)
64) Morbidity/disability measures (e.g., low birthweight, physically disabling conditions, illnesses and diseases)	1 (3%)	0	25 (78%)	3 (9%)	3 (9%)	0
65) Health Utility Index (e.g., general index of overall health based on eight attributes of functional ability - vision, hearing, speech, mobility, dexterity, emotion, cognition and pain/discomfort)	9 (28%)	4 (13%)	1 (3%)	0	10 (31%)	7 (22%)

Mortality Indicators

Topic	Topic never discussed	Deciding whether or not to have indicator	Indicator already selected	Decided will have indicator	Decided not to have indicator	Don't know
66) Overall mortality rate	2 (6%)	2 (6%)	16 (50%)	1 (3%)	10 (31%)	1 (3%)
67) Infant mortality rate	1 (3%)	1 (3%)	18 (56%)	1 (3%)	8 (25%)	3 (9%)

|					
68) Suicide rate	1 (3%)	1 (3%)	18 (56%)	0	10 (31%)	2 (6%)
69) Life expectancy	4 (13%)	1 (3%)	14 (44%)	2 (6%)	7 (22%)	4 (13%)

Table 12:Survey Respondents (Dis)Agreement with Statements About the Results of Indicator Projects

Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
72) Our community indicators project has led to changes in policy that are better aligned with priorities in our community.	3 (10%)	3 (10%)	12 (41%)	11 (38%)	0
73) Our community indicators project has led to changes in programs that are better aligned with priorities in our community.	3 (10%)	2 (7%)	16 (55%)	7 (24%)	1 (3%)
74) Our community indicators project has led to changes in resource allocation that are better aligned with priorities in our community.	3 (10%)	2 (7%)	14 (48%)	9 (31%)	1 (3%)
75) Our community indicators project has led to increased public knowledge about what contributes to a well-functioning community.	0	0	8 (28%)	18 (62%)	3 (10%)
76) Our community indicators project has led to increased intersectoral collaboration around priorities in our community.	2 (7%)	3 (10%)	5 (17%)	18 (62%)	1 (3%)
77) Our community indicators project has led to increased community development in our community.	3 (10%)	2 (7%)	12 (41%)	10 (34%)	2 (7%)
78) Our community indicators project has led to increased public participation in our community.	3 (10%)	4 (14%)	9 (31%)	12 (41%)	1 (3%)
79) Our community indicators project has led to improved economic conditions in our community.	3 (10%)	8 (28%)	17 (59%)	1 (3%)	0
80) Our community indicators project has led to improved social conditions in our community.	2 (7%)	4 (14%)	20 (69%)	2 (7%)	1 (3%)
81) Our community indicators project has led to improved environmental conditions in our community.	3 (10%)	5 (17%)	18 (62%)	3 (10%)	0
82) Our community indicators project has led to improved health for people in our community.	2 (7%)	6 (21%)	19 (66%)	1 (3%)	1 (3%)

Only 29/32 respondents completed this section of the survey. The percentages in the table are based on the 29 responses.

APPENDIX 4: LIST OF CHARTS

Chart 1: Length of Involvement in Indicator Projects for Survey Respondents

Length of Involvement in Indicator Projects
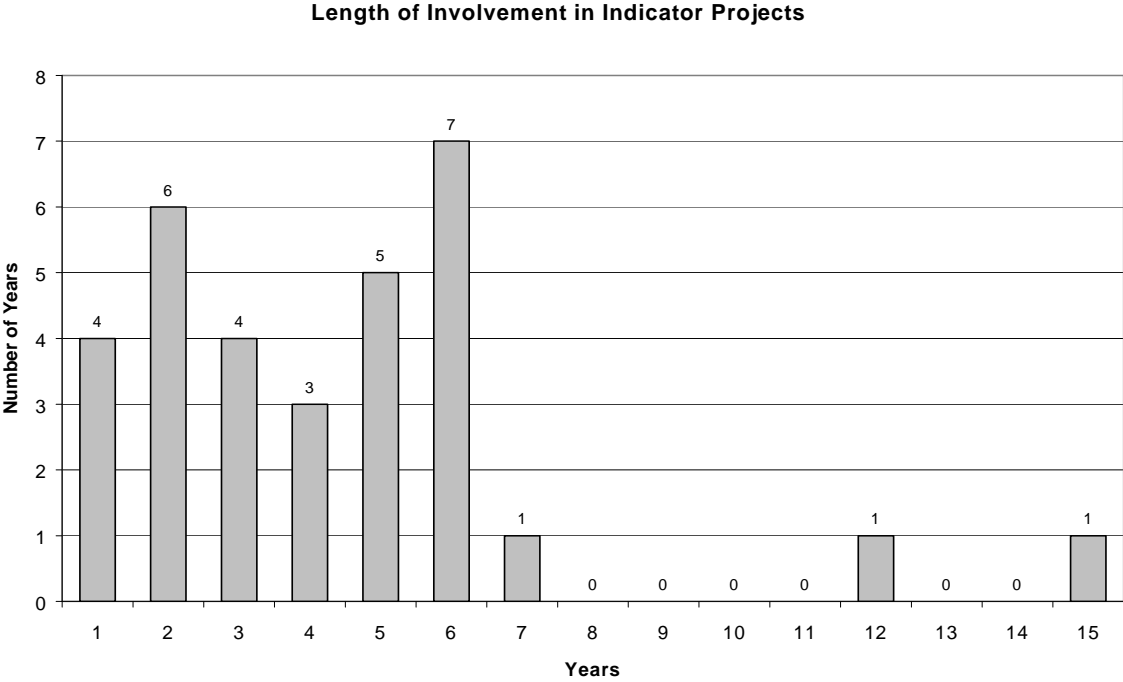
APPENDIX 5: LIST OF RESOURCES OF COMMUNITY INDICATOR GUIDEBOOKS

