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Directions for Indicators of Urban Sustainability: Preliminary Review of Program Planning Options

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Table on the Environment and the Economy

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1. Purpose of Report

This report provides preliminary guidance to the NRTEE in determining the potential benefits & risks associated with pursuing a number of indicators-based initiatives aimed at advancing the goal of the proposed Urban Sustainability Program. The report pays particular attention to the Program's proposed Track 2, focusing on the development of indicators or criteria related to urban sustainability, livability and competitiveness.

2. NRTEE Programming Context

In January 2001, NRTEE released its Millennium Statement identifying four imminent challenges facing Canadian society. One of these is the management of urban spaces to create healthier environments. Program planning to advance urban sustainability initiatives to address this challenge has been ongoing since March 2001.

The goal of the proposed Urban Sustainability Program is to improve the quality of life in and competitiveness of Canada's urban centres. While social aspects will be taken into consideration, the primary emphases of the Program will be the economy and the environment. The work of the Urban Sustainability Program will conclude with the release of a State of the Debate report by March 2003.

NRTEE is proposing a two-track approach to program delivery. Track 1 will focus on Ecological Fiscal Reform (EFR) and will form the basis of the Urban Sustainability Program. Activities conducted to date on this track have included a detailed review of possible fiscal instruments and the identification of programming options. The application of EFR principles to urban sustainability, livability and competitiveness is seen as a niche specialization for NRTEE.

A proposed second program track will develop criteria for or indicators of urban sustainability. The Track 2 Indicators initiative is intended to complement the ongoing Environment and Sustainable Development Indicators Initiative (ESDI). ESDI involves the development of a national set of indicators by Cluster Groups of experts, relying on existing indicator and data collection initiatives. ESDI is grounded in a "Capital Model" framework using indicators which measure the stocks of produced, human and natural capital needed by future generations. While not initially conceived to support indicators of urban sustainability, several proposed indicator sets are directly relevant to this program. For example, Cluster Groups will be identifying indicators of natural capital in order to monitor land and soils, air quality and atmospheric conditions and water resources.

It is expected that this two-track approach to the Urban Sustainability Program will permit NRTEE to advise the federal government on its role in urban affairs, influence national urban policies, recommend stronger urban environmental practices, and raise public awareness.

3. Synthesis of Indicators-Based Initiatives

This report's analysis is based mainly on a review of fifteen indicators-based initiatives carried out in Canada, the United States and Globally, profiles of which are attached as Annex 1. Table 1 presents a synthesis of these fifteen initiatives by summarizing seven characteristics relevant to a future NRTEE Track 2 Indicators Initiative.

These characteristics include:

- i. Providing a national perspective on urban sustainability;
- ii. Focusing on urban sustainability;
- iii. Oriented towards influencing national policies;
- iv. Relying on indicators of the urban environment;
- v. Using indicators for ranking or scoring purposes;
- vi. Relatively easy access to indicators by end-users; and,
- vii. Designing tools or methodologies for the development and application of indicators.

Table 1 Characteristics of Indicator-Based Initiatives

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
i. National Perspective	4	7	4	4	4	7	7	7	7	7	7	4	4	4	4
ii. Urban Focus	4	4	4	4	7	7	7	4	7	4	4	4	4	4	4
iii. Policy Focus	7	7	4	7	4	4	7	7	7	7	4	4	4	4	4
iv. Eco-indicators	7	4	7	7	4	4	4	4	7	4	4	7	4	4	4
v. Ranking	7	7	7	7	4	7	7	7	7	7	7	7	7	7	7
vi. User access	4	4	4	4	4	7	4	4	4	4	4	4	4	7	7
vii. New tool/method	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
1. Carleton U./StatsCan-Community Accounting						9. CCE-The Community Resilience Project									
2. IISD-Measuring Progress in NA Communities						10. UBC-The Headwaters Project									
3. FCM-Quality of Life Reporting System						11. Hamilton-Wentworth-Air Quality Initiative									
4. EC/CMHC-Sustainable Community Indicators						12. Urban Institute-National Neighborhood Initiative									
5. Sierra Club-Annual Rio Report Card						13. UNCHS (Habitat)-Global Urban Observatory									
6. Pembina Institute-Alberta GPI Project						14. ISTAT-Urban Environmental Indicators									
7. Fraser Basin Council-Sustainability Indicators						15. ICLEI-Cities 21 Project									
8. IISD-City of Winnipeg Quality of Life Indicators															

Four of these fifteen initiatives incorporated urban environmental indicators at a national or international level - the EC/CMHC *Sustainable Community Indicators Programme*, UNCHS (Habitat) *Global Urban Observatory*, ISTAT's *National Urban Environmental Indicators*, and ICLEI's *Cities 21 Project*. Preliminary analysis of the indicators used by these four initiatives pointed to the following factors to be considered in developing a framework for measuring urban sustainability. (A list of urban environmental indicators used by these initiatives is provided in Annex 2.)

