

What Planners Need to Prepare for Climate Change: Responses to a Questionnaire

by Norval Collins, MCIP¹

A workshop on adaptation to climate change and land use planning held as part of the CIP national conference in Halifax, in July of 2003, provided a snapshot of understanding of climate change issues across the country and identification of planners' needs. The workshop presented a framework developed for a guide incorporating adaptation to climate change into environmental impact assessment (EIA), and proposed a similar approach for a land-use planning guide. A total of 46 planners registered, with 26 of them filling out short questionnaires. This article analyzes their responses with a focus on identifying what a useful planner's guide to adaptation to climate change should contain.

Climate change has emerged as a long-term environmental challenge of global significance. The Inter-governmental Panel on Climate Change (IPCC) concluded that, in the 20th century, average planetary surface temperatures increased 0.6° (+/- 0.2°C) (Houghton *et al.*, 2001). This apparently small change in average temperature may not appear to be significant – but its projected impacts are of serious concern, including greater variation and frequency of extreme weather events, such as floods, droughts and hurricanes. As well, coastal areas are at risk around the world from global sea level rise, projected to reach a vertical average of 0.09 m to 0.88 m by 2100. The current levels of greenhouse gases (GHG) in the atmosphere are so high that in the short term even immediate reductions in emissions will not be rapid enough to reverse the observed changes in climate (Burton and van Aalst 1999).

Mitigation and adaptation are both necessary to deal with climate change, but must be distinguished. Mitigation aims to reduce the greenhouse gases that appear to cause climate change, whereas adaptation deals with the response to the reality of climate change. Mitigation works to lower GHG emissions through mechanisms such as the Kyoto Protocol, control technology, monitoring, auditing, and trading. Adaptation becomes even more important if climate change cannot be averted; adaptive responses aim to reduce risks and shift policy and planning to more appropriate areas. Pielke (1998), in an IPCC comment on decision-making, pointed out that adaptation:

- is a portfolio of responses,
- is a shared responsibility, and
- links the documented needs of today with the expected problems of tomorrow.

Any adjustment – whether positive, reactive, or anticipatory – that can respond to the forecast or actual consequences associated with climate change is an adaptation.

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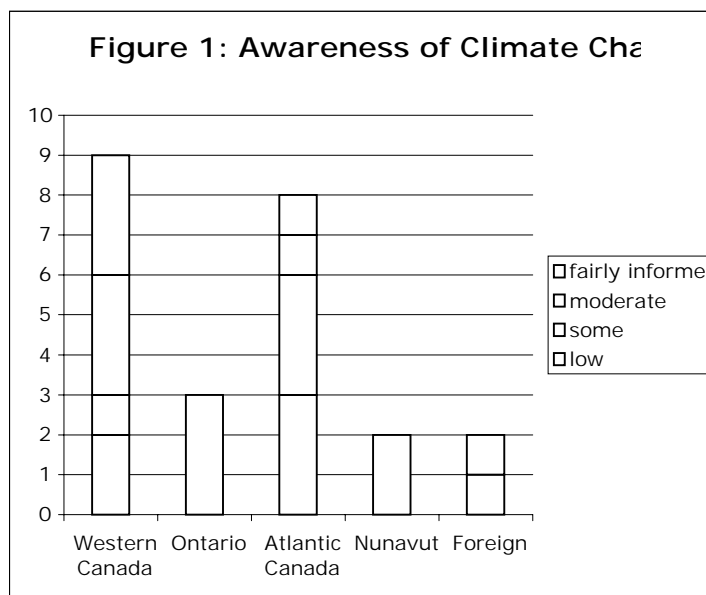
Adaptation implicitly recognizes that future climate change will occur and must be accommodated in policy².

Adaptation is concerned with responses to both the adverse and positive effects of climate change, and can be either *reactive* or *anticipatory*. Incorporating climate change in the land use planning process is anticipatory; rebuilding a road after it washes out in a storm is reactive. Adaptation to climate change strengthens the importance of land-use planning, and makes many of the tools used by planners increasingly critical to the protection of life and infrastructure.

At the 2003 workshop, a majority of respondents to the questionnaire worked for municipal planning departments (58 %), and almost 30 % worked for provincial departments related to municipal planning. The remainder were consultants, students, or worked for the federal government, universities or NGOs.