Canada

Title: **Community Sustainability Auditing Resource Kit**
Contact: University of Victoria
Address: PO Box 1700 STN CSC,
           Victoria, BC V8W 2Y2
           Canada
           Tel: 250-721-7211
Web site: http://web.uvic.ca/~csap/frbc/reskit/menu.html
Description: An online resource for sustainable community auditing. This kit is mainly intended for communities with a threatened resource-based economy and has useful information about the development and use of sustainability auditing protocols.

Title: **Environment and Sustainable Development Indicators (ESDI) Initiative**
Contact: National Roundtable on Environment and the Economy
Address: National Round Table on the Environment and the Economy
           344 Slater Street, Suite 200
           Ottawa, Ontario K1R 7Y3
           Canada
           Tel: 613-992-7189
           E-mail: admin@nrtee-trnee.ca
Web site: http://www.nrtee-trnee.ca/eng/programs/Current_Programs/SDIndicators/Approach_to_Indicators/SDIndicators_Approach_e.htm
Description: A three-year project aimed at developing and testing indicators. Workshops are available for training in indicator selection and data gathering.

Title: **Pilot Project to Develop a Community Health Measure for Small and Rural Communities**
Contact: The Canadian Federation of Agriculture and Federation of Canadian Municipalities
Address: Federation of Canadian Municipalities
24 Clarence Street
Ottawa, Ontario K1N 5P3
Canada
Tel: 613-241-5221
E-mail: federation@fcm.ca
Web site: http://www.fcm.ca/english/national/ruralhealth-e.pdf
Description: This web site provides a description of a 1999 pilot project in three small Canadian communities. The report presents suggestions to be used as tools for small and rural communities to undertake future community discussion and action.

Title: **Signs of Progress, Signs of Caution**
Contact: Ontario Healthy Communities Coalition
Address: 1202-415 Yonge Street
Toronto, Ontario M5B 2E7
1-800-766-3418
Web site: http://www.opc.on.ca/ohcc/publications/signs/signspdf.htm
Description: The goal of this guidebook is to help the user(s) make "communities healthier and more sustainable". A number of steps necessary for developing health and sustainability indicators are described and worksheets to accompany each step are provided. A useful listing of potential indicators of health and sustainability is also included.

Title: **Sustainable Community Indicators Program – User's Manual**
Contact: CMHC and Environment Canada
Address: scip-pidd@ec.gc.ca
Web site: http://www.ec.gc.ca/scip-pidd/English/indicators.cfm
Description: Detailed manual and guide to conceptualizing sustainability, identifying target markets, choosing a framework and developing and evaluating indicators. The manual accompanies the Sustainable Community Indicators Program database. A copy of the database and manual can be downloaded from the address listed above.

Title: **Sustainable Community Resource Package**

Contact: Ontario Roundtable on Environment and Economy

Address: The Ontario Roundtable was disbanded in 1995, but the resource can found at the web site listed below.

Web site: http://www.law.ntu.edu.tw/sustain/intro/ortee/

Description: A resource package on sustainable communities featuring case studies of community sustainability initiatives in Ontario. This package also provides a step-by-step guide to profiling a community including methods for looking at community activities in terms of four quadrants: environmental, economic, social and health. The package also outlines action plans and evaluation processes for healthy community development as well as literature about models of sustainable community living.

