RESEARCH REPORT

SETTING PRIORITIES FOR MORE SUSTAINABLE COMMUNITIES:

A GUIDE

EXTERNAL RESEARCH PROGRAM

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SETTING PRIORITIES FOR MORE SUSTAINABLE COMMUNITIES: A GUIDE

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ABSTRACT

Every day, municipal councils, businesses and individuals in Canadian cities, towns, and villages make a variety of conscious and implicit choices with environmental impacts, small or large. These include individual and community-scale purchases, construction and renovation, waste disposal, driving patterns, types of appliances and equipment used, etc.

Over time, whole communities move either toward or away from becoming more "sustainable". That is, they determine whether they will pass on to future generations natural and built environments in equal or measurably better condition than the ones they inherited.

To stay on track in shaping better environments, communities need to set explicit priorities based on combined consideration of evidence, values, and resources. Strategies to set priorities include:

- Tackle the biggest problems first.
- Align priorities with dominant community values.
- Choose the most effective solutions.
- Pick the lowest-cost solutions.
- Find the quickest solutions.

The most productive and successful priorities are likely to be those combining the above strategies in a single package.

Setting day-to-day priorities is also much easier if communities are also guided by a shared vision of where they would like to be in five, ten, or twenty-five years.

This Guide offers help with how to make the best case for "environmental" decisions when many other competing possibilities are tugging at policy-makers. It also suggests how to select which kinds of decisions are likely to pay off most for the environment, based on the best available evidence.

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PREFACE

Many Canadians are deeply concerned about the future of their natural environment as a whole. At the same time, they express in opinion polls considerable satisfaction with how things are actually going in their own localities. Whatever the context, this Guide offers suggestions and concrete illustrations to support communities in taking leadership, making more effective use of tax dollars, and measuring results.

According to readily available indicators, and despite periodic alarms, the majority of Canadians lead relatively safe and healthy lives. They have among the largest revenues and highest incomes per capita in the world to build and maintain their community environments. Amidst affluence, some consider setting priorities a matter of political rhetoric more than a daily necessity. Planning sessions may produce "priority lists" a dozen or more items long, with the expectation that all may somehow be addressed. A minority of Canadians does face an unending crisis of dangerous, dirty, and unpleasant community living conditions. These are a call to urgent action on priority issues and a warning to everyone else of what might be.

Several noted Canadian academics are exploring the ultimate limits of global environmental sustainability. However, Canadians are fortunate to see rather rarely hard evidence of "unsustainable" environments. Examples are when people die from a polluted water supply, are flooded out of their homes, or lose their played-out mine and their town with it. Indeed, making sustainability a community priority may have to take place following dramatic events. This is the case when Winnipeg cleans up after a flood, Montreal recovers from an ice storm, Davis Inlet is relocated, the Sydney Tar Ponds are remediated, Walkerton gets an improved water supply system, Vancouver tackles Downtown East Side drug abuse after many overdose deaths, or Toronto public health enforcement measures are strengthened after a SARS outbreak.

To the majority of Canadians, key questions are: "Am I more concerned about my surroundings than I was five years ago, or are they getting better?" "Is my natural environment a net contributor to my family's health and safety, or a detriment to them?" In this context, many community environmental choices can look mundane on the surface. A city council straddles the options between rapid transit and wider roads. A developer picks a site for her next condominium project. A plant manager selects a solid waste haulage contractor. A resident decides whether to put a plastic container in the garbage or in the blue box. Yet the cumulative impacts of these day-to-day choices are "where the rubber hits the road" in determining long-term quality.

Without well-defined priorities, focused action plans and resources, effective policies and programs, and measurable results, we may be spinning our wheels. That is the case made in this Guide. If the reader accepts this thesis, we offer practical tools based on a global literature for determining what works and what is less successful.

Throughout this Guide, you will find some specific illustrations of how data relevant to Canadian issues and solutions can be found on the Internet, and of how given research, policy, and advocacy groups have approached the question or issue being addressed. Note that in each case, there were often many options available to the author. The choice of one over the others was a personal one, based on a review of several possibilities. It does not imply that the illustration is endorsed as the best for your community, either in format or in substance.

I would like to thank Douglas Pollard of CMHC and FCM, who managed this project, for his continuing creative guidance and valuable comments as research and analysis proceeded. Mark Holzman of CMHC provided extensive and valuable comments on the final draft. I would also like to express sincere appreciation to Louise Comeau and Laura Logan of the Federation of Canadian Municipalities. They have shown in very practical ways how to help Canadian communities to make more sustainable development a reality. In addition, a presentation I made to the National Housing Research Committee was very helpful in focusing this project as it got underway.

Robert E. Platts, P.Eng., was a leader in the work of modelling the whole Canadian housing stock and the setting priorities for public policy to guide energy retrofits in the 1970s. He had a major influence on key elements of the solution-ranking methods set out here. Finally, I want to pay tribute to Michael Harcourt, a tremendous source of inspiration to Canadian mayors and civic leaders on many levels, as well as an intensely practical thinker about sustainability issues. His ideas on how decisions really get made in cities also shaped this document.

The concept for and some elements of this Guide build on my work from 1998 to 2000 for Environment Canada in developing a Website intended for an *international* audience of mayors, city managers, and community leaders. That project was initiated by Jean Bilodeau of Environment Canada, and managed on a day-to-day basis by Loretta Legault and Shelley Emmerson.

C. David Crenna
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EXECUTIVE SUMMARY

Every day, municipal councils, businesses and individuals in Canadian cities, towns, and villages make a variety of conscious and implicit choices. Purchases, construction, waste disposal, driving, appliances and equipment used, etc., all have environmental consequences, small or large. Over time, communities move either toward or away from becoming more "sustainable", defined here as passing on a natural and built environment to future generations in equal or better condition than the one we inherited. To stay on track, we need to:

- Consistently give priority to choices and actions that achieve environmental improvements over those clearly leading in the opposite direction.

- Determine within the whole array of possible environmentally-sound actions which are most important for our community as it is and as it is becoming.

This Guide offers help with how to make the best case for "environmental" decisions among competing directions and also how to select which kinds of environmental decisions are likely to pay off most. "Setting priorities" means selecting explicitly and then defending the "most important" matters for attention, resources and action, including the: largest, most urgent and threatening issues; most popular initiatives; most effective solutions; least costly solutions in both environmental and economic terms; quickest solutions to implement. Ideally, actions to improve the environment will capture multiple opportunities and benefits at once. The more "multiple hits" communities can achieve, the more readily they can defend priority choices against criticisms of those adversely affected.

Establishing clear priorities with wide support and based on the best available facts can act as a basis for defending the interests of generations to come. It can also avoid wasting scarce political capital on fights that turn out not to be worth the effort. Proponents of environmentally beneficial choices themselves need to have a clear rationale for their priorities. They must be rooted objectively in evidence about what is in the interests of the community as a whole. Consuming resources and public support on initiatives without tangible results obviously undermines public confidence in the sustainable communities venture. Thus, in setting priorities, decision-makers are constantly juggling: community *values* and public opinion; community *resources* in money, expertise, and human energy; e*vidence* of what the problems are; evidence of *what works*; and the available *margin for change*, and opportunities to make a difference.

Since priorities are firmly rooted in the politics of communities, there are already many well-established agendas of stakeholders advocating various reforms and changes to the way in which things are currently done. We identify eleven distinct clusters of proposals as to what priorities should be.

These in turn are arranged into a "life cycle", starting from pure survival concerns such as basic health and safety, moving to employment income, then productivity, including resource and energy conservation, and ending with community cultural expression and quality of life. At every step along the way, the question is asked, "what difference does this make?" to improved community environmental quality. That is, what are the visible, tangible implications of adopting a given advocacy position as a priority?

"Making a tangible difference" is measured by one or more of the following types of evidence, arranged according to the above concept of human and community needs:

- Lives and property saved.
- Jobs created and saved without major environmental damage.
- Species and areas of habitat saved or expanded.
- Units of pollution prevented, or failing that, cleaned up.
- Units of conventional energy and resources saved or replaced by renewable forms.
- Volumes of air and water, and units of land saved from toxic chemicals and other pollutants.
- Measures of service standards for all communities achieved... housing conditions, infrastructure, recreational areas, etc.
- Heritage areas preserved or extended.
- Community participation in sound environmental practices.
- Community support for environmental goals and results.

In general, the more a given environmental solutions deliver these tangible results, the higher the priority they are assigned.

Overcoming inertia is the largest single challenge facing leaders concerned to improve their communities. Fortunately, they are no longer alone in facing this challenge. Innovation in infrastructure and building technologies is much more welcome than in decades past. Environmental issues are now part of the bedrock of Canadian values and culture. Four signal examples of these developments are outlined here as stepping-off points for community sustainability planning and action: Green Municipal Funds; The National Guide to Sustainable Municipal Infrastructure: Innovations and Best Practices; The FCM Quality of Life Reporting System; and CMHC Guides to Sustainable Community Planning and Development and to Municipal Infrastructure.

RÉSUMÉ

Dans les villes et villages du Canada, divers choix conscients et implicites sont faits quotidiennement par des conseils municipaux, des entreprises et des personnes. Achat, construction, élimination des déchets, conduite automobile, utilisation d'appareils ménagers et d'équipement sont autant d'activités qui entraînent des répercussions, grandes ou petites, sur l'environnement. Au fil du temps, les collectivités se rapprochent ou s'éloignent de l'objectif de devenir plus « écologiques », c'est-à-dire de léguer aux générations futures un environnement naturel et bâti qui soit à tout le moins dans le même état, sinon dans un meilleur état, que celui dont nous avons hérité. Pour rester sur la bonne voie, nous devons :

- toujours préférer les options et mesures qui améliorent l'environnement à celles qui lui sont clairement dommageables;

- déterminer, parmi tout l'éventail de mesures possibles qui sont sans danger pour l'environnement, lesquelles sont les plus importantes pour la collectivité telle qu'elle est à l'heure actuelle et telle qu'elle est en train de devenir.

Ce guide aide à apprendre comment défendre le mieux les décisions « écologiques » lorsque d'autres options sont possibles, et à choisir celles qui risquent de rapporter le plus. Établir des priorités, c'est choisir explicitement puis défendre les enjeux les plus importants qui méritent attention, ressources et intervention : questions les plus importantes, urgentes ou menaçantes; initiatives les plus connues; solutions les plus efficaces; solutions les moins coûteuses sur les plans environnemental et économique; solutions les plus rapides à mettre en œuvre. Idéalement, les mesures visant à améliorer l'environnement présenteront à la fois des occasions et des bienfaits multiples. Plus une collectivité pourra atteindre plusieurs objectifs d'un seul coup, plus elle aura de la facilité à défendre les options prioritaires contre les critiques des personnes lésées.

L'établissement de priorités claires, massivement appuyées et fondées sur les meilleurs renseignements disponibles peut servir de point de départ pour faire valoir les intérêts des générations futures. Cela peut aussi permettre d'éviter de gaspiller du précieux capital politique à livrer des batailles qui finissent par ne pas en avoir valu la peine. Les personnes qui proposent des options bénéfiques pour l'environnement doivent elles-mêmes avoir des motifs clairs pour leurs priorités. Celles-ci doivent se rattacher objectivement à des faits concernant les intérêts de l'ensemble de la collectivité. Épuiser les ressources et le soutien du public pour des initiatives stériles sape visiblement la confiance qu'a la population dans la création de collectivités écologiques. Par conséquent, en établissant des priorités, les décideurs jonglent constamment : *valeurs* de la collectivité et opinion publique; *ressources* de la collectivité en fait d'argent, d'expertise et d'énergie humaine; *indices* concernant la nature des problèmes; preuves de ce qui *fonctionne*; *marge de manœuvre disponible* pour un éventuel changement; occasions de changer les choses.

Comme les priorités sont solidement ancrées dans la vie politique des collectivités, il existe déjà de nombreux dossiers bien établis d'intervenants qui plaident en faveur de diverses réformes et changements en ce qui a trait aux façons de faire actuelles. Le guide expose onze ensembles de propositions sur ce en quoi devraient consister les priorités.

Ces ensembles de propositions sont présentés selon un « cycle de vie », qui commence par les préoccupations de survie pure et simple, comme les besoins fondamentaux de santé et de sécurité, passe par le revenu d'emploi, puis le rendement, y compris la conservation des ressources et l'économie d'énergie, et se termine par l'expression culturelle et la qualité de vie de la collectivité. À chaque étape, une question est posée : « qu'est-ce que cela apporterait vraiment » à la qualité de l'environnement dans la collectivité? Autrement dit, quelles répercussions visibles et tangibles aurait l'adoption d'une position donnée en tant que priorité?

« Changer les choses de manière tangible » se mesure par un ou plusieurs des paramètres suivants, classés selon le concept susmentionné de « cycle de vie » des besoins humains et communautaires. Va-t-on :

- sauver des vies et des biens?
- créer des emplois ou en éviter la perte sans trop porter atteinte à l'environnement?
- sauver des espèces ou des habitats, ou encore en assurer l'expansion?
- prévenir ou, à défaut, éliminer la pollution?
- économiser l'énergie et les ressources traditionnelles, ou encore les remplacer par des formes renouvelables?
- protéger l'air, l'eau et la terre contre les produits chimiques toxiques et d'autres polluants?
- pouvoir mesurer le respect de normes de services dans toutes les collectivités (conditions de logement, infrastructures, aires de loisirs, etc.)?
- préserver ou encore agrandir les aires du patrimoine?
- amener la collectivité à adopter de bonnes pratiques écologiques?
- amener la collectivité à appuyer les objectifs et les résultats souhaités en matière d'environnement?

En général, plus une solution écologique donne l'un de ces résultats tangibles, plus on lui attribue un degré de priorité élevé.

Vaincre l'inertie est le seul grand défi que doivent relever les dirigeants qui ont à cœur d'améliorer leurs collectivités. Heureusement, ils ne sont plus seuls à devoir l'affronter. L'innovation dans les technologies du bâtiment et des infrastructures est beaucoup mieux accueillie de nos jours qu'au cours des dernières décennies. Les enjeux environnementaux font maintenant partie des valeurs et de la culture fondamentales des Canadiens. Quatre exemples remarquables d'innovation sont proposés comme points de départ pour planifier et mettre en œuvre des mesures écologiquement saines dans la collectivité : le Fonds d'investissement municipal vert; le *Guide national pour*

des infrastructures municipales durables : Règles de l'art et innovations; le Système de suivi de la qualité de vie, de la Fédération canadienne des municipalités; les guides de la SCHL portant sur la planification et l'aménagement de collectivités durables et sur l'infrastructure municipale.

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1. BASIC QUESTIONS

1.1 What is a "priority"?

"To govern is to choose."[1] Every day, municipal councils, businesses and individuals in Canadian cities, towns, and villages make a variety of conscious and implicit choices. Activities flowing from these choices, whether purchases, construction, waste disposal, driving, appliances and equipment used, etc., all have at least some environmental consequences, small or large. Over time, communities move either toward or away from becoming more "sustainable". "Sustainable" is defined here quite simply as passing on a natural and built environment to future generations that is in equal or measurably better condition than the one we inherited. This is a complex but achievable goal, that is rendered even more attainable if communities are guided by a shared vision of where they would like to be in five, ten, or twenty-five years.

To stay on track toward a common vision of a better and more sustainable community environment, communities need to do at least two things:

- Consistently give priority to choices and actions that achieve environmental improvements over those clearly leading in the opposite direction.

- Determine within the whole array of possible environmentally-sound actions which are most important for our community as it is and as it is becoming.

This Guide offers help with both sets of issues: how to make the best case for "environmental" decisions when many other competing directions are tugging at policy-makers; and how to select which kinds of environmental decisions are likely to pay off most for the environment.

According to the dictionary, a "priority" is defined as:

- Precedence, especially established by order of importance or urgency.
- An established right to precedence.
- An authoritative rating that establishes such precedence.
- Something afforded or deserving prior attention.[2]

Here, "setting priorities" means selecting explicitly and then publicizing and defending

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[1] Nigel Lawson (b. 1932), British Conservative politician. Quoted in Daily Mail (London, March 26, 1991).The Columbia World of Quotations. New York: Columbia University Press, 1996. Mr. Lawson went on to say: "To appear to be unable to choose is to appear to be unable to govern."

[2] Quoted from *The American Heritage Dictionary of the English Language*: Fourth Edition. 2000. You can find it on the Internet at: www.bartleby.com/61/64/P0566400.html.

the "most important" matters for attention, resources and action, including the:

- Largest, most urgent and threatening issues.
- Most popular initiatives.
- Most effective solutions.
- Least costly solutions in both environmental and economic terms.
- Quickest solutions to implement.

Thus, to set transparent priorities, we need to *rank or rate* on the basis of both facts and shared values the choices we propose when several possibilities are in contention. Ideally, actions to improve the environment will capture multiple opportunities and benefits at once. That is, they will respond quickly with effective, relatively low-cost solutions to large, urgent problems in a way that has maximum popular support. From a political standpoint, the more "multiple hits" we can achieve, the more readily priority choices can be defended against criticisms of those adversely affected.[3]

Organizations most committed to sustainable communities, such as the Federation of Canadian Municipalities are looking for ways to structure the process of arriving at these priority choices, for example, by exploring systems such as “The Natural Step”.[4] In fact, an array of agencies, advocacy groups, and research institutes offer ways in which to set priorities in the form of specific agendas for change. The challenge facing decision-makers is how to sort out these agendas and make choices that fit the conditions in their own communities.

At one time, there was just not enough reliable knowledge or information about environmental problems or about the results of different potential solutions to be able to rank different problems and solutions with confidence. In many fields of environmental policy-making, this is no longer the case... we have "enough" knowledge, even if it is incomplete.

Moreover, through the Internet, we can draw upon reliable environmental knowledge from around the world. It is still not an easy task, but it can be done.

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[3] The Community Policy Analysis Center of Missouri University has developed a formal method of doing this and specifically applied it to community environmental decision-making. For more information. See "The Analytic Hierarchy Process (AHP) in Community Decision Making" by Dr. James Scott and David Peters at www.cpac.missouri.edu/library/presentations/nwext/index.html.

[4] See www.thenaturalstep.ca. It is intended as is a science and systems-based approach to organizational planning for sustainability and offers a practical set of design criteria that can be used to direct social, environmental, and economic actions.

1.2 How is this Guide organized?

This Guide focuses on mobilizing the available knowledge and turning it into logical sequences of practical steps toward greater sustainability. This Chapter sets out the scope of the topic and defines basic terms. Chapter 2 explores how each strategy for setting priorities can be applied to day-to-day decisions, i.e., largest, most popular, most effective, etc. Chapter 3 maps in some detail eleven of the larger visions and coherent agendas that help make sense of different clusters of priorities. For example, a range of potential priorities is associated with achieving greater safety in communities. Chapter 4 returns to the “big picture”, considering how groups of priorities can complement each other across different topics and sectors.