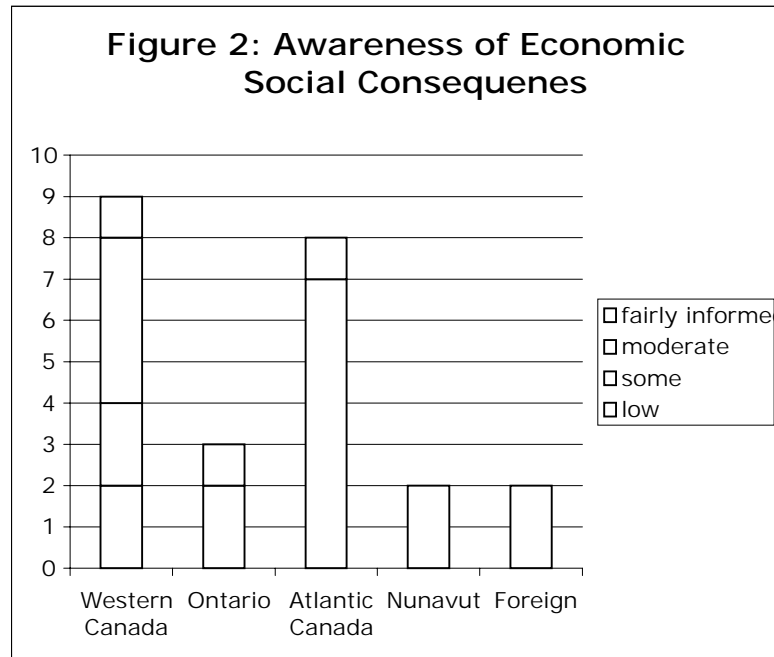
Respondents were from all provinces, except Manitoba and Quebec, providing a good geographic overview of the country. Most were from British Columbia, Alberta and New Brunswick — 3 or 4 planners from each. Two were from Nunavut, providing useful and important insight into the view from the north. Two responding participants were from outside Canada, one from New York City, and another from the State of Victoria, Australia.

Most respondents rated the awareness of climate change issues within municipalities as extremely low (Figure 1). Awareness was highest in British Columbia and Alberta. In Nova Scotia, the 'fairly informed' ranking specifically referred to municipal staffs, but not politicians. In New Brunswick, provincial representatives felt there was general awareness of climate change issues, but priority concerns and needed actions were unclear.



² *Adaptability* refers to the degree to which adjustments are possible in practices, processes, or structures of systems to projected or actual changes of climate. Adaptation can be spontaneous or planned, and can be carried out in response to or in anticipation of changes in conditions (Summary for Policymakers: Scientific-Technical Analyses of Impacts, Adaptations and Mitigation of Climate Change - IPCC Working Group II (<http://www.ipcc.ch/pub/sarsum2.htm>)).

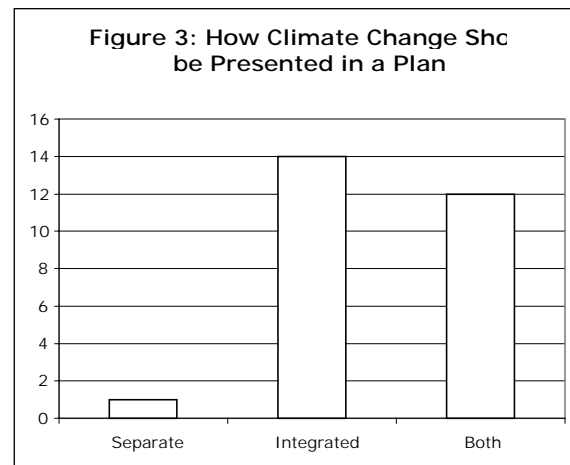
Awareness of the social and economic consequences of climate change was rated considerably lower (Figure 2). Overall, awareness was higher in western Canada than other parts of the country. A consultant assessed a higher level of awareness than other Ontario respondents, but felt that this could mistakenly reflect a perception that Ontario is less vulnerable to such consequences than other provinces.



Respondents were asked if climate change should be dealt with in a specific section of a plan, or integrated in the document. Most said that climate change should be integrated throughout the planning process; in addition, about half felt that, at least initially, there should also be a specific section dealing with climate change, including adaptation (Figure 3). Only one respondent felt that a separate section, supported by a provincial policy statement, would be adequate.

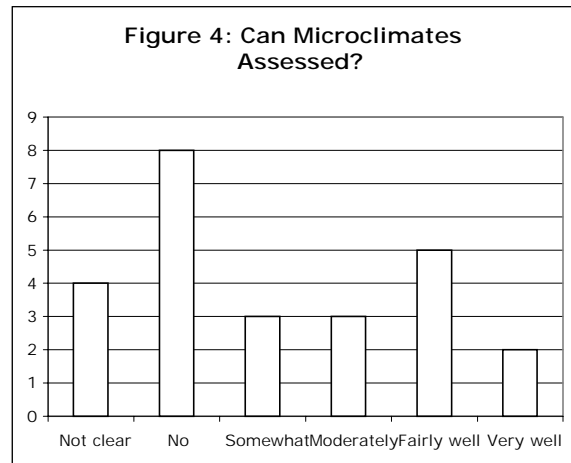
The arguments for a specific section included:

- clear and direct communication of concerns to politicians and managers;
- focus on specific sensitive areas, and
- relationship to sustainability and quality of life discussions.