United States

Title: **Check Your Success. A Guide to Developing Indicators for Community Based Environmental Projects.**

Contact: Department of Urban Affairs and Planning, Virginia Tech, US. EPA

Address: Dr. JoAnne Carmin
               Department of Urban Affairs and Planning
               105 Architecture Annex, MC 0113
               Virginia Polytechnic Institute and State University
               Blacksburg, VA 24061
               USA
               Tel: 540-231-5426

Web site: http://www.uap.vt.edu/checkyoursuccess

Description: Although the primary focus of this guide is environmental, the authors adopt a broad vision of environment (social, economic, environmental, social and organizational). The first part of the manual provides information on the benefits of developing and measuring indicators and then leads into a number of case studies. One of the most useful sections of this book is the "Indicator Workshop" which is presented in the appendices. This section is easy to follow and contains a number of useful worksheets and exercises.

Title: **Community Based Environmental Protection: A Resource Book for Protecting Ecosystems and Communities.**
Contact: US EPA
Address: Community Based Environmental Protection
1200 Pennsylvania Avenue, NW
Mail Code 1807T
Washington, DC 20460
USA
Tel: 202-566-2182
Web site: http://www.epa.gov/ecocommunity/tools/resourcebook.htm
Description: This resource book includes sections on how and why to select and use community indicators. It also includes discussion of how the ecosystem is integrally linked to the economy and to the quality of life and social aspects of each community. The guide is available in PDF format on the US Environmental Protection Agency web site.

Title: **The Community Health Indicators Handbook**
Contact: Redefining Progress
Address: One Kearny Street
Fourth Floor
San Francisco, CA 94108
USA
Tel: 415-481-1191
Toll Free: 1-800-896-2100
Web site: www.rprogress.org
Description: A detailed handbook for creating measures of community health, well-being and sustainability progress toward community sustainability. The handbook contains extensive information on community indicators including a step-by-step guide to developing an indicator project, a glossary, case studies, resources and a national directory of indicator projects.

Title: **Community Outcomes Toolkit**
Web site: http://ag.arizona.edu/fcr/fs/nowg/prodev_newlinks.html
Description: This toolkit is part of the University of Arizona's web site for Evaluating National Outcomes. It contains a step-by-step plan for identifying and evaluating community building indicators. The web site provides examples of indicators and lists tools and resources available to help communities set goals and develop, measure and evaluate community indicators.

Title: **The Community Toolbox**
Contact: ToolBox@ukans.edu
Web site: http://ctb.lsi.ukans.edu/tools/EN/tools_toc.htm
Description: This web site was created by the University of Kansas Work Group on Health Promotion and Community Development in Lawrence, Kansas. The core of the Tool Box is the "how-to tools." The how-to sections use simple language to explain how to do the different tasks necessary for community health and development. There are sections on developing indicators, leadership, strategic planning, community assessment, advocacy, grant writing and evaluation. Each section includes a description of the task, advantages of doing it, step-by-step guidelines, examples, checklists of points to review and training materials.

Title: **Community Visioning and Strategic Planning Handbook**
Web site: The handbook is available at www.scs.unt.edu/classes/CSAG/5790/001/CmtyVisioning/com_visioning_handbook1.htm
Description: The University of North Texas has posted this community visioning and strategic planning handbook on its student web site. The handbook was developed through a grant from the Ford Foundation and the Carnegie Corporation of New York and produced by the Alliance for National Renewal and the National Civic League. It presents steps toward developing a "community vision" and includes sections on selecting and evaluating key performance areas.

Title: **Green Communities Assistance Kit**
Contact: r3green@epa.gov
Web site: http://www.epa.gov/greenkit/indicator.htm#select
Description: The US Environmental Protection agency has a Green Communities Project Web site that details how to select, use, evaluate and report on community indicators..

Title: **Guide to Sustainable Community Indicators**
Contact: Maureen Hart
Address: Sustainable Measures
P.O. Box 361
North Andover, MA 01845
USA
Tel: 978-975-1988
Web site: http://www.sustainablemeasures.com/
Description: This comprehensive guide covers all the steps necessary for developing indicators. It begins with a description of the issues associated with sustainability, and then leads the reader through the necessary steps for organizing and measuring sustainability indicators. The appendices contain helpful information such as: a listing of community indicators used by other projects, resources and examples of other community indicator projects.