1.3 Why is setting environmental priorities often a challenge?

Because setting priorities is at the heart of community political processes, it can be by nature difficult and fraught with tensions. The potential for participants in many such processes is to see them as "win-lose" games. The tendency, therefore, may also be to try to accommodate everyone's wishes, at least on paper. This can generate a huge "wish list" of potential action items, as noted above. Then real limitations on resources, time and human energy set the effective priorities afterwards. Those "priority" items without vigorous, resolute champions tend to "fall off the table".

This way of developing priorities poses two special challenges for community environmental issues and actions. First of all, when "environment-friendly" actions are competing against options with negative impacts, nobody may be representing future generations in a concrete, well-resourced and consistent way. Individual issue-based groups may claim this role for a time, as when a cherished park is threatened by development.

Because they are event-driven, however, such groups rarely turn around the inertial movement of overall development patterns already set in motion. For example, they may slow but not halt the trend toward more and more land consumed for dwellings per person as incomes rise.

1.4 Why set explicit, ranked priorities?

David Campbell, a Senior Fellow at the Center for Creative Leadership in Texas has written, "If you don't know where you're going, you'll probably end up somewhere else".[5] In addition, as one of Murphy's Laws states: "If you try to please everybody, somebody is not going to like it."[6] Establishing clear priorities with wide support and based on the best available facts can act as a basis for defending the interests of generations to come. It can also avoid wasting scarce political capital on fights that turn out not to be worth the effort.

Proponents of environmentally beneficial choices themselves need to have a clear rationale for their priorities. These must be rooted objectively in evidence about what is in the interests of the community as a whole. Consuming resources and public support on initiatives without tangible results obviously undermines public confidence in the sustainable communities venture as a whole. As just one example, recycling a certain range of products may turn out to cost more energy and result in more environmental damage than it saves. This would put the whole endeavour under a cloud.

In setting priorities, decision-makers are constantly juggling:

- Community *values* and public opinion.
- Community *resources* in money, expertise, and human energy.
- *Evidence* of what the problems are.
- Evidence of *what works*.
- The available *margin for change*, and opportunities to make a difference.

According to literature reviewed by the author, Canadian communities seem to be warming to the idea of more formal and transparent "rules of the game" in setting priorities for environmental management.

This Guide introduces precisely these more systematic priority-setting methods. It illustrates how they can be applied to problems facing Canadian communities of varying size, diversity, resource base, and political composition.

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[5] Note that this is the title of his book. (Allen, Texas: Thomas More, 1974.)

[6] See: www.health.uottawa.ca/biomech/csb/laws/murphys.htm.

In summary, more formal priority-setting methods are based on *evidence* about community values and resources, about *relative risks* associated with different problems and about the *comparative effectiveness* of different solutions.
The hope in adopting such methods is that people may trust the results more, even if they do not like them. In this respect, evidence-based priority-setting methods are a natural handmaiden of community democracy. They imply that systems in which "he who shouts loudest is right" are going to be less and less important.

Setting priorities is an integral part of establishing community goals, objectives, strategies, plans, and accountability for taking action, such as measurement and reporting of results over time. But there still needs to be a clear rationale for *ranking* priorities rather than, or in addition to, simply carrying out actions in a logical sequence.

Few are likely to dispute openly the general need for community priorities. However, there can in be a lot of resistance in reality, whether it takes the form of point-by-point opposition in detail, or simply in relentless "watering down" of all priorities into meaningless abstractions.

There are three main arguments in favour of setting explicit community priorities based on evidence and three against.

Advantages of such priorities are:

- In a democracy, people can usually be trusted with news that they may be adversely affected by government actions. This is so as long as they know and believe that the process of determining what to do was fair, and took their interests into account. Setting priorities that transparently use evidence to reduce resources and attention to some sectors and problems in favour of others can be just such a process. It is never easy or without conflict, but at least the conflict can be based on facts as well as emotions and interests.

- Through social and technological innovation, many problems once considered to have only "win-lose" outcomes now can have "win-win" solutions. A formal priority-setting process can help get these out on the table, rather than stifling innovation because it may "rock the boat".

- While setting priorities may appear arduous and politically risky at the outset, it is a learning process, in which people become better and better, and more and more comfortable. Moreover, since the active players are shifting all the time, a well-documented process enables newcomers to join in more easily. Psychological research shows that people more readily grasp information presented in ranked order, accounting for the popularity of "Top Ten" lists.

There are also some arguments against explicit priorities that need to be considered seriously and addressed:

- Setting priorities involves adopting models that simplify how the world works. These models can become dated quickly. They may even be out of date by the time the priorities they call for are selected. This is certainly a common experience in the environmental policy field, in which it can take decades for both problems and results of past actions to appear. Explicit priorities may stifle needed change by securing large and unquestioned resources for out-of-date agendas and institutional arrangements.

- Community politics often require delicate balancing of different competing interests in a subtle way. Many of the compromises involved are best left informal, rather than being made explicit. Those defeated in various policy battles can live with the situation much better if their defeat is not set out in black and white. More important, they can be brought "back into the fold" and reconciled through vague language that appears to take their perspective into account.

- While data and information required for setting explicit priorities may be better than ever before, they are still far from complete or perfectly reliable. Some of the most vital bits of information, such as ecological impacts or program results over long time periods are still not even collected, let alone readily available. Explicit priorities may go where the data are best, rather than where the emerging problems really are. They may also create an air of scientific authority around what is really a rather uncertain prescription for action.

Responses to each of these points will become more detailed as the Guide progresses. However, they deserve at least an initial reply:

- It is essential to consider *multiple models and multiple agendas*, embodying a range of values and interests, in developing ranked priorities. It would indeed be unwise, and probably impossible, to adopt one ranking scheme that comprehends all environmental issues and priorities.

Several well-funded attempts have been made, and they have all ended in mixed achievements at best.[7] In Chapter 3, this Guide presents a total of eleven different models or "agendas" for setting priorities. In Chapter 4, we outline nine different "packages" that range across these models. These agendas are all dynamic, and enable those pursuing them to shift with the times as progress is made and the content of issues changes.

- Nowhere here do we argue that all priorities must be equally explicit, or that no compromise wording is permissible. Santa Monica, California, with support from a Vancouver firm, has results from over a decade of work in setting documented community sustainability priorities.[8] There, as elsewhere, such statements are always a "work in progress", with some stronger and some weaker elements. The point is to begin, and to build consensus through factually-based learning, rather than revisiting the same issues and assumptions over and over again with varying participants.

- Data and information for priority-setting processes is a classic case in which it is far better to be "roughly right, rather than precisely wrong". Throughout this Guide, we urge you to apply approximate measures, rather than perfect measures. Trying to find data to help set priorities is also an excellent way of spurring researchers to collect new samples with operational application in mind. They can also be encouraged to present analytical results in a focused, jargon-free manner. Priority-setting efforts can also yield some surprising findings that turn well-established "factoids" inside out or upside down.[9] This is partly because ranking processes call for assumptions to come out of hiding. It helps prompt certain experts to stop offering "on-the-one-hand-and-on-the-other-hand" types of explanations.

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[7] See for example: www.riskworld.com/Nreports/1996/risk_rpt/html/nr6aa015.htm. This report comments: "There are a number of challenges to and limitations to the usefulness of the process [of risk ranking]... For example, there is no guarantee that the process will produce consensus among stakeholders, agencies, and funding authorities. Resolving inconsistent data across problems, forcing all risks into a common measurement, and integrating problems into a single list are important methodologic challenges. The degree of uncertainty varies across problems, making comparisons difficult. The process might not adequately account for environmental equity, emerging issues, and effects across jurisdictional boundaries."

[8] See: www.santa-monica.org. This process has a Canadian connection in that many of the community sustainability guidelines adopted by the City resulted from the work of Sheltair Scientific Limited of Vancouver.

[9] Just one example is the common assumption that we need to curb "sprawl" in order to conserve scarce prime agricultural land. In reality, Canada has *added* huge areas of land under cultivation in recent decades, with large impacts on local ecosystems. There are, of course, scarce and unique prime lands of specific types around several major centres such as St. Catharines, Ontario and Vancouver, British Columbia. There are many reasons to limit endless tract housing and shopping malls, but sustaining major types of food production ranks fairly far down the list.

The key to success in fact-based priority-setting is to recognize three things:

- Decisions still need to be made in the midst of uncertainty. Explicit priorities may help to define the "least bad" actions under the circumstances, as well as prompting innovation, but they are not the keys to a golden era of policy-making.

- Evidence-based priorities are not a Trojan horse for either scientistic or ideological agendas. Values and the struggle over resources remain just as important as ever. They are now couched more in terms that "level the playing field", favouring coalitions of support over monopolies of expertise or power.

- Ultimate success of this method of proceeding will be attained when -- like the Molière character who had been speaking prose for years and did not know it -- leaders and managers apply evidence-based decision-making seamlessly as a routine part of making policy.

In addition, as people become more and more comfortable with priority-setting processes, they may also become more ready to engage in “back-casting” from desired future states, rather than forecasting from current conditions.

1.5 Can community "buy-in" and hard evidence be reconciled?

At first glance, this may seem to be a question with an obvious answer: "Yes, of course they can". Yet in dozens of priority-setting situations, community leaders may reject the facts and dismiss priority rankings as irrelevant or specious. People tend to be very familiar with two of the three elements of evidence-based decision-making: values and resources. That is, they know what they want from their municipal governments, and they know how much money local authorities are spending, and where. Success in achieving comfort with rather new methods as they relate to problems and solutions requires persistence and credible champions who do not cause people to "shoot the messengers" if they are unhappy with the outcomes. That is, if they find one of their most cherished programs has zero to negative impacts, for example.[10]

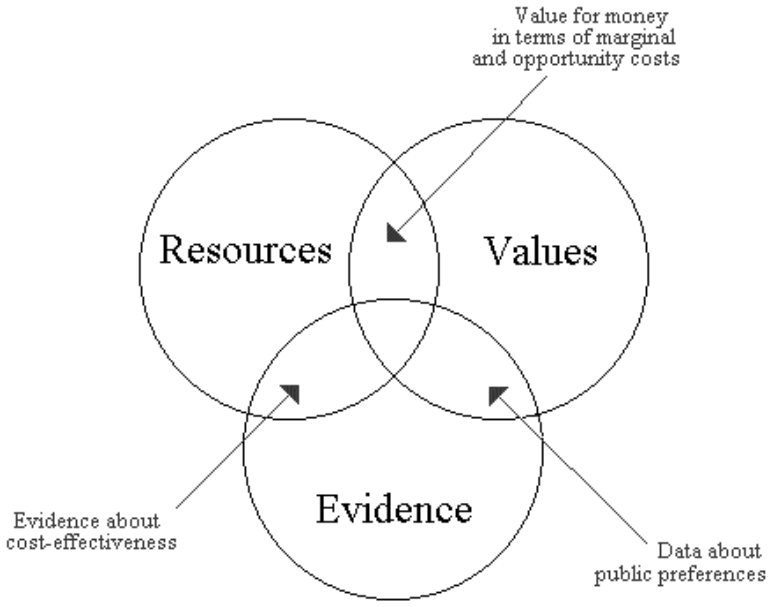
One key to achieving community ownership based on ranking methods lies in first creating confidence, step by step, in "evidence-based decision-making" as a sound method of proceeding. It must be clear to everyone that it does not have a hidden agenda, for example, of resisting innovation because there is "no evidence" available.

[10] CMHC has published a series of Research Publications in this field, including: *Sustainable Community Planning and Development: Participation Tools and Practices*; *Sustainable Community Planning and Development: Design Charrette Planning Guide*; and *Sustainable Community Development Demonstration in Okotoks, Alberta: Testing Consumer Receptivity*. To search for these publications on-line, click on: www.cmhc.ca/en/imquaf/hehosu/sucopl/index.cfm and go to the Research Highlights.

It is also essential to show that this method is not some scientific mumbo-jumbo, or a rationale for endless data collection.[11]

In 1996, Dr. Muir Gray published a seminal book called *Evidence-Based Healthcare*. This explored how to make evidence-based decisions in management, policy-making and purchasing.[12] In brief, its thesis is that sound decisions are made when resources, values, and evidence are *all* considered together. Dr. Gray contends that currently, evidence plays too small a role in comparison with resources and values.[13] Since the publication, the debate on evidence-based decision-making focuses on three main issues:

- the scope of evidence;
- the part that values play in evidence-based decision-making;
- the part that culture plays in evidence-based decision-making.



[11] For example, Sherri Torjman has called it "*avoidance*-based decision-making" in commenting on resistance to social policy innovation in an era of cut-backs. Her work is highlighted here and at: http://www.vibrantcommunities.ca/g2s2.html.

[12] The content outline for this book is available at: www.ihs.ox.accommodate.uk/ebh/.

[13] See Annex "C" for a longer discussion of Evidence-Based Decision-Making.

The Venn diagram above shows the relationships among evidence, values and resources.[14] It shows that evidence about effectiveness and safety of interventions cannot be distinguished from values in a clear and mutually exclusive way. However, it *is* quite possible to gather information about public preferences and to use it actively in making decisions about whether and how to intervene. The scope of "evidence" relating to policy outcomes can also be broadened to go well beyond results of controlled scientific trials. Moreover, decisions are rarely based on evidence about outcomes alone. Both resources and values are always taken into account. When different stakeholder groups have different judgments about the evidence, and perhaps different judgments about values, the debate can become very vigorous. Yet such a debate is still likely to yield better results than simply shoving differences under the carpet, or than basing decisions on wrong information and confusion about what really works.

Another contributor to future success in evidence-based priority-setting lies in managing very professionally processes for elaborating and reaching a consensus on priorities. These carefully structured methods are based on learning from thousands of previous community participation exercises. An example is a priority-setting technique called the "nominal group process". It arranges a sequence of activities facilitating people to express their individual priorities, and then to work together to convert them to group priorities. Those present agree to follow simple yet firm rules, even when controversy is present.
Its authors claim the process maximizes the creativity and input of each participant, and also produces more and higher quality suggestions than ordinary group discussions. The process prohibits any single speaker or topic from dominating the meeting. Here are the steps in brief:

- Set the stage in advance with preparatory information.
- Prepare a suitable, comfortable venue with proper facilitation supplies.
- Explain the group task.
- Start with an individual writing exercise on ranked priorities.
- Share the individual results with the whole group.
- Record all the individual results on sheets in front of the whole group.
- Go around the room with everyone's Number 1 priority, getting all ideas out
- Facilitate group discussion on priorities, in which choices can be defended.
- Have the group vote individually in silence on the array of priorities.
- Score the priorities according to most votes received in order of priority.
- Discuss the results and vote again as required.
- Write up the final results and distribute them widely.
- Update annually.[15]

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[14] The diagram is from: www.ihs.ox.accommodate.uk/ebh/.

[15] This was developed by A.H. Van de Ven and A.L. Delbecq of the University of Wisconsin, Madison. See for more complete details: http://4h.unl.edu/volun/arlen/setting.htm.

Beyond an inclusive concept of evidence-based decision-making and structured, professionally-facilitated group processes, adopting formal priority-ranking methods requires *learning* over time what works and what does not for a given community. This will depend greatly on its size, history, and current culture of decision-making. Some places, such as Vancouver, Montreal, Hamilton, and Edmonton have long-established arrangements for addressing sustainability issues in place. Others are only recently becoming more active in a comprehensive, staff-supported mode. Other communities still prefer issue-focused and ad hoc approaches, with external consultants or advocacy groups in the lead.

Gaining experience with differing approaches, and wide sharing among communities of both background information used and lessons learned are the only assured routes to widespread use of these techniques.

More important, they can contribute to actual benefits for community environments flowing from better-informed decisions. True success will be achieved when people come to see the new methods as "part of the woodwork".[16]

1.6 Can we turn stated priorities into realities?

The greatest challenge before community leaders remains that of *acting* in a sustained way on the results. This is so even after highly successful priority-setting processes, and even more required for picking up the pieces after a failure.

Thousands of sustainable community planning and workshop reports currently sit gathering dust on the shelves of municipal libraries. Others are referred to only by those running for office as evidence of their predecessor's inaction, or as a source of "fresh, new" ideas destined in their turn for oblivion.

This Guide is based on two central principles:

- It is better to have a carefully considered one-page plan that is implemented than a multi-volume work unblemished by action. While this Guide itself may be rather long because of the many subjects covered, it offers templates for very short reports geared to decision-maker needs.

[16] For a useful bibliography of Canadian and other work in this field, please consult: www.umanitoba.ca/academic/faculties/architecture/la/sustainable/biblio.htm. For a detailed example of how a local institution can facilitate community priority-setting see the work of the State University of New York at Buffalo: http://urbandesignproject.ap.buffalo.edu/Cc/index.htm.

- The main attraction of applying evidence-based priority-setting methods is that they will generate sufficient confidence to lead to immediate action on their results. Much indecision and thus, inaction, flows from the lack of clarity both about what to do first, and also from the belief that unless everything is done, nothing can be done. Priority-setting tackles these blockages head on.

Any successful strategy for improving community environments needs to take into account the sheer magnitude and complexity of what Canadians have created over centuries.

The country's built environments have hundreds of billions of dollars of sunk capital invested in them.[17] They cover thousands of square kilometres. They are composed of well over 11 million decision-making units, in the form of households, governments businesses, and voluntary organizations. The average rate at which the capital stock increases is under 2 percent a year, meaning that it takes upwards of 50 years to double in size. Nineteen major technological and organizational subsystems are involved.[18] "System-wide change" is simply not going to happen, except over decades. The central question is always: what can we do with the margin of change we have available?

In offering guidance on setting priorities, we assume that decision-makers are almost always starting in "mid-stream", beset by competing demands and attempts to capture their attention. We do not in any way propose what the sustainability priorities of a community should be. We do organize the available knowledge according to two principles that should help to gauge where a community might be best to start in taking stock and in moving ahead.

[17] For example, according to the 1996 *Census of Canada*, homeowners had a total of just under $1 trillion invested in their dwellings. Figures on Canada's capital stock developed by Statistics Canada offer approximate values for each major element. See: www.statcan.ca. Data for the period 1981-2000 offered by Phillip Armstrong et.al. show that the stock of all structures increased by an average of 1.7 percent annually over this period. See: www.statistics.gov.uk/IAOSlondon2002/.