1. **National Data Source:** There was greater success using urban data sets available nationally. The *Cities 21* indicators were dependent on data collected locally, and faced difficulties in both data collection and data comparability.
2. **Policy Monitoring Function:** All indicators selected for the *Cities 21* initiative measured one of two policy objectives - Climate Protection and Freshwater Management – and were intended to serve a policy implementation monitoring role.
3. **Sectoral Focus:** Three principle sectors were *Urban Air Quality/Human Health*, *Urban Transportation* and *Urban Water Supply/Wastewater Treatment*. Other sectors included Urban Waste Management and Urban Energy consumption, Green/Open Space and Noise.

4. **Use of Qualitative Indicators:** Qualitative indications of support for different types of urban environmental policies or initiatives were included in the ISTAT and UNCHS indicators. For example – does a city have in place an environmental management plan?
5. **Number of Indicators:** There was considerable variation in the number of urban environmental indicators – ranging from 12 relatively simple indicators (EC/CMHC) to 43 relatively complex indicators (Cities 21).
6. **Comprehensiveness:** In the case of EC/CMHC and UNCHS, environmental indicators were one sub-set in a comprehensive set of indicators dealing with environmental, social and economic dimensions of sustainability.
7. **Comparability:** The experience of ICLEI Cities 21 suggests that cities must be grouped in sets according to size for results to be valid and relevant.
8. **Measures of Quality of Life rather than Organizational Performance:** All four sets of indicators rely exclusively on broader, quality of life indicators, rather than measures of organizational performance. Municipal organizational performance measurement indicators are used as a management tool that integrates financial and performance data to assist in decision making within municipalities. These include municipal benchmarking initiatives which develop service performance measures, capture performance data and analyze and benchmark results to identify best practices of municipal service efficiency and quality.

4. Priority areas / gaps

The analysis of the fifteen initiatives pointed to at least three emerging priority areas, each characterized by several features:

A. Expanding the scale, scope and relevance of models for measuring/monitoring sustainability

Rather than rely on any one dimension of sustainability, the emphasis is on developing holistic sets of indicators – comprising all three legs of sustainability. Furthermore, rather than simply developing indicators, the focus is on implementing, applying and testing indicators at the policy, program and project levels.

There is also strong emphasis on expanding models to different jurisdictions – international, provincial, regional, local - in order to either allow for greater data comparability or ensure greater relevance of indicators to local conditions. Specific actions being taken include improving local methods for data collection and analysis, and developing interactive websites with on-line inventories of indicators and initiatives. The nature of these initiatives requires greater reliance on partnerships and collaborative efforts to deliver more diverse programs.

B. Using indicators as tools for democratization, local empowerment and accountability

Indicators are serving as the software for reporting or accounting tools, typically offering an alternative to government-sponsored views of the world. Indicators are also increasingly seen and being used as a source of political empowerment for local stakeholders - citizens, community organizations and municipalities.

An emerging theme is the support for local stakeholder involvement in the process of tools/indicator development. Involving citizens in the process is used to increase awareness and understanding, democratize access to information, and strengthen local capabilities to develop

and apply indicators on an on-going basis. Local capacity building is also being addressed by means of software or guides to assist local stakeholders with the design of indicators, data collection and analysis.

C. Applying indicators to municipal planning and programming

Indicators are being used to guide city strategy development and program design. Once strategies and programmes are in place, indicators are serving as a monitoring tool.

The analysis also points to at least three gaps:

A. Limited National Perspective

Relatively few initiatives measuring and monitoring the urban environment provide a national perspective on urban sustainability. This is due in part to a very limited reliance on nationally produced indicator sets of the urban environment. There is also a tendency to equate urban with municipal, rather than taking a broader view of urban sustainability.

B. Weak Link to National Policy Debates

There is a similar limited use of indicators to advance national policy objectives. The FCM Quality of Life program is an exception, though it does not currently seek to measure the urban environment.

C. Reluctance to Rank Jurisdictions

A third gap is the near total absence of comparative ranking exercises, particularly the use of indicators of urban sustainability to rank cities. Ranking is unpopular for several reasons - elected officials are wary of having their municipality rank poorly, while national associations of municipalities are reluctant to impose such a system on their memberships. Ranking is also seen as incapable of capturing the important variety present in individual municipalities. Ultimately, the difficulty of relying on ranking rests with the inherent challenge of developing a methodology that can withstand these various sources of opposition.

5. Potential NRTEE Roles

The following suggested roles and associated products build on existing NRTEE roles, the proposed Urban Sustainability Program mandate, and priorities/gaps in other indicators-based programs. There are at least three potential roles, each of which can be delivered using different products:

- **Influencing urban policy, at all levels of government** – This role would present a constructive alternative to seeking constitutional and fiscal reform to strengthening local government and focus on the roles to be played by the federal government in contributing to urban sustainability.
- **Advising urban decision-makers on good practice** - particularly at the national level.
- **Raising public awareness** – with the ultimate objective of influencing urban policy

Each of these roles could be delivered by means of any number of products, each of which would have to be evaluated against benefits and risks outlined in Table 2. The analysis suggests that in selecting any number of specific directions, NRTEE is faced with a tradeoff between low-risk, low-benefit products and high-benefit, high-risk products.