Title: **Measuring Community Success and Sustainability: An Interactive Workbook**
Contact: Northern Central Regional Center for Rural Development
Address: Iowa State University
108 Curtiss Hall
Ames, IA 50011-1050
USA
Tel: 515-294-8321
Web site: http://www.ncrcrd.iastate.edu
Description: This guide was developed to help communities learn how to measure the effects of rural development and conservation efforts. The focus of the guide is on five key outcomes that were developed by rural communities. The outcomes range from "increase in knowledge, skills and ability of local people" to "appropriately diverse and healthy economics". The guide begins with a general introduction to measuring indicators and then outlines a measurement plan and year-end assessment for each of the five outcomes stated.

Title: **Monitoring Community Sustainability**
Contact: Izaak Walton League
Address: 707 Conservation Lane
Gaithersburg, MD 20878
USA
Tel: (301) 548-0150
Toll-Free: (800) IKE-LINE (453-5463)
 E-Mail: general@iwla.org or sustain@iwla.org

Web site: http://www.iwla.org/sep/pubs/monitor.html

Description: This 23-page workshop guide, published in 1998, provides directions for identifying and measuring indicators that reflect a community's progress toward goals that promote sustainability.

Title: **Neighborhood Sustainability Indicators Guidebook**
Contact: Crossroads Resource Center
Address: P.O. Box 7423
Minneapolis, Minnesota 55407
USA
Tel: 612-869-8664
kmeter@crcworks.org
Web site: http://www.crcworks.org/guide.pdf
Description: This guidebook was produced for the Urban Ecology Coalition of Minneapolis. It is aimed at building "strong, self-determined, sustainable communities." The guidebook defines "neighborhood sustainability indicators" and provides a guide to developing and refining indicators.

Title: **Outcomes Toolkit: The Results Oriented System for Community Improvement**
Contact: Michael Bilton, Director, ACT National Outcomes Network
Address: The Healthcare Forum Foundation
180 Montgomery St. Suite 1520
San Francisco, CA 94104
USA
Tel: 415-248-8411
Fax: 415-248-0411
E-mail: mbilton@healthforum.com
Web site: www.act-toolkit.com
Description: Web-based application for developing and tracking community indicators. On this web site, stakeholders can develop a community profile, receive technical assistance in developing indicators and share information.

Title: **Sustainability Starts in your Community**
Contact: earthday@earthday.net.

Address: **Earthday Washington, D.C., USA**
1616 P Street NW, Suite 200
Washington, D.C. 20036 USA
Tel: 202-518-0044
Fax: 202-518-8794

Earthday Seattle, USA
811 First Avenue, Suite 466
Seattle, WA 98104 USA
Tel: 206-876-2000
Fax: 206-876-2015
Web site: http://www.earthday.net/pdf/goals/Sustainability_Guide.pdf
Description: This community indicator guide was produced in April 2002 by Redefining Progress and Earth Day Network. It is a step-by-step guide to developing and reviewing community indicators. The guide also provides suggestions for ways to involve the larger community in indicator projects.

Title: **Sustainable Community Indicators: a Review of National Methods and Suggestions**
Contact: Long Island University, Institute for Sustainable Development
Web site: www.luinet.edu/sustain/si.html
Description: Review and comparison of ten leading indicator projects, definitions of sustainability and indicators and discussion of how to start an indicator project. Online tools are also available toward developing and maintaining community indicator projects.

Title: **The Sustainable Development Toolkit**
Contact: John Lambie, Director, Florida House, Institute for Sustainable Developmentjl@i4sd.org
Address: Florida House Institute for Sustainable Development, Inc.
               4600 Beneva Road
               Sarasota, Florida 34233
               USA
               Tel: 941-927-2020
Web site: http://www.i4sd.org/toolkit.htm
Description: A toolkit of process and design tools to support citizen-based sustainable community development planning processes. One of the sections in the toolkit is aimed at helping citizens and other stakeholders develop sustainable community indicators.

Europe

Title: **Cities Environment Reports On the Internet (**CEROI **)**
Contact: CEROI Secretariat
Address: UNEP/GRID-Arendal
               Longum Park
               Service Box 706
               N-4808 Arendal
               Norway
               Fax: +47 37 03 50 50
               E-mail:ceroi@grida.no
Web site: http://www.ceroi.net/ind/index.htm
Description: This project follows up on Chapter 40 of Agenda 21. CEROI provides a template and software including an Encyclopedia of Indicators for member cities wishing to create and use indicator data on the Internet.