[18] In alphabetical order these are: commercial developments and services; cultural facilities and services; educational facilities and services; energy generation, supply and distribution; fire services; health facilities and services; industrial development; policing services; governance facilities and services; recreational services; residential developments; retail facilities and services; sewage collection and treatment; social services; solid waste collection and recycling or disposal; telecommunications services; transportation facilities and services; water supply, treatment, and distribution. Every one has its specific environmental impacts and also its community of expertise as well as stakeholder interests.

First, all the current and emerging agendas advocating various priorities for sustainability are arranged into a "life cycle", starting from pure survival concerns, moving to employment income, then productivity, and ending with community cultural expression.[19] Second, and at every step along the way, the question is asked, "what difference does this make?" to improved community environmental quality. That is, what are the visible, tangible implications of adopting a given policy position as a priority? Note that this sequence itself does not imply a set of priorities. Humans are altruistic as well as selfish. Community spirit is very important to everything else that can happen. Thus, it is often more important to start at the bottom of the list with actions that build community morale, rather than trying to engage people on issues of basic survival first. The life-cycle sequence of agendas for setting priorities, further elaborated in Chapter 3, is set out below.

DRIVING FACTORS IN DIFFERENT COMMUNITY PRIORITY-SETTING AGENDAS

Driven mainly by *survival concerns*:

- Community Health Promotion and Protection
- Crime Prevention
- Public Safety
- Disaster Management and Mitigation

Driven mainly by *employment income*:

- "Green" Community Economic Development

Driven by *productivity* concerns:

- Habitat Conservation
- Pollution Prevention
- Resource Conservation and Renewable Resources

Driven mainly by a sense of *community culture and common good*:

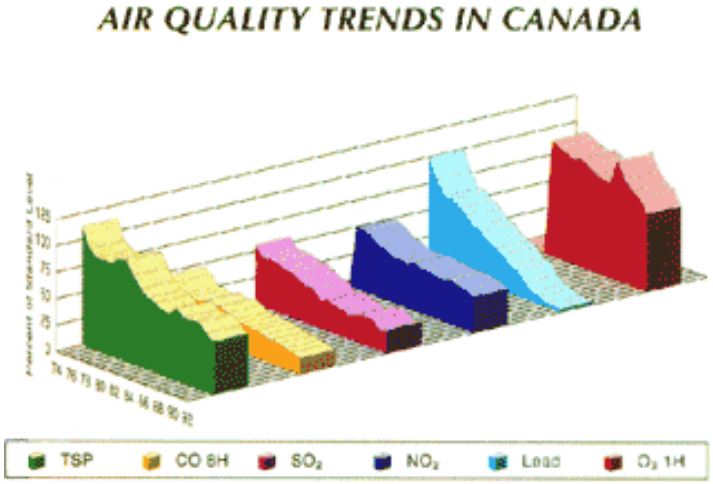
- Equitable Community Services
- Heritage Conservation
- Culture of Sustainability

[19] This is a community-scale version of the "Maslovian hierarchy" in the literature of individual psychology. This has four levels: 1) basic survival, 2) material well-being, 3) productivity, and 4) self-actualization. See www.bcm.tmc.edu/crowd/community_living/1HEURIST.htm for one application of the hierarchy.

"Making a tangible difference" is measured by one or more of the following types of evidence, arranged according to the above concept of human and community needs:

- Lives and property saved.
- Jobs created and saved without major environmental damage.
- Species and areas of habitat saved or expanded.
- Units of pollution prevented, or failing that, cleaned up.
- Units of conventional energy and resources saved or replaced by renewable forms.
- Volumes of air and water, and units of land saved from toxic chemicals and other pollutants.
- Measures of service standards for all communities achieved... housing conditions, infrastructure, recreational areas, etc.
- Heritage areas preserved or extended.
- Community participation in sound environmental practices.
- Community support for environmental goals and results.

In virtually all cases, *problems* can be ranked in priority according to the degree to which developments are *moving away* from these desired results, as in the case of the air quality diagram below. Solutions can be ranked according to the extent to which they can *help to achieve them*.[20]

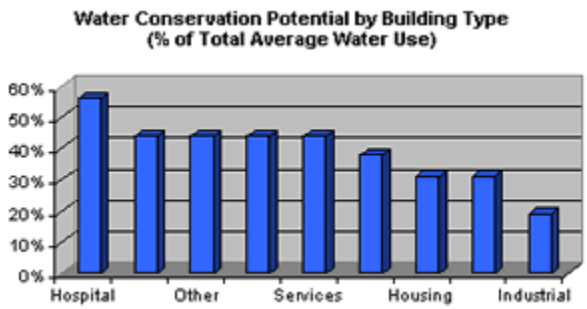


Source: www.ec.gc.ca/soer-ree/English/Indicator_series/default.cfm#pic.

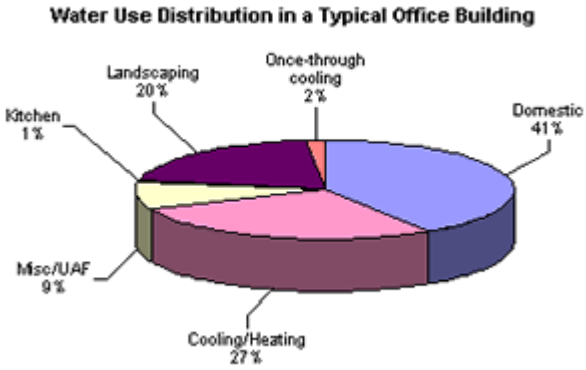
[20] For a complete list of readily available government-produced indicators, please consult GDSourcing (Government Data Sourcing), an Internet-based research and retrieval company that specializes in helping researchers access statistics collected by the Canadian Federal government.
The Website is: www.gdsourcing.ca/works/EnvironmentStatsCan.htm.

A Specific Example of Applying Evidence-Based Priority Setting: Water Conservation at U.S. Federal Facilities

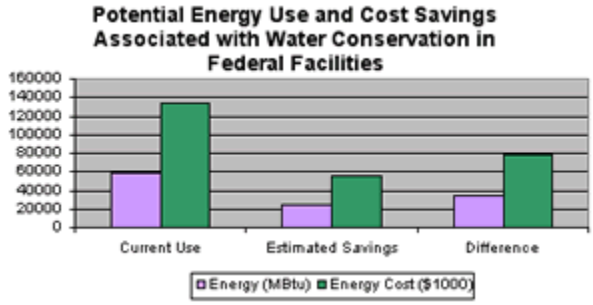
We begin by ranking the problem of wasted water (or potential savings) across different sectors.



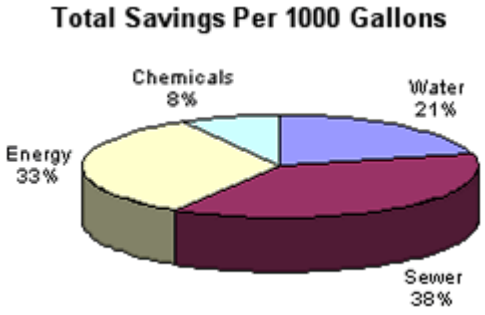
Next, we "zoom in" on the sector with greatest potential, focusing on the largest items, e.g. toilets.



Then we estimate the results of different actions based on best practices.



Then we turn these results into different dollar and environmental outcomes and impacts.



Source: Adapted from www.eere.energy.gov/femp/techassist/waterconserve_fedfac.html.

2. STRATEGIES AND TACTICS FOR SETTING PRIORITIES

2.1 Introduction

Your most appropriate strategy for setting community-wide priorities is going to depend on your assessment of where your community "is at" on key environmental issues. It will also depend on the immediate context in which you are trying to launch or strengthen the commitment to improve environmental quality and long-term sustainability.

For example, if your community is just recovering from a major crisis relating to health and the environment, it is pretty well unavoidable that you propose as a priority tackling this big problem first. At the same time, you can try to introduce some additional ranked problems to help ensure that resources are not consumed that may be needed shortly for another crisis. For example, you could make links between an immediate public health crisis of travel-borne diseases and other aspects of the investment in prevention, such as ready access to neighbourhood clinics and diagnostic equipment.

If your community is only now beginning to think about environmental issues, but is relatively satisfied with things as they are, you will want to be careful to align proposed priorities with clearly defined and documented community values. Those values may have previously been expressed in support for cultural activities. Adopting the theme of links between culture and the natural world may commend itself. An appeal to build community spirit is usually well received.

If your community is relatively far along the path of sustainability planning, but is having difficulties actually moving to implement what has been agreed, your most appropriate entry point for setting priorities may be selecting effective solutions.
This would be coupled with examination of the lowest-cost solutions and the quickest solutions in order to maintain momentum.

These are three typical situations of different Canadian communities today. It is time to move on to examine each of the potential strategies in more detail. We need to look in particular at challenges of:

- finding and mobilizing the best available knowledge;
- building community support, and
- making the results of priority-setting stick.

2.2 Tackle the biggest problems first.

2.2.1 Finding the best available knowledge

From a "knowledge management" perspective, this is the easiest of the priority-setting strategies to undertake, provided it is kept simple. For one thing, there may be reliable data about local environmental conditions from past studies. These can be considered as absolute numbers, i.e., it's big no matter how you look at it. They can also be calibrated in relation to the numbers for other Canadian communities, that is, it's big compared to the same kinds of communities as ours.
There have been decades of work on problem-oriented indicators by Environment Canada, provincial environment ministries, and the university community.[21]

Here are some guidelines for determining the biggest problems:

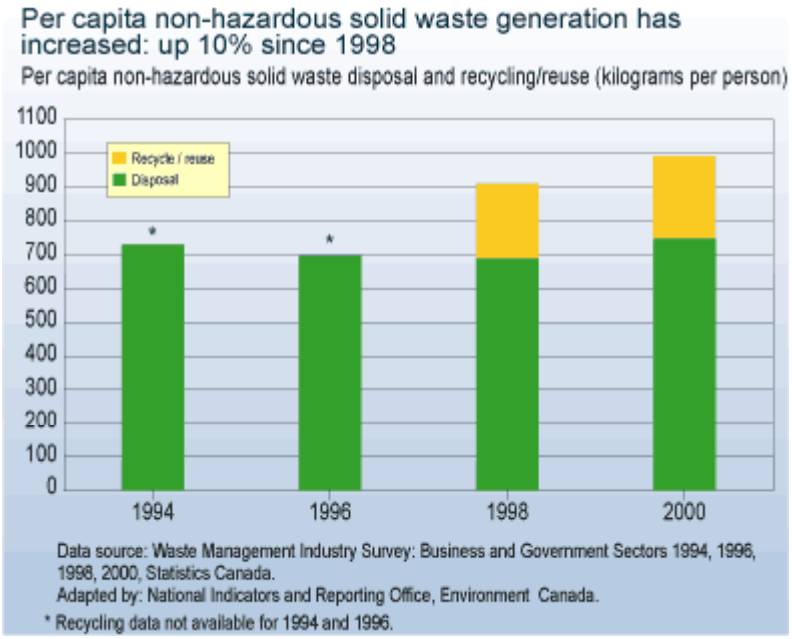
- Generally speaking, the more conventional energy used in your community, the greater the adverse environmental impacts of all kinds, since fossil-fuel supply, burning, and waste removal processes all serve to change the chemical composition of air, water and land. It is relatively easy to rank energy sources by type and then begin to trace these problems.[22]

- Community water supplies are likewise not infinite in many communities, at least not at a cost that can be borne by future generations. More and more localities are considering water conservation to be a priority, especially in relation to lawn-watering, major institutional consumers, and pollution of groundwater sources. Data on water consumption are relatively easy to find.

- Many communities have reached limits of convenient solid waste disposal and are having to redesign all garbage-related systems in this light. As a result of the extensive work on reducing solid waste going to landfill, a lot of data have been assembled on both amount and composition of municipal solid waste in the past two decades.

[21] "Knowledge management" refers to a set of methods for bringing together from across many different units of an organization the best practices and information that will contribute most to its success. New technology enables capture, discovery, distribution, storage, distillation, management and linking of tacit, explicit and implicit knowledge and information. In a community context, it refers to learning from other communities. For more terms associated with knowledge management, see: www.menet.Alberta.ca/bins/content_page.asp?cid=36.

[22] For basic information see: www.edquest.ca/Notes/3-7(7).html.



Source: www.ec.gc.ca/soer-ree/English/Indicator_series/default.cfm#pic

- Toxic waste released into the environment has rarely been proven to have beneficial effects. The general approach is to hope that dilution will be sufficient to reduce environmental and health risks below a threshold considered from laboratory evidence to be safe. More and more communities are striving to eliminate any toxic substances being released at all. The National Pollutant Release Inventory has most of the data required.

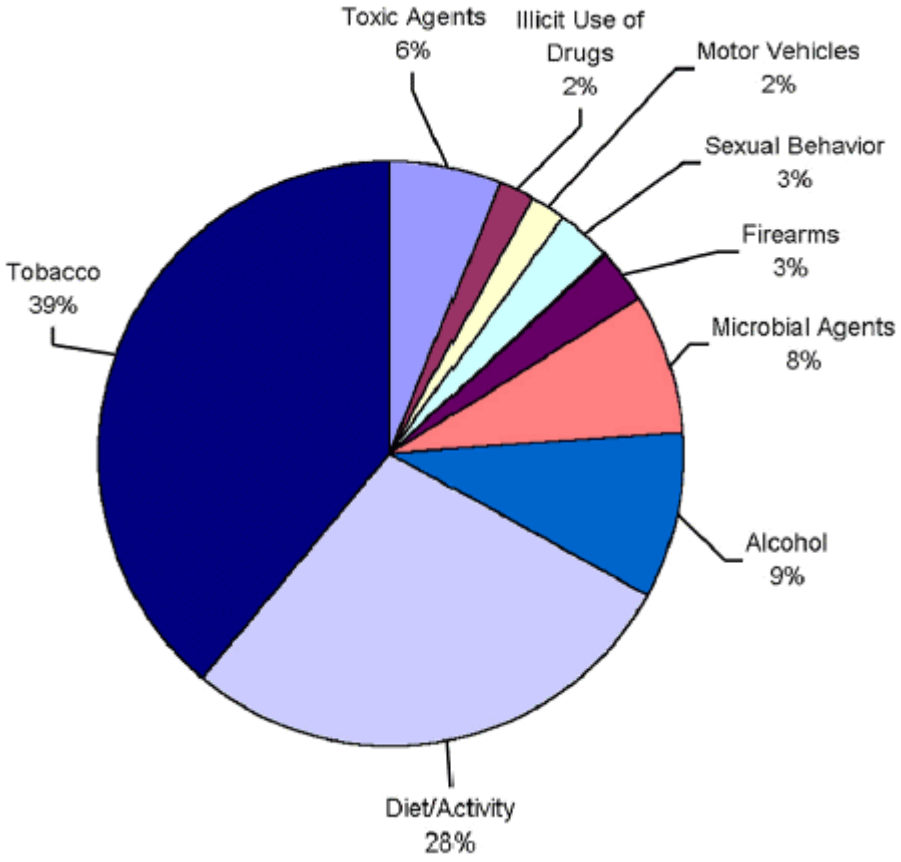
- If your community is destroying more and more of the surrounding natural habitats to grow, it is probably going to reach limits of desirability as a place to live in. It may also be putting residents of distant suburbs at risk of losing their investments in future when energy prices ramp up. These data tend to be readily available from municipal planning offices.

- Each industrial, commercial or institutional concern operating in your community has an environmental "footprint" and may depend on nature for its feedstock. There are hundreds of single-industry towns in Canada, and if you live in one of them, this is an obvious starting point for priority-setting, whether you depend on lumber, minerals, fish, or wheat. A sustainable community plan does not have the whole surrounding resource base as its focus, but must at least make assumptions about how the resources are managed.

- Where feasible, the community also needs to contribute to best practices, e.g., by supplying compost, gearing education to sustainability, securing transitional support, or in other ways. Data on remaining natural resource stocks are available but may be contentious in terms of their validity and implications. That is, some argue reserves always increase as technology of extraction improves. Others argue the data are simply wrong, or should be ignored.

- Smoking and related diseases are among the highest causes of death in North America. Lifestyle-related behaviour, i.e., obesity, also ranks high.[23] Both are subject to intervention at a community scale, and form important starting points for assessing sustainability. All Canadian data are readily available from Statistics Canada for larger jurisdictions. They may need to be adapted and/or collected for smaller communities.

ACTUAL CAUSES OF DEATH IN THE UNITED STATES, 1990



[23] See: http://dccps.nci.nih.gov/od/causes.html.

The relative importance of each of the above types of "problem" indicators, and thus also how best to rank solutions can vary according to economic bases of different community to some extent, as suggested below.