Table 2 Benefits & Risks Associated with Various Programming Options

Benefits to Pursue	Risks to Avoid
1. Product is an effective tool for influencing national urban policy debate.	1. Onerous data collection, especially when relying on municipal capacity to collect data.
2. Product strengthens urban environmental practices.	2. Damaging criticism from academic community, especially in relation to indexing and weighting indicators, using indicators to compare jurisdictions, and measuring change over time.
3. Product contributes to increased public awareness.	3. Political backlash from elected officials and urban decision makers.
4. Product preparation and delivery builds on and complements the ESDI program.	4. Requires entering into partnerships which are either difficult to manage or result in loss of visibility.
5. Product provides NRTEE with an opportunity to play a credible, visible, and distinct role in the field.	5. Failure to sustain momentum, either due to lack of institutional support for the process, or failure to integrate the process into an existing decision-making framework.

1. **Methodology for Measuring Urban Sustainability:** This product would be delivered by means of a panel of experts. The process would establish a framework for measuring urban sustainability, including the possibility of using these measures for purposes of a ranking exercise. The panel would also identify innovative means of using existing data. One issue to be resolved would be the number of legs of sustainability to be incorporated.

Principle Benefits: Makes effective use of the ESDI program; Essential step in delivery of all other indicators-based product.

Principle Risk: None

2. **Report on the State of the Urban Environment in Canada:** Application of the agreed upon indicators framework could take the form of an annual report providing key measures of urban sustainability in Canada. Rather than measuring the environmental performance of individual cities, the report would provide national measures of the urban environment in the form of one or more national indices. A report measuring the state of Canada's urban air quality, urban transport, or urban water quality would provide a framework for individual Canadian cities to evaluate their own environmental performance, without submitting this level of evaluation to the national public domain. This product would also place Canada's urban environment in an international context. Reliance on urban indicators provided by the UNCHS could be used for this global perspective.

Principle Benefit: Contributes to increased public awareness, though with limited policy impact.

Principle Risk: None

3. **Ranking of Canadian City Environmental Performance:** Reporting on the State of the environment in individual Canadian cities would rely on the same data sets as a National State of the Urban Environment Report. However, focusing on individual cities could allow for comparative scoring and ranking. Ranking would rely on an index of urban environmental quality applied to individual cities. The resulting index would be disaggregated to better explain the ranking and provide clearer guidance on areas requiring for improvement.

Principle Benefits: Strong tool for public awareness, strong potential impact on policy debate, and good for corporate visibility.

Principle Risks: Susceptible to political backlash and methodological weakness.

- 4. Comprehensive Report on the State of Canadian Cities and Associated Ranking:** This product would involve a comprehensive monitoring and ranking of cities, involving all three legs of sustainability. Disaggregated indices would be available for each leg in order to provide clear direction for improvement. These indicators would allow a more comprehensive analysis of the relative competitiveness of Canadian cities – both to each other and to other international cities.

Principle Benefits: Most powerful tool for influencing policy debate, providing direction to urban decision makers, and enhancing corporate visibility.

Principle Risks: Onerous data collection, and susceptible to political backlash and methodological weakness.

- 5. Develop an EFR Monitoring Tool:** The framework for indicator development could focus specifically on a series of measures related to the impact of Ecological Fiscal Reform on urban sustainability. This would enable NRTEE to monitor and evaluate both the need for EFR and the performance of EFR tools. The resulting products would still take the form of a National Index of Urban Sustainability or City Ranking, but focused specifically on EFR-related performance.

Principle Benefits: Focused impact on policy debate and environmental practice

Principle Risks: Data collection challenges, and potential for backlash if ranking is used.

- 6. Best Practices Publication:** This product could accompany the State of the Urban Environment or State of Canadian Cities reports. While it is not an alternative to ranking city environmental performance, it does allow for illustrations of specific local initiatives. Best Practices could also be oriented specifically to EFR successes.

Principle Benefit: Potential contribution to strengthening urban environmental practice.

Principle Risk: None

- 7. Enable intra- and inter-national networks:** NRTEE could serve as a hub for the extensive number of indicators-based initiatives taking place at the municipal level. Ideally, these networks would bring together cities of similar size to allow for greater ease of comparison, including networks of comparable cities across different national jurisdictions.

Principle Benefits: Increased credibility for NRTEE as a national leader, potentially valuable tool for influencing urban decision makers.

Principle Risk: Requires extensive partnerships, methodologically limited due to different types of indicators and approaches to data collection.

Annex 1 – Profiles of Initiatives (see attached file)

Annex 2 – Urban Environmental Indicators (see attached file)