Title: **Communities Count: The LITMUS Test**
Contact: New Economics Foundation
Address: Cinnamon House
6-8 Cole Street
London SE1 4YH
UK
Tel: 020-7407 7447
Web site: http://www.neweconomics.org/uploadstore/pubs
Description: This useful guidebook describes the necessary steps to develop and monitor indicators. It also describes the approach taken and lessons learned from the LITMUS project (local indicators to monitor urban sustainability). The guide is user friendly and easy to follow.

Title: **The Dashboard of Sustainability**
Contact: Consultative Group on Sustainable Development Indicators (CGSDI)
Address: CGSDI Secretariat
International Institute for Sustainable Development
161 Portage Avenue East, 6th Floor
Winnipeg, Manitoba R3B 0Y4
Canada
Tel: +1-204-958-7700
E-mail: phardi@iisd.ca
Web site: http://www.iisd.org/cgsdi/intro_dashboard.htm
Description: The Dashboard of Sustainability is an online tool designed to be understood by experts, the media, policy-makers and the general public. Using the metaphor of a vehicle's instrument panel, it displays country-specific assessments of economic, environmental, social and institutional performance toward (or away from) sustainability.

Title: **Local Quality of Life Counts**
Contact: Mark Jeffcote, Sustainable Development Advisor
Address: Department of the Environment, Transport and the Regions
Free Literature
PO Box 236
Wetherby LS23 7NB
UK
Tel: 0870 1226 236
Web site: http://www.defra.gov.uk/environment/sustainable/index.htm
Or http://www.1a21-uk.org.uk
Description: A handbook offering a guide for measuring sustainable development and quality of life in local communities. It presents a menu of 29 indicators, guidance for preparing community strategies and developing indicators, suggested methodologies for collecting data, a checklist of issues to stimulate discussion and a list of eight "best value" performance indicators.

Title:	**Local Sustainability: Campaign Interactive.**
Contact:	European Commission
	Mr. Anthony Payne
	Campaign Co-ordinator & Head of Office
	E-mail: campaign.anthony@skynet.be
Address:	European Sustainable Cities & Towns Campaign
	Rue de Trèves/Trierstraat 49-51
	box 3
	B - 1040
	Brussels
	Phone: +32 2 230 53 51
	E-mail: campaign.office@skynet.be
Web site:	http://www.sustainable-cities.org/sub12a.html
Description:	The European good practices Information Service and Best Practices Database. Contains examples of good practices and policy documents on sustainability and the urban environment.

Title:	**Towards a Local Sustainability Profile**
Contact:	Ambiente Italia
Address:	Instituto di Ricerche (responsabile del coordinamento scientifco)
	all'attenzione di Claudia Semenza
	Via Poerio 39
	20129 Milano, Italy
	Tel: 0039 02 277441
	E-mail: ecip@ambienteitalia.it.
Web site:	http://www.sustainable-cities.org/indicators/index2.htm
Description:	The European Common Indicators is a monitoring initiative focused on sustainability at the local level. The project is ongoing and accepting new participants. Support services are provided to participating authorities during the testing phase: technical support (scientific expertise, helpdesk, workshops, etc.), methodological development, pilot activities on the Ecological Footprint, good practice collection and exchange, dissemination activities, and evaluation, reporting, recommendations and guidelines.

Title: **Urban Indicators Toolkit**
Contact: United Nations Center for Human Settlements (Habitat)
Address: Global Urban Observatory and Statistics
                 Urban Secretariat, UNCHS (Habitat)
                 PO Box 30030
                 Nairobi
                 Kenya
                 Tel: 254-2-623119
                 Fax: 254-2-623050
                 E-mail: guo@unchs.org
Web site: www.urbanobservatory.org/indicators>
Description: UNCHS offers a toolkit and guide for cities participating in the
                 implementation of the Habitat Agenda. The guide includes detailed
                 indicator methodology sheets and examples of toolkit spreadsheets for
                 reporting.

Title: **WHO Healthy Cities Project**
Contact: WHO Center for Urban Health
                 WHO Regional Office for Europe, Healthy Cities Project
Address: 8 Scherfigsvej
                 DK-2100 Copenhagen
                 Denmark
                 Tel: 45 39 17 12 24
Web site: http://www.who.dk/healthy-cities/hcp.htm
Description: Worksheets for 32 urban health indicators are presented in this booklet.
                 The indicators listed have been developed from the data collected from
                 the European Healthy Cities project. The worksheets provide definitions,
                 methods of calculation, unit of measurement and a number of other
                 descriptors.