COMPARING THE POTENTIAL IMPORTANCE OF DIFFERENT TYPES OF "PROBLEM" INDICATORS FOR DIFFERENT COMMUNITY ECONOMIC BASES

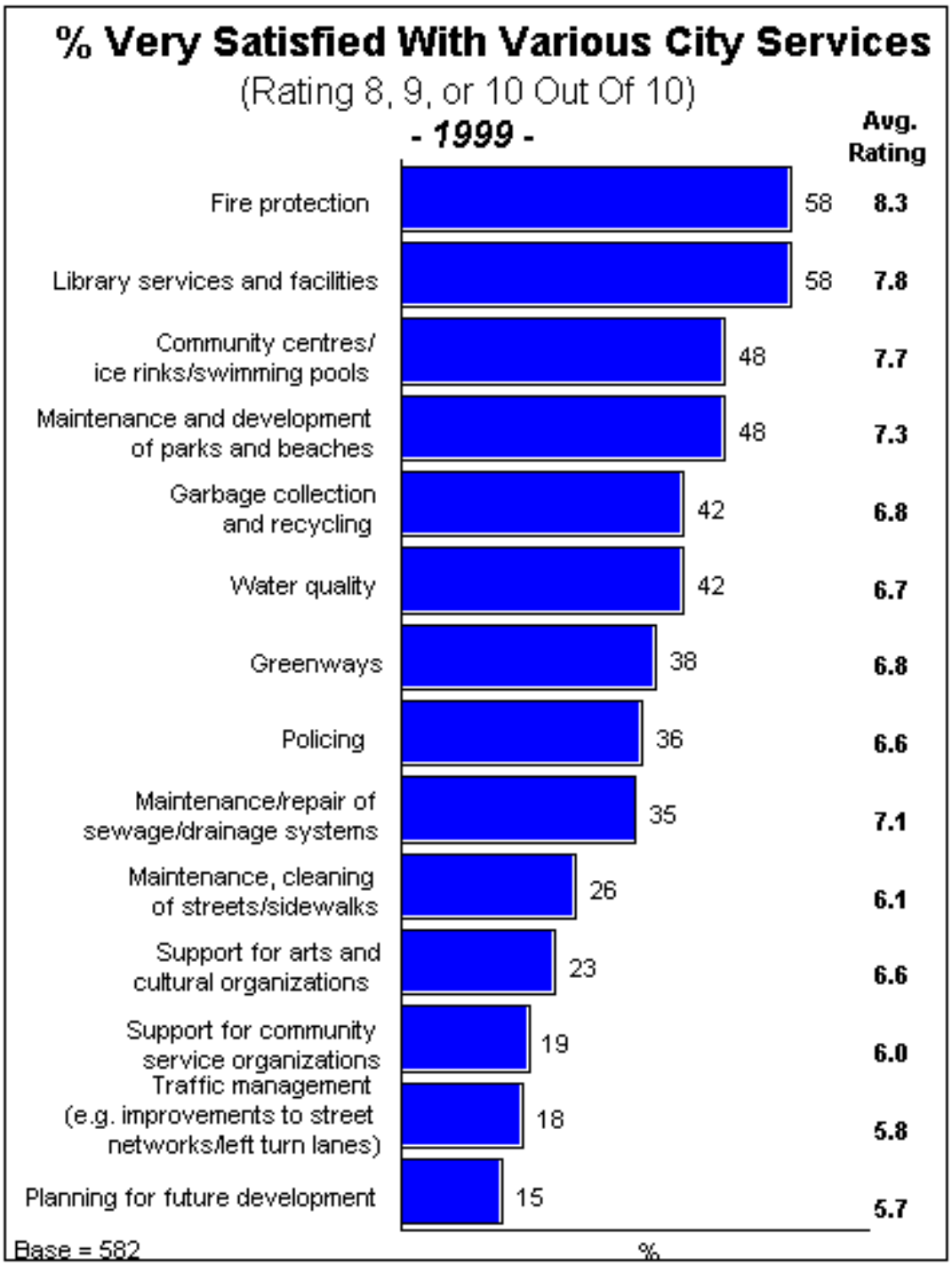
ECONOMIC BASE: / PROBLEM INDICATOR:	NATURAL RESOURCES	MANUFAC-TURING	MULTIPLE SECTORS	SERVICES, TOURISM
Energy consumption	H	H	L	L
Water consumption	H	H	L	H
Solid waste disposal	L	H	H	L
Toxic waste disposal	L	H	H	L
Habitat destruction	H	L	H	H
Resource reserves	H	L	L	L
Smoking rates	S	S	S	S
Suicide rates	S	S	S	S
Accident rates	S	S	S	S

Legend: H = Higher for this type of community relative to other types.
L = Relatively lower because of community size or other factors involved.
S = Similar for all community types.

2.2.2 Ranking the biggest problems

Four key dimensions need to be considered in finding indicators that can help decision-makers to rank problems in order of potential importance:

- Their size, meaning how many people, what kind of geographic areas, and what volumes of air, water, and land pollution are involved.
- Their seriousness (historic risks of death, injury, and economic losses associated with the problem).
- Their wider social and economic impacts, even if they do not affect many people directly.
- The public perceptions of the problem, i.e., whether people are alarmed or unconcerned, as suggested by polling data illustrated below.



Source: www.city.vancouver.bc.ca/ctyclerk/cclerk/020409/marktrend.pdf.
Note that frequent changes are made to the data presented by this Website.

SUGGESTED METHODS OF RANKING BIGGEST PROBLEMS

FACTOR:	SAMPLE INDICATORS:	FINDING INDICATORS:
People affected	Numbers known to be adversely affected each year. Numbers in direct daily contact with environmental threats. Numbers at health risk from threats. Numbers believing they are at risk.	Check hospital admissions, medical case data. Map population in relation to sources. Map population characteristics by vulnerability. Secure polling results.
Land areas affected	Hectares developed annually. Hectares polluted, by level. Hectares removed from agricultural production. Square kilometres at risk of disasters... flood plains, etc.	Map, calculate development lands. Map pollutants by level. Calculate and map lost farmland. Map and calculate areas under disaster threat.
Volumes of pollution	Tonnes of SO2, etc., emitted Litres of sewage, etc., emitted Tonnes of waste sent to landfill	Calculate amounts by sources and types.
Degree of risk	Toxicity rating in low concentrations. Point at which emergency measures required. Frequency of recorded occurrences of disasters, etc.	Check concentrations. Calculate threshold levels of danger. Check history of disasters.
Economic effects	Jobs lost. Jobs under threat. Businesses closed. Businesses threatened. Known reserves of a resource. Estimated reserves of a resource.	Poll industries. Poll businesses. Estimate reserves.
Social impacts	Communities disrupted Cultural heritage damaged	Consult communities.
Population perceptions	Percent of population believing it is a problem. Percent of experts believing it is a problem.	Poll population. Poll experts.

2.2.3 Building community support

In some communities, people in charge of various long-standing sources of pollution or resource depletion and waste often fight rear-guard actions to protect their current practices. They may also threaten loss of jobs.

It is safe to assume they will try to contradict efforts to rank their activities high on the list of environmental problems. You can hope for surprises, which do occur regularly as businesses take on more and more responsibility for their environmental impacts.

2.2.4 Making the results stick

Unless you face this test and win, a sustainable communities plan may lose its credibility before it gets off the ground. At the same time, there are many ways of turning a top rank as a problem into a success story as well. In brief, the best tactic in developing the ranked list may be to find someone ready to champion specific actions to help move themselves down the list, or even off it. That is how many past environmental standards have been established... by individual firms being ready to change and showing that change was feasible.

2.3 Align priorities with dominant community values.

2.3.1 Finding the best available knowledge

"Dominant" community values can probably be determined best through long-term polling of underlying community attitudes and behaviour, like that carried out by Environics Research Group Limited and other firms.[24] Such data may also be implicit in indicators such as participation in local elections, in different types of voluntary organizations, etc. However, much knowledge about values also comes from in-depth sociological and anthropological analysis of communities and does not readily lend itself to ranking methods. Quantitative methods such as polling need to play a supportive role to studies based on careful analysis of history, culture, psychology, and political dynamics.

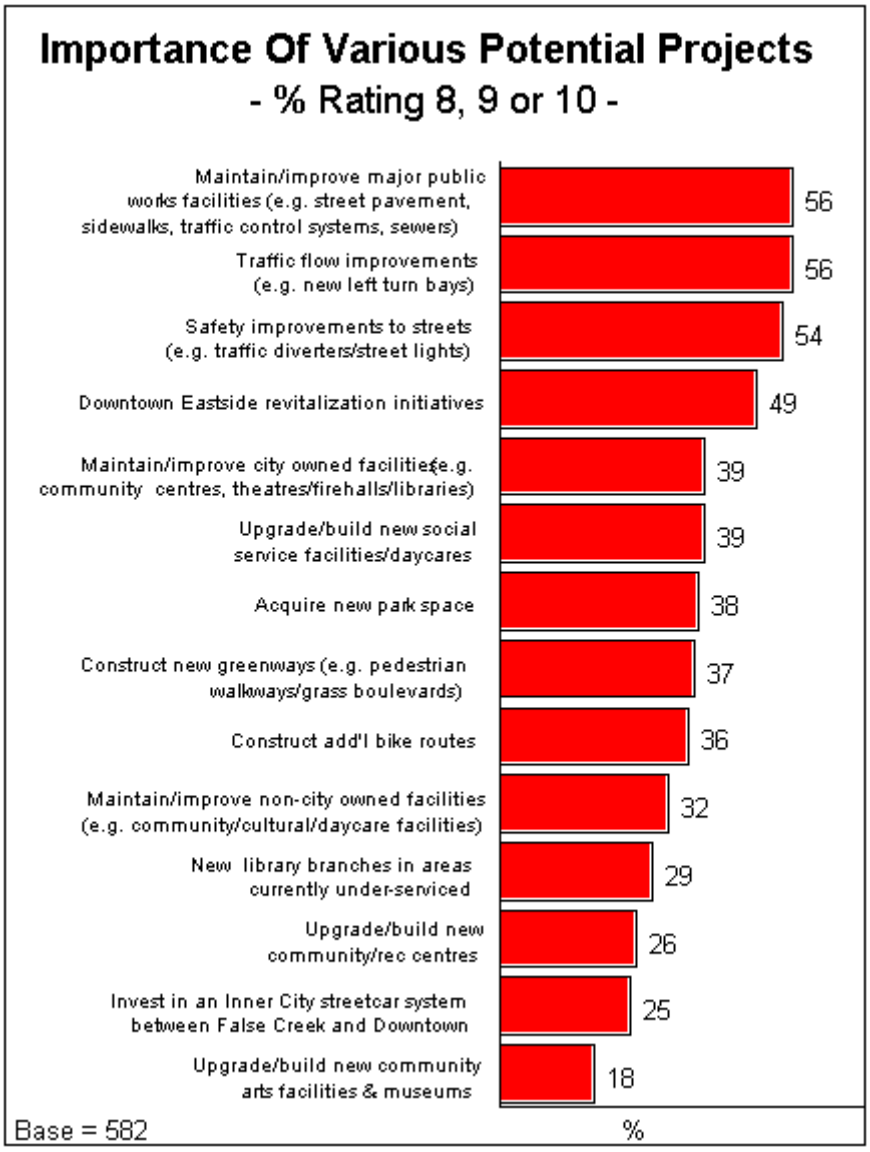
The basic perspective of this Guide is that community values are relatively stable, but precisely how they are expressed is very dynamic, making claims to “know what the people think” open to question. Moreover, people do change their values over time, and as result of experience. The aim of community leaders of vision is to use their knowledge of dominant community values in order to reshape those values, or at least attitudes and behaviour over time. A classic example is the trend toward tolerance of diversity, promoted by a succession of national, provincial, and municipal leaders over decades. Looking back, people now wonder what the fuss was about.

It is possible that community values having specific implications for environmental quality, such as individual freedom of movement may shift over time under the combined pressures of demographic change, energy prices, congestion and journey-to-work times, for example.

[24] See for example, Michael Adams, *Sex in the Snow - Canadian Social Values at the End of the Millennium*. (Toronto: Viking, 1997).

2.3.2 Ranking the community values

According to the "Arrow Impossibility Theorem", a group of individuals can like "A" better than "B" and "B" better than "C", but it does not logically follow that the group as a whole therefore must like "A" better than "C".[25] This theorem certainly applies in the case of community choices about the environment. That is, when people are offered "less pollution", "more jobs", and "lower taxes" all at once, they usually want all three, even if these are contradictory values. The chart below suggests some of the "I want it all" approach of residents in groups.



Source: www.city.vancouver.bc.ca/ctyclerk/cclerk/020409/marktrend.pdf.

[25] See for a further explanation: www.sjsu.edu/faculty/watkins/arrow.htm.

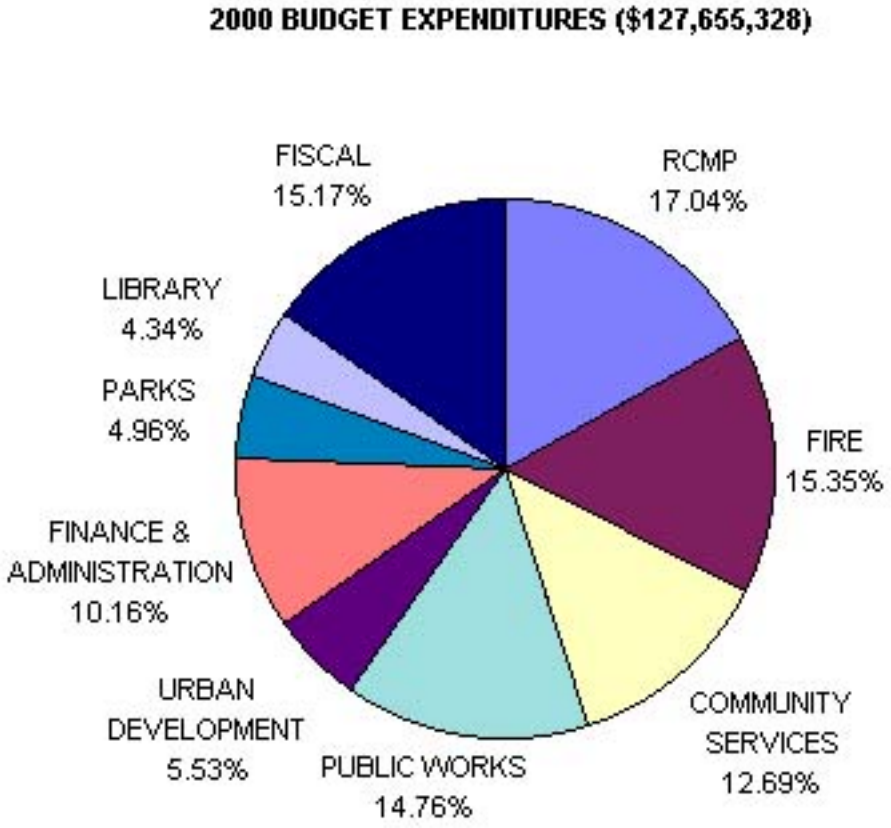
Pollsters try to get around this problem by taking two values at once and trying to resolve the contradictions among preferences. In other words, people are asked whether they want a cleaner environment even if it means higher taxes, or fewer jobs in their community. This can produce a somewhat more sensibly ranked order of community perspectives, but still is not perfect. A key role of political leaders is precisely to try to satisfy the maximum number of voters (and of values) with each set of actions. As a result, public policy often consists of "package deals" in which government expenditure on less pollution is combined with stiffer penalties for polluters and transitional assistance for workers as well.

These comments are a prelude to saying that ranking values and preferences is not a mechanical process. Tables based on the various indicators are very much intended as one source for an intensely human process of creativity and synthesis. People respect creative leaders to go beyond "what the polls say", and also that "stick to their guns" if they do so in a tactful way.

SUGGESTED METHODS OF RANKING DOMINANT VALUES

FACTOR:	SAMPLE INDICATORS:	FINDING INDICATORS:
Numbers of supporters	Percent of people in favour Percent of people opposed Numbers in attendance at community meetings	Check existing polling results or commission new polls. Take attendance.
Current budget allocation	Percent of budget allocated annually to various objectives. Percent growth in different allocations.	Develop charts based on "environmental" funding allocations regardless of departmental source.
Current staff allocation	Numbers of staff directly engaged. Numbers of staff periodically assigned. Poll results on staff attitudes.	Develop charts based on "environmental" staff allocations regardless of departmental source.
Community organization	Numbers of organizations active in the field.	Develop inventories; check participation in events.
Demonstrated behaviour	Percent participating in current programs. Trends in more "environment-friendly" behaviour. Willingness to pay for specific environmental benefits and results.	Do surveys of intended versus actual behaviour affected by community environmental programs. Check program revenues for specific initiatives, e.g., user fees.
Political and expert judgement	Consensus of opinion. (A succession of questionnaires may be used in which expert results are fed back to the group... called a "Delphi study".	Some studies exist for mayors of cities around the world, but are not undertaken for Canada.

As outlined above, various indicators can address at least five different but complementary ways of getting at ranking values: day-to-day public opinion and long-term attitudes; actual allocations of money and staff as illustrated below; willingness to devote volunteer time to a cause; what people actually do about their stated values, especially how they allocate their personal income; and what leaders and opinion-shapers think about an issue.



Source: www.city.vancouver.bc.ca/ctyclerk/cclerk/020409/marktrend.pdf.

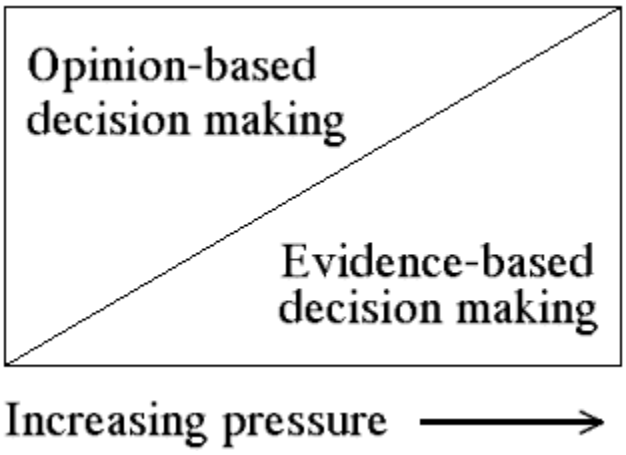
2.3.3 Building community support

The challenge in starting priority-setting with values is twofold. First of all, many communities *say* they have much the same values. The differences lie in what they *do* about them. In addition, discussions of priorities among values can also be a contentious way to initiate sustainability planning. For example, should human or animal life be given primacy? Should humans strictly limit their activities to save other species and ecosystems, even to the point of not evolving technology further and of stopping population growth?

Perceptions of important values are closely linked with ideologies and personal identity. This can lead to posturing that has little to do with the actual steps to be taken, on which even rabidly ideological opponents may happen to agree. At the same time, stressing shared community values is a natural enough opening to discussions of all kinds, and is typically called a "visioning" exercise.[26]

2.3.4 Making the results stick

Making decisions about the environment always involves balancing several different values at once, each of which needs to included in appropriate ways.[27] By showing how given actions create the largest number of "win-win" results from a variety of community value perspective, you increase the chances of acceptance and implementation. Individual behaviour can be shaped rather rapidly through new technologies, such as low-emission vehicles or by targeted interventions, such as governors on vehicle engines. However, long-term attitudinal change to reflect different values, e.g., much less reliance on motor vehicles in favour of bicycles and walking, can be a slow process.



Source: www.ihs.ox.ac.uk/ebh/ebh1a.html.

[26] See www.heiferindonesia.org/program/cmodel.htm for a discussion of "value-based planning".

[27] For a discussion of health determinants as an exercise in multi-valued choice, see: www.hc-sc.gc.ca/hppb/phdd/determinants/.

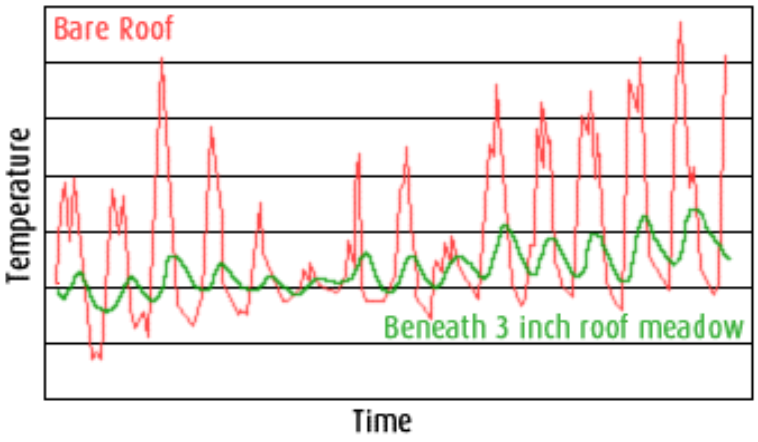
2.4 Choose the most effective solutions.