Respondents were asked if microclimatic conditions could be assessed within their municipality, to identify sensitive areas and to understand some of the factors that might mitigate local effects of climate change. The effects of open water or steep protected slopes on temperatures, for example, could be mitigating factors. Overall, most respondents felt that while the ability to assess microclimates might be available, the expertise and resources were not usually within a municipality’s reach. The Town of Banff was an exception, where specific study of microclimates is currently underway. However, some respondents misinterpreted the question, seeming to lack understanding of the relationship between microclimates and climate change (Figure 4).

Developing an overall vision of the community is an initial part of the planning process. Respondents were asked if climate change should be considered in developing the vision only if it appeared that critical elements would be affected. Seventy percent of planners felt that climate change should always be considered; one municipal planner stated that climate change would always critically alter the vision if assumptions or scenarios were properly developed. In contrast, a provincial planner felt that insufficient information frequently limited the degree to which climate change could be considered in the vision.



Planners were asked what they would find most useful in a guide for incorporating climate change into the land-use planning process. Assistance with public awareness, communication, and consultation was the most frequent response, followed by practical examples, or scenarios and best practices techniques. Help with climate change prediction, uncertainties and assessment tools were also commonly requested. One respondent chose identifying research needs, and another picked the implications for emergency response and disaster planning.

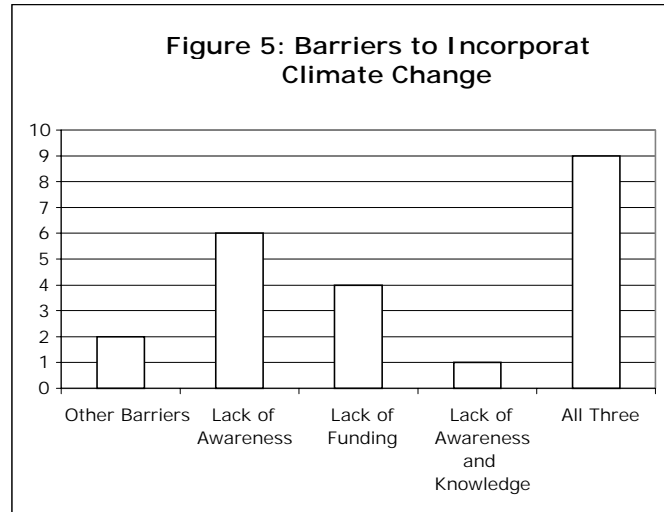
One planner felt that a guide should provide regional or local specific climate change information, strategies for assessing risk, strategies for helping the public to assess the risk, and a very specific listing of consequences, e.g., ‘red oak will not grow under future climate conditions.’

Two respondents appeared to confuse mitigation and adaptation, identifying mitigation and SMART growth issues as priorities.

A planner from Nunavut identified specific needs for planning in the North. Pictorial information and simple writing is especially critical to Inuit people, whose culture is built around visual experience.

In terms of land use, planners wanted help with integrating climate change throughout the planning process, with specific examples of policies and implementation tools. One planner suggested a clear linkage of options to costs, with low cost scalable ideas highlighted. Risk, uncertainties and costs have been identified as problem areas when adaptation to climate change is communicated to managers and politicians.

Finally, planners identified their major barriers to having climate change incorporated in land use plans. Lack of awareness, knowledge and funding were offered as examples. Lack of awareness referred to the understanding of the importance of climate change, its effects, and the existence of tools to analyze issues within their organization. Knowledge of climate change meant the scientific basis for predicting future climate conditions. The majority said all three examples were barriers, but lack of awareness was the single most important issue (Figure 5).



One planner summarized the problem posed by climate change as a question of prioritizing resources. For example, infrastructure of greater capacity may be required because of additional precipitation and more frequent extreme events, and planners will need alternative strategies for addressing these development issues. Another planner felt that a lack of imagination and political support was the major barrier. Some saw the lack of a specific provincial policy statement as a critical barrier to support and funding for adaptation work within municipalities.

Overall, respondents clearly supported the need for a guide to help planners understand and incorporate climate change into land use planning. In addition to incorporating climate change into the plan itself, specific measures for coping could include such practical items as:

- increased setbacks from flood prone areas, including coastal areas subject to storm surges;
- review of water supply security and use;
- increased emphasis on runoff and snow clearing issues in subdivision design, and
- modification of plant species used for landscaping.

The responses to the questionnaire support using, as an initial model, the framework for the guide to integrating climate change into environmental impact assessment (EIA). Work is continuing on development of a climate change guide for land use planners based on the EIA guide, and anyone interested is invited to contact the author.

References

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Acknowledgments

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