2.4.1 Finding the best available knowledge

On the surface at least, this is one of the easiest places to start from a community consensus-building standpoint. People at every point on the political spectrum agree on the need for program and project effectiveness. The challenge is to find consistent data series that will be helpful in creating rankings. There are quite a number of "one-off" studies that document the impacts of various specific environmental programs and projects. However, ranking poses significant problems in organizing many seemingly disjointed results.[28]
Here are some tips for assessing comparative effectiveness of different solutions:

- For programs to support diffusion of new technology, effectiveness can be determined to a significant extent from analysis of the engineering performance of the systems or devices chosen, especially relative to other options. That is, if the program is expanding the application of effective devices, to a reasonable portion of the capital stock, it is probably effective. An example would be a program to promote more extensive use of conservation devices or renewable energy sources.

- Determining effectiveness from comparative engineering performance is also a major option for programs to insulate dwellings, etc., for which ready diagnostic tools such as thermography exist. In fact, virtually any program relating to the built environment can be examined in this way.



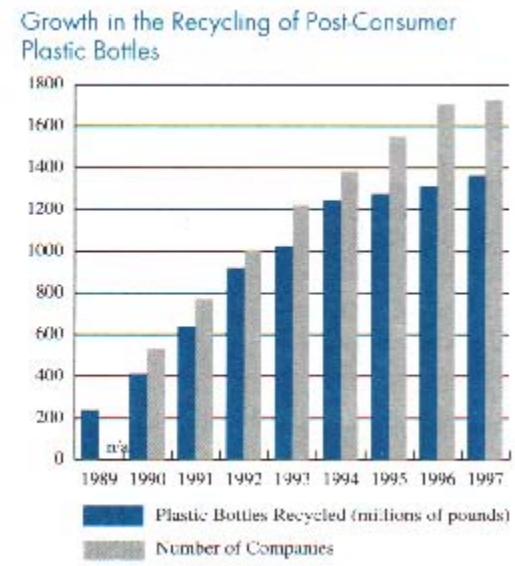
Source: http://eetd.lbl.gov/HeatIsland/.

[28] Indeed, this Guide started with a focus on comparative effectiveness and found that the data still do not support the kind of sophisticated ranking scheme first envisaged.

- Two further issues of relative effectiveness arise once the different merits of technologies have been assessed. One is whether a given intervention, such as a subsidy to new buyers, is the cheapest way to secure the same result, e.g., whether buyers would have purchased anyway. Another is whether the intervention may actually be slowing down technology diffusion as prospective buyers wait for subsidies to be instated.

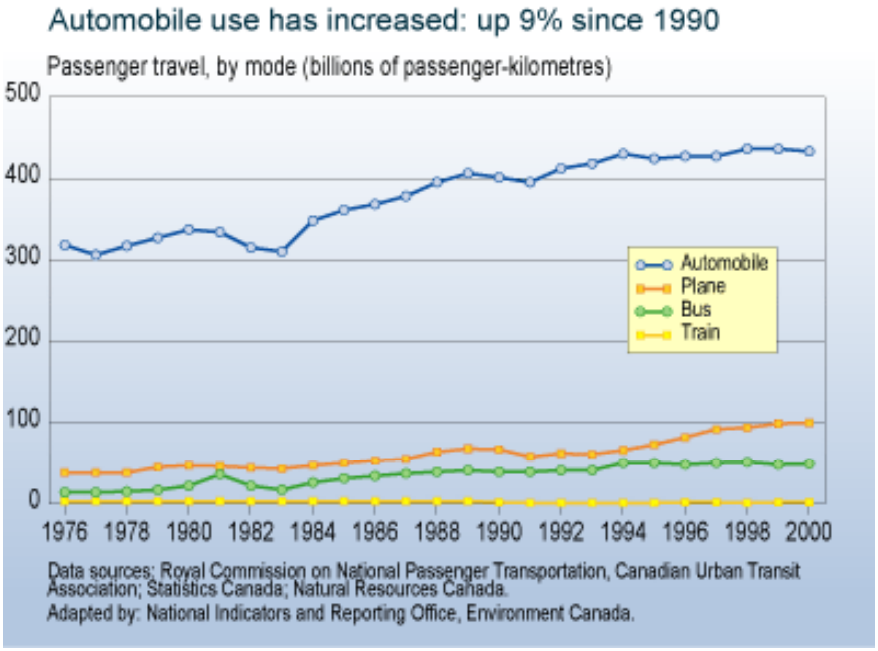
- Cost/benefit analysis is essential to ranking different interventions according to their impacts. For specific fields, such as solid waste management, the World Bank has carried out extensive work that can also be adapted to Canadian circumstances. However, it is still surprising the extent to which comparative cost-benefit assessments have not been carried out.

- Polling data on the popularity of different solutions may be unreliable since people benefiting usually want to keep the benefits coming. However, polling data on actual behaviour is probably valuable, provided they are backed up by other indicators. An example is Statistics Canada and industry (example below) surveys of various "environment-friendly" types of behaviour such as using cloth diapers, recycling newspapers, and avoiding herbicides.



Source: www.americanplasticscouncil.org/apcorg/newsroom/factsheets/.

- Effectiveness is best measured by trends in the desired direction over time, e.g., are more people taking part in municipal recycling year by year. Unfortunately, data like those shown below tend to be among the least frequently collected kinds in specific program evaluations. They require a long-term commitment to this exercise that is typically beyond the scope of specific evaluations.

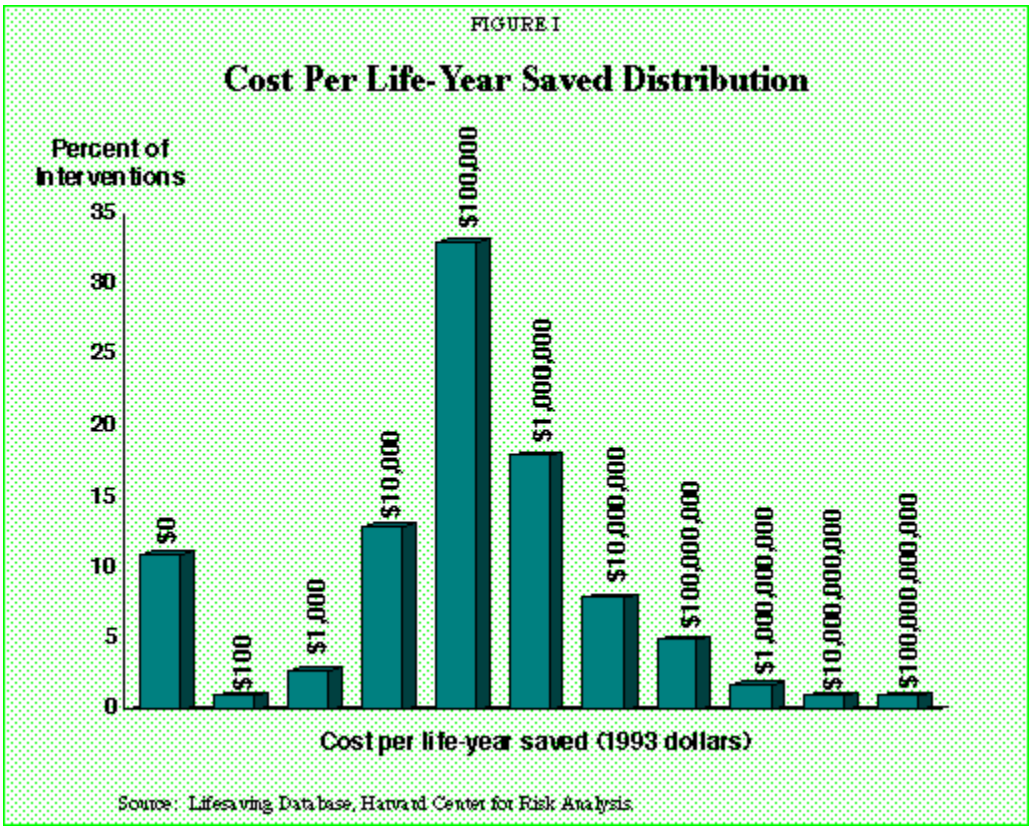


Source: www.ec.gc.ca/soer-ree/English/Indicator_series/default.cfm#pic.

2.4.2 Ranking solutions according to effectiveness

Having said this, it is also true that in recent years, the Federal, provincial and municipal governments have moved to implement "results-based management" (RBM) methods, and these rely more on measurements of ultimate impacts.[29] RBM is the latest variant in a long series of attempts to bring greater focus and accountability to public sector departments and agencies. It is especially important for environmental undertakings, since these tend to spread across many departmental and agency mandates and programs. Managers are expected to develop and implement plans, monitor, measure and evaluate progress made, report on results and make the necessary adjustments. One of the most helpful tools in doing so can be comparative cost-benefit analysis, such as the results of the Harvard study illustrated immediately below.

[29] See as one example, a guide for Federal public service managers prepared by the Treasury Board Secretariat: www.tbs-sat.gc.ca/evil/tools_atolls/comp-guide-02_e.asp.



Source: www.ncpa.org/studies/s204/s204d.html.

This study ranked over 500 different public interventions according to the cost per life-year saved. It is not perfect, especially in considering the impacts of environmental problems that could affect thousands over decades, such as toxic wastes in the groundwater. It does not focus only on community-scale measures. The Harvard study is nevertheless helpful in guiding decision-makers toward the zero and low-cost end of the spectrum, which includes quite a variety of useful initiatives. (Please see the table at the top of the next page, which also includes the root source of this information.)

Most environmental outcomes governments aim to achieve require the contribution of several departments, jurisdictions or non-governmental organisations. Indeed, the ability to build alliances, form partnerships and effectively manage horizontal initiatives is in many cases key to delivering high-quality, cost-effective services to the public. In light of these benefits, governments are implementing significant efforts to improve the management of "horizontal initiatives".

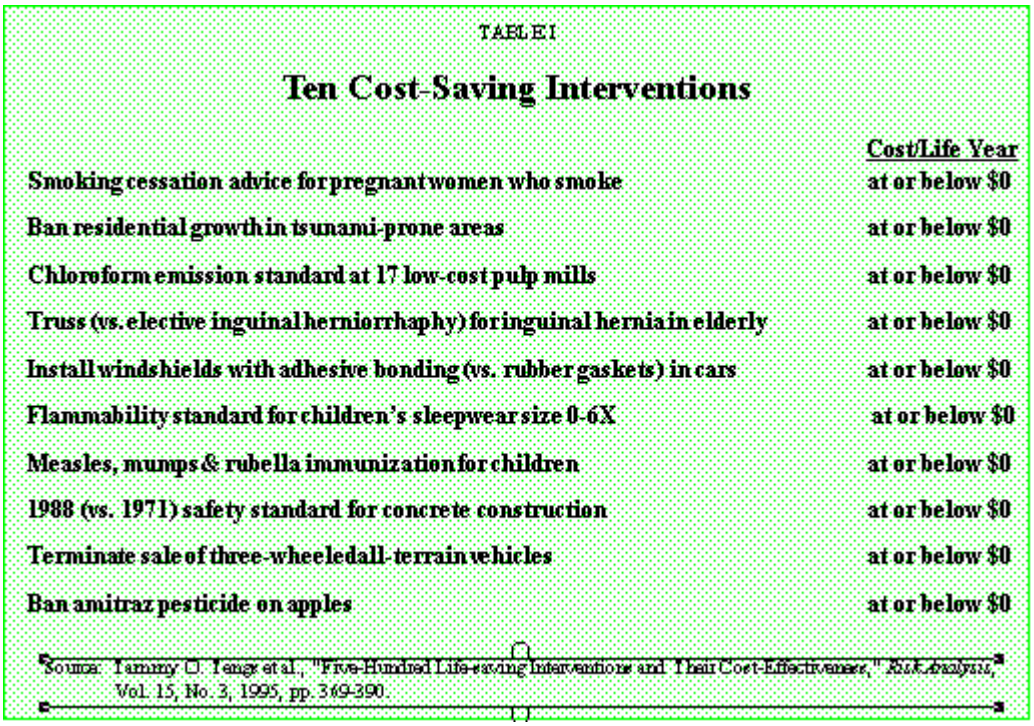


TABLE 1

Ten Cost-Saving Interventions

	Cost/Life Year
Smoking cessation advice for pregnant women who smoke	at or below $0
Ban residential growth in tsunami-prone areas	at or below $0
Chloroform emission standard at 17 low-cost pulp mills	at or below $0
Truss (vs. elective inguinal herniorrhaphy) for inguinal hernia in elderly	at or below $0
Install windshields with adhesive bonding (vs. rubber gaskets) in cars	at or below $0
Flammability standard for children's sleepwear size 0-6X	at or below $0
Measles, mumps & rubella immunization for children	at or below $0
1988 (vs. 1971) safety standard for concrete construction	at or below $0
Terminate sale of three-wheeled all-terrain vehicles	at or below $0
Ban amitraz pesticide on apples	at or below $0

Source: Tammy O. Tengs et al., "Five-Hundred Life-saving Interventions and Their Cost-Effectiveness," *Risk Analysis*, Vol. 15, No. 3, 1995, pp. 369-390.

Managing such an initiative involves entering into an arrangement with partners where there are: shared authority and responsibility among partners; joint investments of resources (such as time, funding, and expertise); shared risks among partners; and mutual benefits and common results.

The table on Page 32 considers specific indicators for each of the different levels of Results-Based Management. This methodology is still struggling for acceptance, especially in relation to community-oriented programs and policies. It faces significant resistance from both program administrators and from clients.

As the scope and depth of documentation for Canadian communities is being built up over time, it will be essential for you to be creative with proxy measures, such as relevant trend data not specifically tied to program activities. You can also search the international literature for findings about analogous programs and projects.

SUGGESTED METHODS OF RANKING MOST EFFECTIVE SOLUTIONS

FACTOR:	SAMPLE INDICATORS:	FINDING INDICATORS:
Inputs	Dollars required per unit of output. Person-years required per thousand units of output. Energy, materials and other physical inputs consumed per unit of output.	Usually in budget documents and expenditure reports. May require estimation from input-output tables.
Outputs	Number of outputs over given time period. Percent of targets met by outputs. Volume of outputs in relation to indicators of entire system affected, e.g., energy-efficient vehicles as proportion of total stock.	Usually in budget documents and expenditure reports. May require "digging" to match up figures from different sources.
User satisfaction	Percent aware of program details. Percent in favour of continuing the program. Percent wanting program changes.	Program evaluation reports may cover these points if a survey was conducted.
Public satisfaction	Percent aware of program. Percent in favour of program among those aware of it. Percent desiring program expansion or termination.	Program evaluation reports may cover these points if a survey was conducted. Few reports do go this far. May require consideration of public policy debates.
Impacts	Percent changes in trends related to goals. Multiplier effects of program in related sectors. Backward and forward linkages of program activities.	Covered in the most comprehensive program evaluation studies.
Outcomes	Trend in program results over a decade or more: impacts compared to goals and targets. Trends in related structural elements of communities, e.g., combustion technology in use compared to previous years. Public perceptions of changes in key environmental factors relevant to program.	Aspects may be covered in the most comprehensive program evaluation studies. Unfortunately does not exist in literature on many community-oriented programs.

2.4.3 Building community support

Once comparative effectiveness data have been assembled and organized, it is essential to build on them with workshop sessions that delve into the "softer" aspects of design, delivery and evaluation. An example is human responses to different waste-related activities according to social status. Specifically, for instance, the relative participation rates of different types of neighbourhoods in community recycling programs may vary greatly. You may need to examine what can be done to overcome barriers that inhibit participation by lower or higher-income areas of the community.

A consensus on what activities are likely to be effective is a natural lead-in to commitments to implement chosen policies and projects. The main "blind spot" is activities that have not really been tried before. Local innovation is essential to achieving community sustainability. While risks can be reduced through careful analysis of options and of experience from other jurisdictions, no change in how things are done is risk-free. At the same time, it is important for everyone in a community to consider what the *risks and costs of inaction* are. They may far outweigh those of periodic program failure.[30]

2.4.4 Making the results stick

The most appropriate innovation strategy, parallel to that adopted in many other fields, to try things out on a smaller scale first, before risking substantial resources and credibility on a large-scale application. Unfortunately, environmental innovations often get "stuck" at the pilot project or program level. They may never reach "critical mass" in which they actually transform the ways in which communities function. This in turn can lead to situations in which "everybody knows" what the environmentally sound pattern of behaviour is, yet the data show clearly that this is not happening.

Established patterns are proving too difficult to turn around. At a minimum, there should always be a "scaling up" plan embodied in the decision to undertake pilot efforts, most importantly including a financing plan for dissemination.[31] In addition, it is important to consider the possibility that an innovation could include simply stopping an environmentally damaging practice of the past, such as dumping trash in out-of-the-way ravines around the community. Finally, a key role of programs such as the FCM “Green Municipal Funds” is to legitimise community actions that may have seemed “far out” or “too innovative” in the past.

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[30] Note that “innovation” in this context means a new, ongoing practice for the municipality or region in question, rather than something never tried anywhere before or only tried on a pilot scale.

[31] See www.innovation.cc/discussion_papers.htm for a whole series of papers on the experience of innovation in cities.

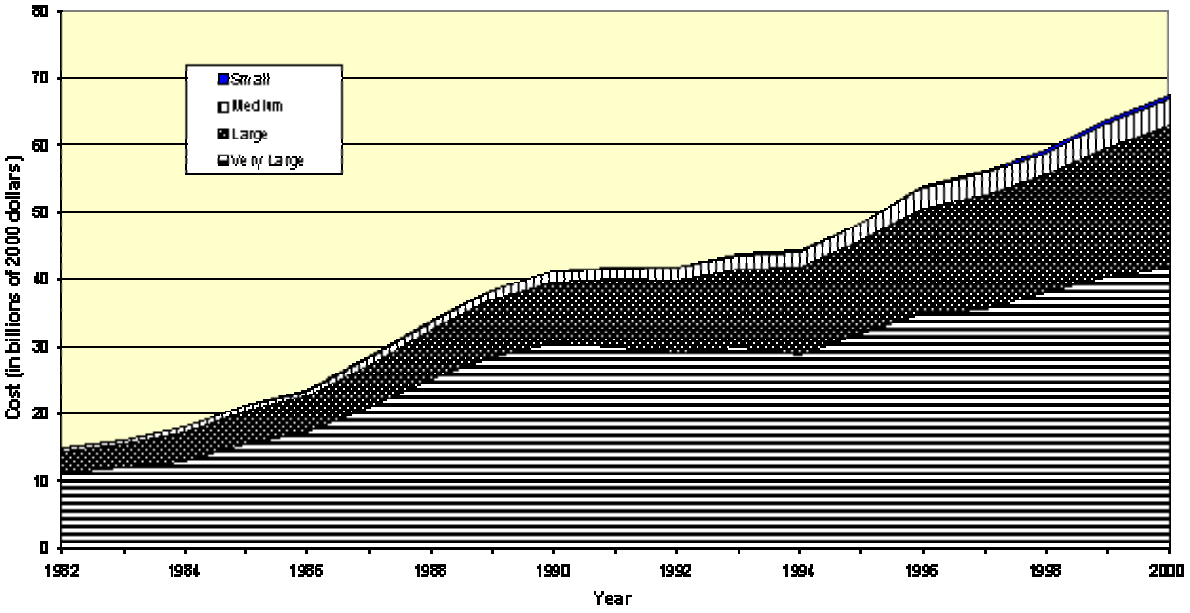
2.5 Pick the lowest-cost solutions.

2.5.1 Finding the best available knowledge

Key challenges here are to define the range of items to be reflected in costing various potential and current initiatives, and then to estimate the amounts for each. Most community investments in new capital equipment, buildings and facilities create "external" costs to those not receiving any benefits. Perhaps they also generate revenues that do not show up in a specific municipal department's budget. To the extent feasible, full costs and revenues over a complete life cycle need to be considered to avoid choices based on "hidden subsidies" and “voodoo economics”. For example, some energy conservation projects have high front-end capital costs, but assuredly pay for themselves over time through revenues and operational savings.[32] Many others may look cheap when only immediate cash outlays of any kind are considered, but turn out to be quite expensive when costs of cleaning up resulting environmental damages to a community are included.

A classic example, likely to grow in importance in the 21st century is the rising cost of relying chiefly on individual vehicles for commuting to work, documented by University of Texas researchers and set out below.

RISING ANNUAL COSTS OF CONGESTION



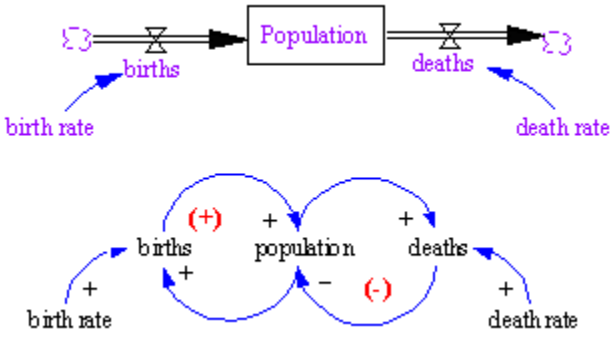
Source: http://mobility.tamu.edu/ums/study/issues_measures/congestion_cost.stm.

[32] This is the business model underlying the "Energy Services Companies" that undertake energy and water retrofits on behalf of municipalities and school boards in return for a share of the savings over time. See www.oee.nrcan.gc.ca/fbi/. See also www.oee.nrcan.gc.ca/fbi/bidders_list.cfm.

2.5.2 *Ranking the solutions according to full life-cycle costs*

Cost-benefit analysis and life-cycle costing methods have become quite sophisticated for looking at *projects* and at specific interventions. Examples are retrofitting buildings with different types of conservation devices, new heating and cooling systems, etc. They may be less helpful or too demanding of data to be useful at a *program* level, i.e., for whole families of projects or combined interventions. At a minimum, it will be necessary to extrapolate from project to program or community-wide results, using expert judgement to fill in the gaps. A further issue in trying to apply the best available knowledge to costing is to realize that somebody's benefit maybe another's cost. Indeed, some stakeholders try to get everyone in the surrounding community to pay the environmental costs of obtaining specific individual or company benefits from a given plant or resource. By taking a "systems view" of costs and benefits, linkages between costs and benefits can be traced. Many policy and program failures can be directly attributed to perverse behaviour when people face what they see as unfair burdens or regulatory hurdles. A whole literature sprang up around these and other "counterintuitive effects" of public policies in the late 1960s and early 1970s.[33] The aim is to set priorities for action fully aware of possible results, without the need to commit major resources to live demonstrations.

SAMPLE COMPUTER MODEL OF URBAN DYNAMICS



SUGGESTED METHODS OF RANKING LOWEST-COST SOLUTIONS

[33] See for example, "The World in a Machine: Origins and Impacts of Early Computerized Global Systems Models" by Paul N. Edwards, et. al., University of Michigan. According to this author, modeling pioneer Jay W. Forrester's "... approach 'follows the philosophy of the manager or political leader more than that of the scientist. If one believes a relationship to be important, he acts accordingly and makes the best use he can of the information available. He is willing to let his reputation rest on his keenness of perception and interpretation.' These sentiments reflected Forrester's lifelong belief that tools should always be forged through actual practice, never only in academic laboratories." See www.si.umich.edu/~pne/modeling.world.htm#Heading12.

FACTOR:	SAMPLE MEASURES:	FINDING MEASURES:
Direct revenue potential	Dollars raised annually through user charges. Dollars raised annually through sales of goods and services.	Check budget documents and program reports.
Savings potential	Dollars saved by consumers on individual billings, e.g., via insulation. Energy saved in kilojoules per year. Water saved in hectolitres per year.	Survey consumers as to billing experience. Do engineering calculations checked via post hoc testing.
Indirect economic benefits	Multiplier effects of jobs created or saved.	Calculate from analogous programs.
Subsidy requirements	Dollars per unit of capital subsidy required, following which operating costs will be covered. Dollars per unit of operating subsidy that can be phased out. Dollars per unit of permanent operating subsidy required. Dollars per unit of indirect or "hidden" subsidies via tax system or lack of full-cost pricing.	Normally, these are contained in preparatory documents as program options are considered. Then, they are checked by program evaluation research.
Opportunity costs	Dollars of value of waste energy, water, etc. not saved through inaction. Foregone benefits of alternative programs not able to be mounted.	Not often contained in policy analysis or program evaluation documents, but can be estimated.

2.5.3 Building community support

In general, it is safe to assume that communities will support most readily those measures that do not increase local tax burdens, and if possible that produce net revenues. They will also tend to be open to measures that can be borne within existing revenues. Increased financial burdens must be reserved for initiatives that deliver tangible benefits to the community and are based on well-established technologies and practices.

These basic positions underline the need to seek outside financial support from provincial and federal governments and/or the private sector when innovation is involved. Such support, even if reluctantly provided, is also usually required to undertake "catch-up" work not reflected in current budgets, e.g., cleaning up major toxic dump sites "orphaned" by the owner's bankruptcy.

Here are the suggested principles for achieving the lowest possible costs in relation to community benefits obtained:

- Start with initiatives that provide information to people already motivated to act.
- Move next to initiatives that actively generate profits to the community.
- Move next to break-even or "revenue-neutral" initiatives.
- Move next to modest subsidy initiatives, e.g., providing initial recycling boxes.
- Move next to initiatives that require up-front investment but generate diffuse benefits over the long term.
- Do last initiatives that require deep subsidies on a sustaining basis, and with limited general benefits.

Some of the most interesting and helpful work in this field has been carried out by CMHC, focusing on using “demand-management” techniques in planning for and building community infrastructure.[34]

2.5.4 Making the results stick

The process of going systematically through the different cost options for achieving environmental improvements will itself serve to engage a community in the implementation process. Market-like incentives can be used to reward virtuous behaviour, assuring that people will continue to pursue implementation long after the first blush of enthusiasm has worn off.

However, such incentives do not necessarily require communities to enter into "ideological" debates such as whether a facility is better in public or private hands. Many alternative formats have been developed that can produce revenues and achieve savings without major changes in the status quo.

[34] See for example, *Practices for Sustainable Communities*. For more information, go to www.toolsofchange.com/English/CaseStudies/default.asp?ID=157

2.6 Find the quickest solutions.

2.6.1 Finding the best available knowledge

The quickest solutions are usually those that relate to well-established patterns of change in different elements of communities. These rates are quite similar in almost all types of communities, and so they provide good rules of thumb. To check the current rates for different elements of the built environment, you can secure the Statistics Canada data on construction in Canada, and also the historical data series on changes in the capital stock.

For any given initiative, it is important to determine from those who have implemented similar projects how long this took. Many contractors have a very good sense of what is required to undertake different capital projects, since they typically have many "under their belts". For "softer" programs, completion times may be less predictable, but again, expert opinion for average communities is likely to exist.

2.6.2 Ranking the solutions according to speed of implementation

Through several decades of analysis of "leverage points" for change, at which limited resources can produce wider effects, the author has developed the following rough sequence:

- Anything that simply requires informing people already highly motivated to act. For example, people can be told to evacuate the community in advance of a forest fire in about fifteen minutes and be gone from danger zones in an hour or less. (A few hours.)

- Any solutions that involve transferring *money* to individuals, though the decision to do so may not be a fast one. This fact is clearly visible in many election platforms calling for tax breaks. (Several weeks to a few months.)

- Solutions that require people to work with what they have, in simple and readily understood ways, such as taking out the trash. (A few months to a year for widespread acceptance.)

- Solutions that switch a single major piece of equipment from one mode of operation to another through retrofit, e.g., converting an energy plant to gas. (4-6 months)

- Solutions that require modest investment in what people already have but are somewhat demanding of do-it-yourself skills are next, e.g., home renovation. (1-3 years, including training and technology transfer.)

- Solutions that require new items of equipment to meet higher standards as older ones are retired at the normal end of their service life, e.g., more energy efficient cars and trucks. (5-7 years, or more depending on rates of turnover.)

- Solutions that require a major retrofit of the whole capital stock, involving closing it down for extended periods at key switching points, or major systemic additions to the capital stock, such as new lines added to existing rapid transit systems. (5-15 years)

- Solutions that require an entirely new type of infrastructure to be laid, but in "tracks" already established. (5-20 years)

- Solutions that upgrade the whole margin of annual construction, e.g., to increase insulation standards of buildings can start in a matter of 1-3 years, but take decades to achieve major results. (15-50 years or more)

- Solutions that require entirely new infrastructure in entirely new locations. (25-50 years).

Within any one of these categories, it may also be helpful to consider various factors that will affect the pace of given projects, as set out in the table here.

SUGGESTED METHODS OF RANKING QUICKEST TO IMPLEMENT

FACTOR:	INDICATOR/MEASURE:	FINDING IT:
Time frame for acceptance	Percent of population now aware. Percent currently favouring. Percent currently opposed.	Pre-implementation polling results.
Time frame to implement	Reliance on information. Reliance on individual action. Reliance on municipal action. Reliance on renovation. Reliance capital construction.	Can be calculated from the project budget, weighted to take into account basic costs of different types of activities.
Numbers of players	Number of agencies involved. Number of stakeholders involved.	Can be found in program planning documents.
People to convince	Number of communities to convince.	Can be found in program planning documents.
Opposed "vested interests"	Proportion somewhat opposed Proportion strongly opposed	Expert opinion, coupled with meeting results.

2.6.3 Building community support

This is one of the easiest entry points for setting priorities, because the principles involved are quite clear. However, finding quick solutions does not constitute a sufficient strategy on its own. The tendency in environmental policy is to "pick the low-hanging fruit", delaying the day of tough choices and major change. The key to sustaining community support is to mix quick successes with steady progress on more fundamental matters.

2.6.4 Making the results stick

Rapid results are often essential to keeping up momentum in public support for action on key environmental problems. Thus your community will need a focused management team and sufficient resources to sustain activity over the kinds of time frames laid out above. This may appear to be a tall order because of the electoral cycle and because people get tired, burned out, promoted, etc.

It is very important to gear institutional arrangements to the anticipated speed of implementation, and to continue "reinventing" the implementation process. For example, fundamental shifts in capital stock such as transportation systems are normally carried out through standards enforced by a well-established bureaucracy, funded from ongoing tax revenues. Changes relying on voluntary action and individual household initiative are accompanied by public communication campaigns that are constantly updated and freshened.

2.7 Developing Priority-Ranked Solutions

The five basic priority-setting strategies laid out above form a natural sequence leading to ranked solutions according to your community's priorities:

- Begin with the biggest problems that you are not already addressing, or else have good reasons why they must be set aside.

- Check consistency of selecting this set of problems with wider community values and behaviour patterns. There is a fine balance between exercising leadership and ensuring that you have followers.

- Select an array of promising solutions based on documented effectiveness or substantial indicators suggesting they will be effective. Consider also the potential "counterintuitive" effects, or what can go wrong during implementation, and how it can be countered.

- Check the costs and benefits of the candidate solutions, considering both up-front and long-term or life-cycle costs. See what the opportunities are for creative financing.

- Then look at likely implementation time frames for the candidates, and even more important, what kind of "slice" of progress toward solutions can be cut off within the immediate future.

Of course, the natural and logical thing to do will be to bear in mind and juggle all of these factors at the same time, focusing on each in succession but then going back as necessary. This avoids otherwise utterly perfect priority solutions that will bear fruit just after your retirement, etc.

3. AGENDAS TO HELP SET WELL-DEFINED PRIORITIES

3.1 Introduction

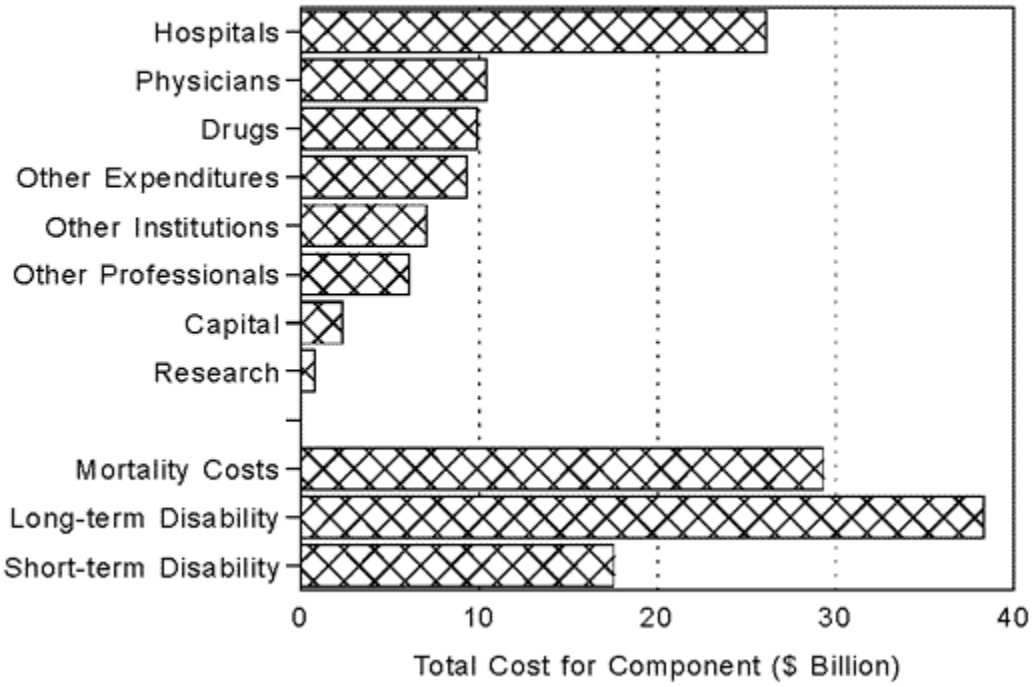
No community has to begin from scratch in developing and setting priorities for more sustainable development. There is plenty of advice and information from a variety of sources. Indeed, the main issue is how to pick and choose from among the many competing sets of potential priorities. The following pages present summary sheets on each of eleven relevant agendas discovered in more than 18 months of research. Below is the content outline for each summary page.

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Historical origins in Canada. Transfer of ideas from abroad. Key leaders among organizations. See for a timeline: http://www.sustreport.org/resource/es_timeline.htm.
Themes:	Main sub-topics within the overall agenda.
Where It Stands:	Mature. Still evolving. Newly emerging. Position as of 2003.
National Stakeholder Groups and Agencies:	Some notable non-governmental, industry and governmental organizations promoting the agenda, or major elements of it.
Who Needs to be Most Engaged Locally:	Key managers of directly affected community systems and institutions. Regions and communities most affected.
Priority Objectives:	Protect human and animal health and safety; generate environment-friendly livelihoods; prevent pollution; protect biological diversity; manage resources wisely; conserve sensitive areas; promote social equity; protect and conserve built heritage; protect private property.
Priority Problems:	Suggestions for ranking environmental problems in this field, with measurable problem indicators.
Priority Resources:	Types of budget funds committed to solutions in this field.
Priority Solutions:	Types of interventions associated with this agenda, with measurable result indicators.
Entry Points for Action:	What may lead to priority consideration of this agenda.
Key Linkages:	Relationships to other agendas included here.
Implications:	First steps in determining the relevance of this agenda for sustainability of a specific community.
Tools/Resources for Priority-Setting:	Some Websites of interest, and with significant resources for community priority-setting. A "work in progress".

3.2 Community Health Promotion and Protection

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Major concern of first urban reformers in Canada in 1880s, focusing on typhoid and cholera caused by poor sanitation. Expanded by Medical Officers of Health in early 1900s.
Themes:	Public health promotion; public health regulation.
Where It Stands:	Mature. Greatly increased attention following SARS, BSE, and Walkerton. Increased national emphasis on population health, and the economic burden of illness. (Chart)
National Stakeholder Groups and Agencies:	Canadian Public Health Association. Health Canada. Canadian Population Health Initiative. Canadian Institute of Public Health Inspectors. The Environmental Health Foundation of Canada.
Who Needs to be Most Engaged Locally:	Medical Officers of Health; managers and community animators of social services, community clinics, recreational services, educational system; owners and managers of restaurants, hotels, tourism and recreational facilities.
Priority Objectives:	Protect human and animal health, defined by reducing disability-free years of life lost to diseases.
Priority Problems:	Largest sources of population disability and of economic loss. Most persistent and dangerous sources of infectious diseases transmitted in public places.
Priority Resources:	Community health promotion budgets; hospital budgets; health-related inspection budgets.
Priority Solutions:	Public health education; school-based health education; vaccinations; mother-child care programs; public health inspection programs of restaurants, hotels, tourism facilities.
Entry Points for Action:	Following major community outbreaks of diseases.
Key Linkages:	Public safety. Disaster management and prevention. Equity in community services.
Implications:	Tracking your community's trends in infectious diseases is an essential element of determining sustainability.
Tools/Resources for Priority-Setting:	www.cpha.ca/; www.hc-sc.gc.ca; www.cihi.ca www.ciphi.ca/.

ECONOMIC BURDEN OF ILLNESS IN CANADA, 1993

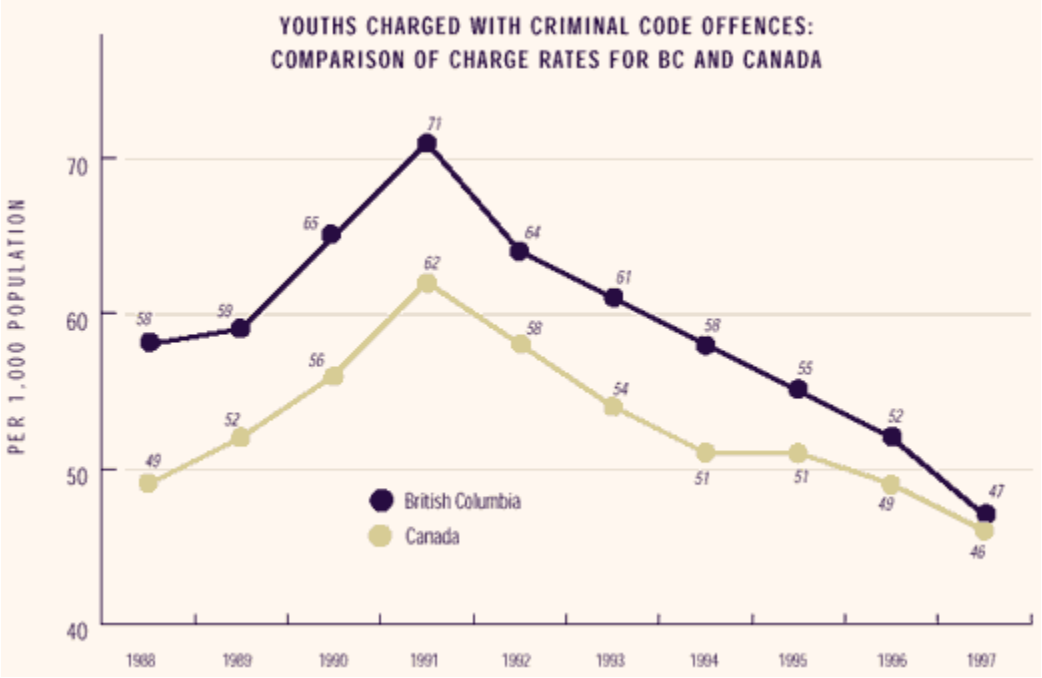


Total = $156.9 Billion

Source: www.hc-sc.gc.ca/pphb-dgspsp/publicat/ebic-femc93/index.html

3.3 Crime Prevention

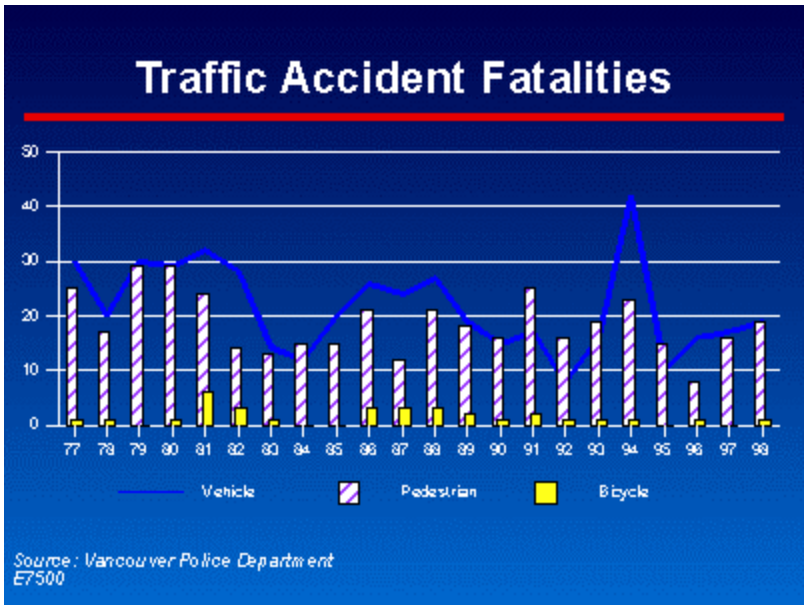
TOPIC:	IN BRIEF:
Where This Agenda Came From:	Early religious and municipal concerns about theft, murder and rape in rapidly-growing urban environments led to formation of local police forces. Concerns about drunken and disorderly conduct associated with frontier settlements, supported creation of the Royal Northwest Mounted Police.
Themes:	Reducing violent crime rates. Reducing crimes against property, including vandalism. Creating an atmosphere of personal security. Protecting animals against abuse and neglect.
Where It Stands:	Mature, with growing use of statistics to pinpoint effectiveness of policing and of prevention measures by geographic areas.
National Stakeholder Groups and Agencies:	Canadian Crime Stoppers Association; Canadian Crime Prevention Centre; Canadian Police Association; Humane Society of Canada.
Who Needs to be Most Engaged Locally:	Managers of police, schools, recreational system, community development services. Community leaders.
Priority Objectives:	Protect human and animal health and safety. Promote social equity. Protect private property.
Priority Problems:	Crime rates, by seriousness. Property damage. Amount of community environment defaced/destroyed. Incidents of animal maltreatment and of mauling by dogs.
Priority Resources:	Policing budgets; property insurance; justice system budgets; animal shelter budgets.
Priority Solutions:	Community policing. Street-proofing programs for children. Neighbourhood surveillance programs, e.g., Neighbourhood Watch. Design of buildings to reduce vulnerability. Block Parent programs. Animal protection programs.
Entry Points for Action:	Widely-publicized crimes that capture community concern.
Key Linkages:	Equity in community services. Public safety.
Implications:	Check on community sense of fear about walking at night, allowing children to visit within the neighbourhood.
Tools/Resources for Priority-Setting:	www.canadacrimestoppers.com/; www.replacefear.com/; www.humanesociety.com/.



Source: www.bced.gov.bc.ca/annualreport/ 98_99/

3.4 Public Safety

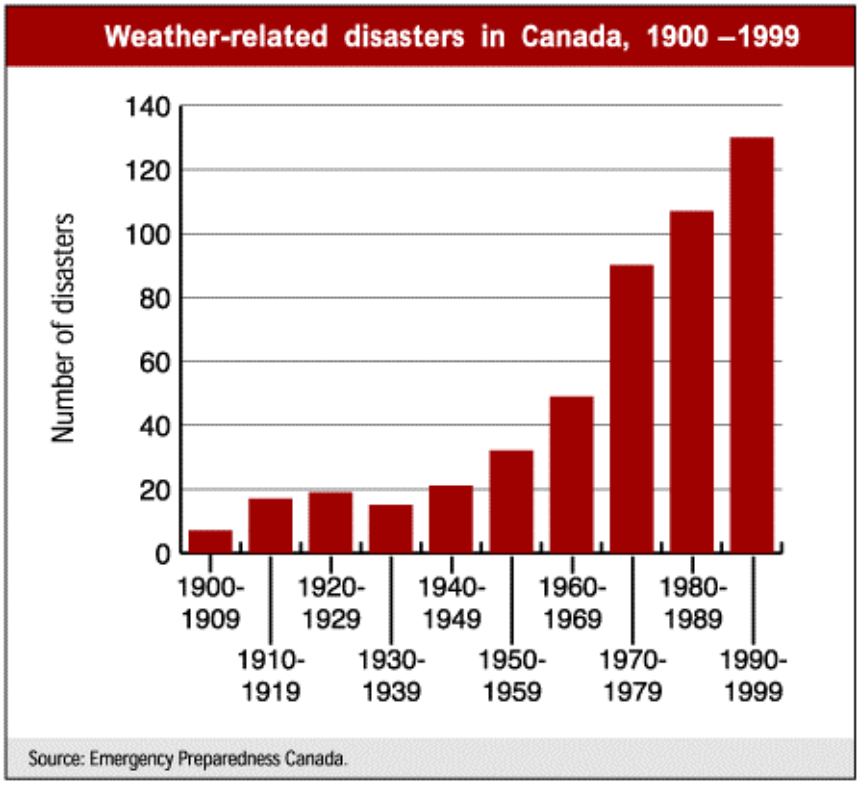
TOPIC:	IN BRIEF:
Where This Agenda Came From:	Historic concern about huge fire losses in the 1880s. Increasing loss of life to traffic accidents in early 1900s.
Themes:	Reducing accidental deaths and injuries. (Chart) Reducing property losses due to fires. Ensuring the safety of products and technologies in everyday use.
Where It Stands:	Mature. Increasing attention to public awareness and prevention.
National Stakeholder Groups and Agencies:	Safe Communities Foundation; Canada Safety Council; Smartrisk Foundation (youth); Fire Prevention Canada; Health Canada (product safety).
Who Needs to be Most Engaged Locally:	Managers of traffic, transit, fire and police services, schools, recreational system, product approval processes.
Priority Objectives:	Protect human and animal health and safety; promote social equity; protect private property.
Priority Problems:	Largest sources of accidental death and injury. Communities and buildings most vulnerable to fire. Most dangerous products.
Priority Resources:	Police budgets; road construction and traffic signal budgets; municipal procurement budgets.
Priority Solutions:	Building inspection, traffic calming, community awareness campaigns.
Entry Points for Action:	Coroner's inquest reports on deaths and injuries in specific cases.
Key Linkages:	Community health promotion and protection. Disaster management and mitigation.
Implications:	Check on absolute numbers of accidents and on comparative rates for communities of similar size.
Tools/Resources for Priority-Setting:	www.safecommunities.ca/; www.safety-council.org/; www.smartrisk.ca/www.fiprecan.ca/; www.hc-sc.gc.ca/hecs-sesc/.



Source: http://www.city.vancouver.bc.ca/corpsvcs/budgets/trends/moving/slide20.htm

3.5 Disaster Management and Mitigation

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Historic concern about major community disasters, such as the Halifax explosion, Winnipeg floods, the landslide at St. Jean Vianney, Hurricane Hazel, etc. Ongoing threat of earthquakes to Vancouver, Montreal and surrounding regions.
Themes:	Emergency preparedness. Disaster management and continuity of business. Disaster mitigation.
Where It Stands:	Rather mature, but evolving toward greater emphasis on prevention compared to response. Increased attention following September 11, 2001 attacks in United States. Increased attention to links between severe weather and climate change. (Charts) Health-related "disasters" much more prominent: SARS, BSE, West Nile, ebola, HIV/AIDS.
National Stakeholder Groups and Agencies:	Canadian Centre for Emergency Preparedness; Insurance Bureau of Canada; Institute for Catastrophic Loss Reduction; Office of Critical Infrastructure Protection and Emergency Preparedness, Department of National Defence; local Emergency Measures Organizations.
Who Needs to be Most Engaged Locally:	Emergency Measures Organizations; municipal building inspectors; planning departments; community association leaders. (Note that who leads on disaster management and who pays for disaster recovery may be different.)
Priority Objectives:	Protect human and animal health and safety; protect and conserve built heritage; protect private property.
Priority Problems:	Most vulnerable communities, infrastructure and buildings; most likely disasters, both natural and technological.
Priority Resources:	Insurance expenditures; military expenditures relating to aid to the civil power; emergency preparedness expenditures.
Priority Solutions:	Most rapid and effective responses to disasters that occur. Most cost-effective measures to prevent disasters in future.
Entry Points for Action:	Engaging community in aftermath of disasters.
Key Linkages:	Community health promotion and protection. Public safety.
Implications:	Consider state of community's emergency preparedness.
Tools/Resources for Priority-Setting:	www.ccep.ca/; www.ibc.ca/; www.iclr.org/; www.ocipep.gc.ca/; www.epconference.ca/.



Source: www.ec.gc.ca/TKEI/cc_weather/s_weather_e.cfm.

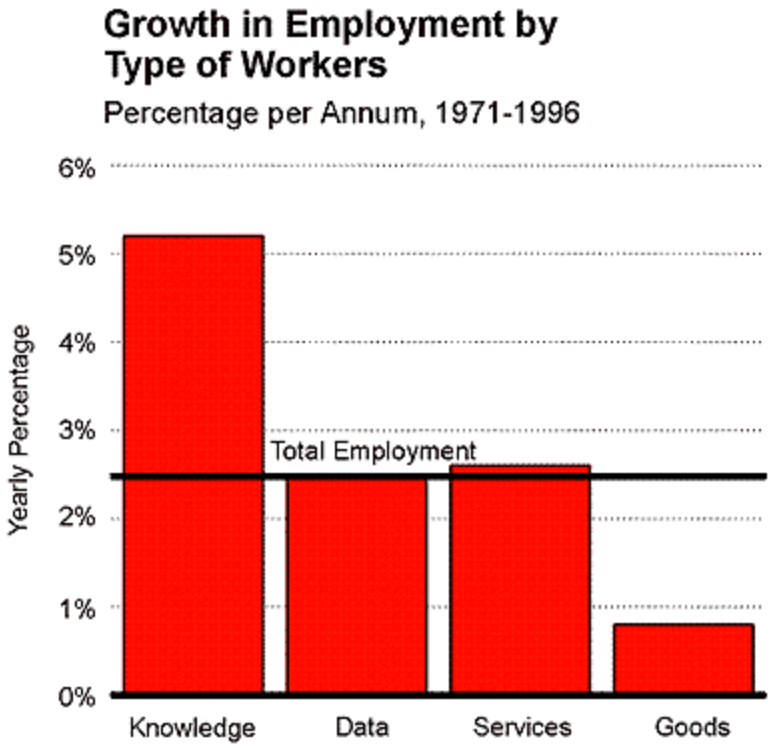
Canada's Most Expensive Natural Disasters

1. 2001–02 Drought (British Columbia, Prairies, Ontario, Quebec, Nova Scotia): preliminary estimate, $5 billion
2. 1998 Ice storm (Ontario and Quebec): $4.2 billion
3. 1979–80 Drought (Prairies): $2.5 billion
4. 1988 Drought (Prairies): $1.8 billion
5. 1984 Drought (Prairies): $1 billion
6. 1996 Flood (Saguenay, Quebec): $1 billion

Source: www.ec.gc.ca/science/sandefeb03/a3_e.html.

3.6 "Green" Community Economic Development

TOPIC:	IN BRIEF:
Where This Agenda Came From:	"Back to the land" movement of 1960s. Evolution of community economic development from employment generation programs of the 1970s. "Environmental industries" policies of 1980s.
Themes:	Attract non-polluting industrial development. Expand environmental industries. Encourage "Community Economic Development".
Where It Stands:	Still evolving, with moves to bring together "clean production" and "green communities" agendas to focus on sustainable economic development. Complemented by “information society” trends. (Chart)
National Stakeholder Groups and Agencies:	National Round Table on the Environment and the Economy; Globe Foundation; Canadian Environmental Industries Association; Canadian Union of Public Employees; Federation of Canadian Municipalities.
Who Needs to be Most Engaged Locally:	Owners and managers of environmental industries and business services firms.
Priority Objectives:	Generate environment-friendly livelihoods; prevent pollution; manage resources wisely; promote social equity.
Priority Problems:	Largest loss of jobs. Largest pollution emissions per employee.
Priority Resources:	Local industrial commission budgets; Chamber of Commerce budgets; social agency budgets; community venture capital, investment funds.
Priority Solutions:	Multi-stakeholder community employment projects; community "green investment" programs.
Entry Points for Action:	Threats to community economic base caused by business closures, played out natural resource base.
Key Linkages:	Pollution prevention. Equity in community services.
Implications:	Check on "green" profile of your current economic base.
Tools/Resources for Priority-Setting:	www.nrtee-trnee.ca; www.ceia-acie.ca/; www.cupe.ca/arp/09/10.asp; www.globe.ca; www.enterweb.org/communty.htm.



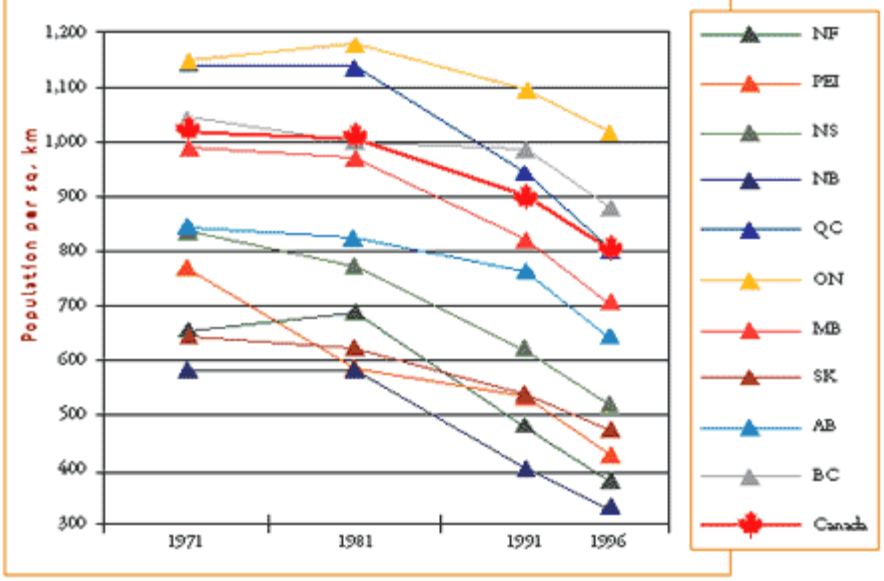
Source: www.hrdc-drhc.gc.ca/sp-ps/arb-dgra/publications/bulletin/vol3n2/e/

3.7 Habitat Conservation

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Commission of Conservation formed in 1911 helped initiate habitat conservation awareness and actions.
Themes:	Preserving biological diversity. Preserving "special places". Establishing more and larger protected areas.
Where It Stands:	Mature. Increasing attention to ravines, escarpments, mountainsides, and wildlife habitats within or close to urban areas.
National Stakeholder Groups and Agencies:	Canadian Parks and Recreation Association; Canadian Society of Landscape Architects; Nature Conservancy of Canada; National Round Table on the Environment and the Economy; Environment Canada; World Wildlife Fund Canada.
Who Needs to be Most Engaged Locally:	Developers; parks and recreation directors; naturalist associations; community associations.
Priority Objectives:	Conserve sensitive areas; protect biological diversity; manage resources wisely.
Priority Problems:	Largest areas of current and potential habitat destruction (Chart). Most fragile ecosystems, e.g., wetlands.
Priority Resources:	Parks and recreation budgets; wildlife reserve budgets.
Priority Solutions:	Protected area regulations; ecological planning; nature awareness programs.
Entry Points for Action:	Concern about loss of wildlife habitats and fragile ecosystems near urban areas.
Key Linkages:	Resource conservation, renewable resources. Pollution prevention. " Green" community economic development.
Implications:	Check on the amount of green space per resident.
Tools/Resources for Priority-Setting:	www.cpra.ca/; www.csla.ca/; www.natureconservancy.ca; www.nrtee.ca; www.ec.gc.ca; www.wwfcanada.org.

FIGURE 1

URBAN POPULATION DENSITY BY PROVINCE, 1971–1996

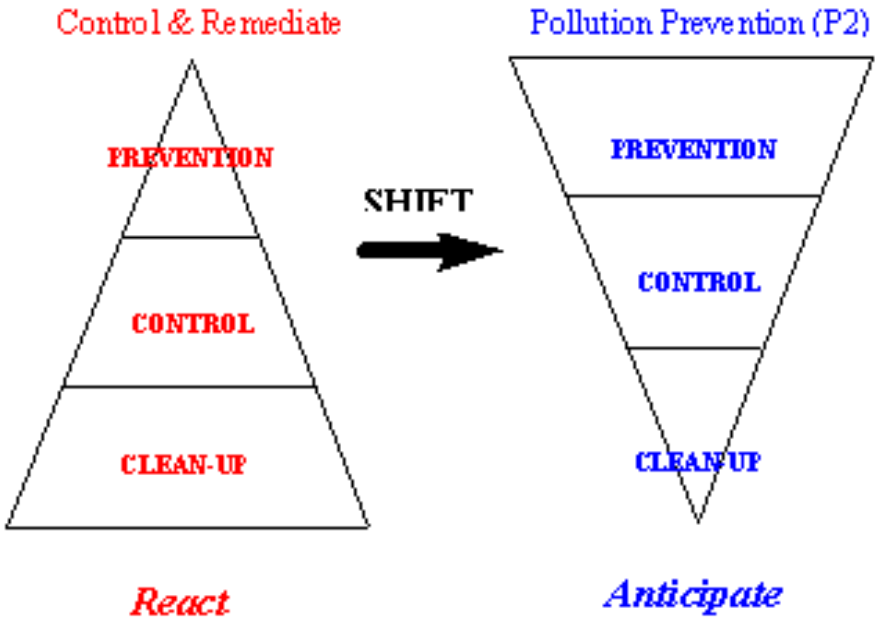


Source: Statistics Canada, Econnections: Linking the Environment and the Economy—Indicators and Detailed Statistics. Cat. no.16-200-XKE, Canada, 2000.

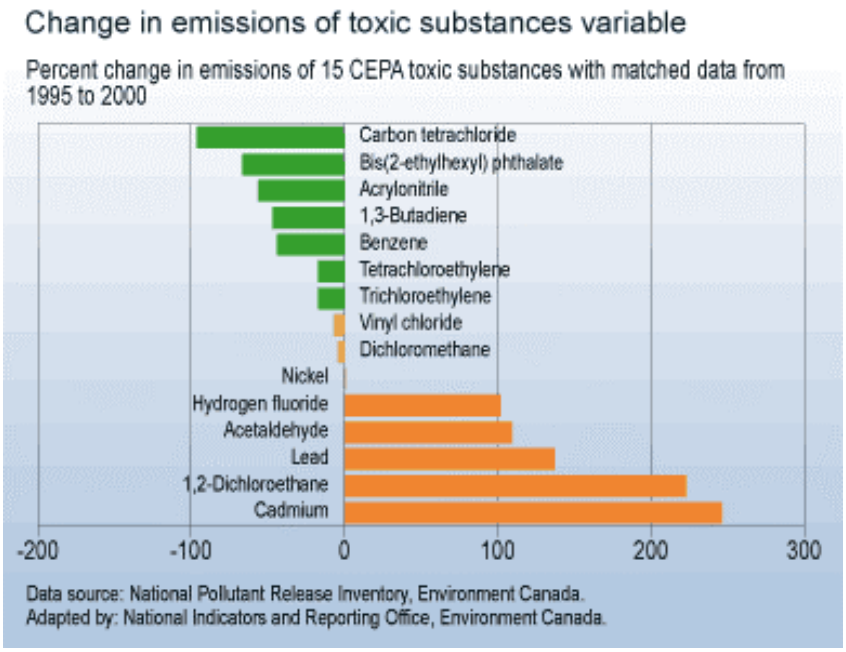
3.8 Pollution Prevention

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Commission of Conservation of 1911-21 first promoted resource conservation and reduction of pollution from industrial sources.
Themes:	"Clean technology"; "Green infrastructure"; “Envirohomes”; Waste recycling; "urban heat island" mitigation initiatives.
Where It Stands:	Mature. Best practices still evolving to reflect changing industrial processes, building, and infrastructure technologies and economics.
National Stakeholder Groups and Agencies:	National Round Table on the Environment and the Economy; Canadian Centre for Pollution Prevention; Federation of Canadian Municipalities; Environment Canada; National Research Council Canada; Green Roofs for Healthy Cities; Canadian Home Builders Association.
Who Needs to be Most Engaged Locally:	Plant managers; municipal engineers; builders; property managers; municipal waste system managers.
Priority Objectives:	Prevent pollution; protect human and animal health and safety; manage resources wisely.
Priority Problems:	Most polluting industries by volume; largest volumes of municipal liquid wastes by type; largest volumes of solid wastes going to landfill by type; largest sources of heat.
Priority Resources:	Municipal economic development and industrial park budgets; municipal waste management budgets; municipal street and facility maintenance budgets.
Priority Solutions:	Replace end-of-pipe pollution control with upstream waste reduction measures. Re-engineer production systems to reduce energy and materials waste. Manage demand so as to reduce scale of infrastructure required.
Entry Points for Action:	Competition for investment and jobs.
Key Linkages:	Resource conservation, renewable resources.
Implications for Your Community:	Check biggest opportunities for savings from pollution prevention and for "win-win" developments.
Tools/Resources for Priority-Setting:	www.nrtee.ca; www.c2p2online.com/; www.ec.gc.ca/cppic/; www.chba.ca: www.greenroofs.ca; www.ccme.ca/; www.fcm.ca/; www.infraguide.gc.ca; www.sustainability.ca.

SHIFTING THE EMPHASIS



Source: www.on.ec.gc.ca/pollution/fpd/prevention/.



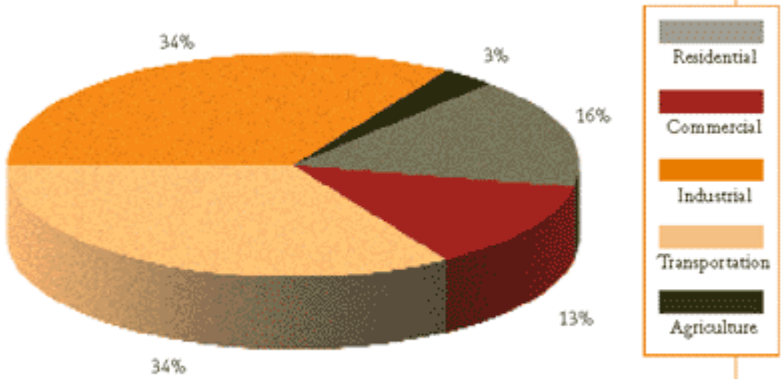
Source: www.ec.gc.ca/soer-ree/English/Indicator_series/default.cfm#pic.

3.9 Resource Conservation, Renewable Resources

TOPIC:	IN BRIEF:
Where This Agenda Came From:	"Resources for Tomorrow" of 1960s; "energy crisis" of 1970s. Global warming and solid waste management in 1990s.
Themes:	Community energy planning. "Green" power. Comprehensive building retrofits. "Green" buildings and building materials. "Infill" development. Solar, wind, geothermal, tidal power.
Where It Stands:	Mature, but different themes at different stages. Widespread implementation still a challenge, apart from hydro-electric power and selected recycling.
National Stakeholder Groups and Agencies:	Environment Canada; Natural Resources Canada; National Round Table on the Environment and the Economy; Canada Mortgage and Housing Corporation; Canadian Home Builders Association; Canadian Association for Renewable Energies; Solar Energy Society of Canada.
Who Needs to be Most Engaged Locally:	Energy generation companies; transportation companies and authorities; builders/developers; standards bodies.
Priority Objectives:	Manage resources wisely; generate environment-friendly livelihoods; prevent pollution; protect biological diversity; conserve sensitive areas.
Priority Problems:	Greenhouse gas emissions; largest sources of SO2, NOx and ground-level ozone; energy waste.
Priority Resources:	Energy budgets of municipalities and school boards; waste management budgets; fleet management budgets.
Priority Solutions	Energy service contracts with major institutions. Building and component retrofits, e.g., toilets. New buildings constructed to higher standards, e.g., R-2000.
Entry Points for Action	Concern about rising conventional fuel costs and supply, climate change.
Key Linkages:	Pollution prevention. "Green" community economic development. Community health promotion/protection.
Implications for Your Community;	Check on largest sources of energy and resource wastage and main savings potentials that will pay back quickly.
Tools/Resources for Priority-Setting:	www.chba.ca; www.re-energy.ca/; www.renewables.ca; www.solarenergysociety.ca/.

FIGURE 9

GHG EMISSIONS BY END-USE, CANADA, 2000

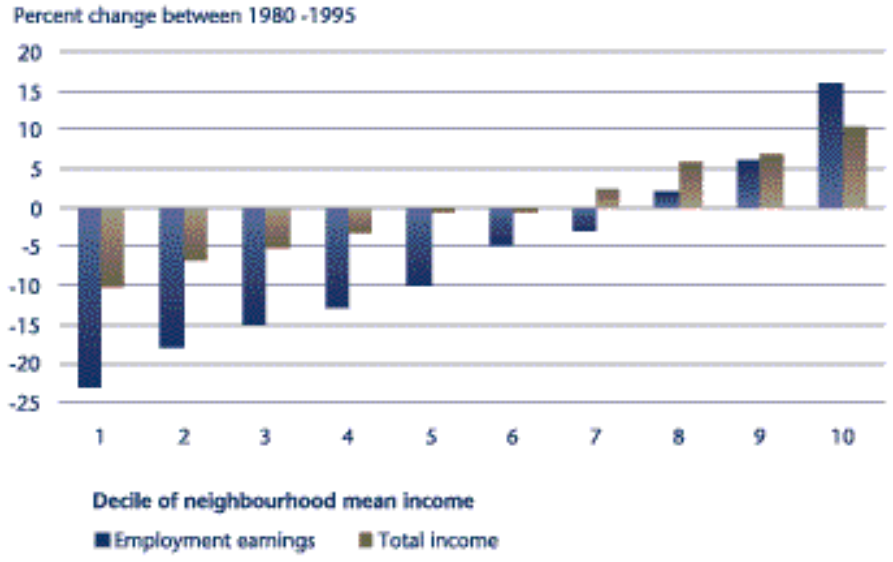


Source: Natural Resources Canada, Energy End-use Data Handbook, 1990 to 2000, June 2002, pp. 6-9.

3.10 Equity in Community Services

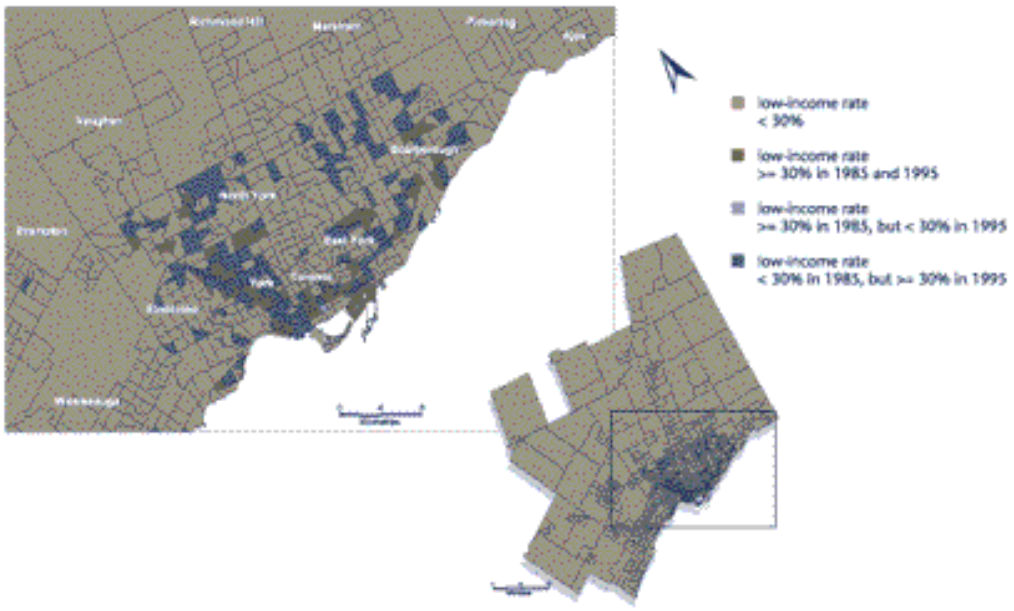
TOPIC:	IN BRIEF:
Where This Agenda Came From:	Started with church alms for the poor, religious schools and community services. Developed following World War II into a "social safety net".
Themes:	Bring basic services to similar standards across and within all communities. Address multi-problem communities and homelessness. Empower communities to develop their own solutions.
Where It Stands:	Cyclical concern, with major emphasis in 1970s, less effort in 1980s, and resurgent concern in specific localities such as Winnipeg since then.
National Stakeholder Groups and Agencies:	Caledon Institute; Canadian Council on Social Development; Congress of Aboriginal Peoples; Assembly of First Nations. Federal-Provincial-Territorial Ministers responsible for social services.
Who Needs to be Most Engaged Locally:	Social development workers; advocacy groups for homeless persons; disabilities advocacy groups; First Nations leaders; provincial and municipal social service agency managers and staff.
Priority Objectives:	Promote social equity; generate environment-friendly livelihoods.
Priority Problems:	Most substandard living conditions; lowest-income communities and neighbourhoods.
Priority Resources:	Social welfare budgets; neighbourhood infrastructure upgrading funds; First Nations reserve upgrading and construction programs.
Priority Solutions:	Community partnerships
Entry Points for Action:	Concern about social costs
Key Linkages:	"Green" community economic development. Community health promotion and prevention. Crime prevention.
Implications for Your Community:	Map neighbourhoods by incomes over time; check indicators of community services relative to others.
Tools/Resources for Priority-Setting:	www.vibrantcommunities.ca/; www.ccsd.ca/.

CHART 1:
Earnings decline in poor neighbourhoods, but gain in rich neighbourhoods, Toronto, 1980-1995



Data Sources: the 1981, 1986, 1991 and 1996 census

CHART 2:
The number of low income census tracts rose between 1985 and 1995 in Toronto.



Source: Statistics Canada, Census of Population, 1986, 1996

3.11 Heritage Conservation

TOPIC:	IN BRIEF:
Where This Agenda Came From:	Original efforts to establish community history museums starting in first half oft the 20th century, greatly expanded after World War II.
Themes:	Preservation of specific historic buildings and places because of past events and/or people associated with them; conservation of examples of architectural styles typical for different periods of history.
Where It Stands:	Mature. Considerable local attention and activism.
National Stakeholder Groups and Agencies:	Heritage Canada; Canadian Museums Association.
Who Needs to be Most Engaged Locally:	Building owners; municipal public works managers; tourism program managers; municipal inspection managers and staff.
Priority Objectives:	Protect and conserve built heritage; generate environment-friendly livelihoods; prevent pollution; conserve sensitive areas.
Priority Problems:	Largest threats of destruction to heritage property and heritage areas
Priority Resources:	Building upgrade investment; rehabilitation assistance program budgets; museum program budgets; tourism promotion budgets.
Priority Solutions:	Regulations governing heritage areas.
Entry Points for Action:	Concern about loss of a local historic landmark. Concern about loss of tourism income.
Key Linkages:	Habitat conservation. Pollution prevention.
Implications for Your Community:	Check on status of heritage neighbourhoods and of historic landmarks. Consider tourism opportunities.
Tools/Resources for Priority-Setting:	www.heritagecanada.org/; www.civilization.ca/orch/www02d_e.html; www.chin.gc.ca/; www.museums.ca/.

Source: www.cci-icc.gc.ca/graphics/ architect-4.gif

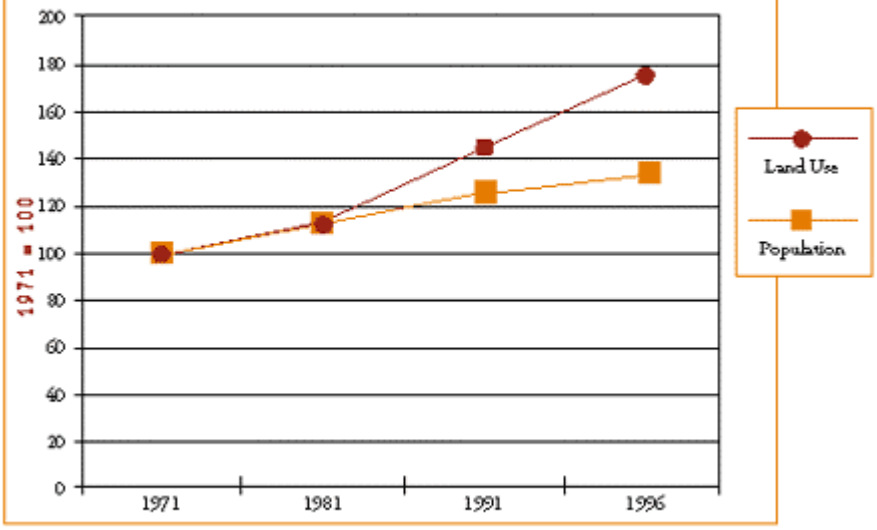
Source: www.crmgroup.ns.ca/ service.html

3.12 Creating a Culture of Sustainability

TOPIC:	IN BRIEF:
Where This Agenda Came From:	World Commission on Sustainable Development Report of 1987; Rio Summit of 1992; work of Canadian university research institutes and of individual planning authorities.
Themes:	Community sustainability indicators; building and implementing long-term scenarios of community sustainability.
Where It Stands:	Emerging.
National Stakeholder Groups and Agencies:	National Round Table on the Environment and the Economy; Federation of Canadian Municipalities; International Institute for Sustainable Development; Canadian Rural Revitalization Foundation. (Providing intellectual leadership are: Greater Vancouver Regional District, Cities Plus and others.)
Who Needs to be Most Engaged Locally:	Mayors and councils; planning departments; active residents associations; business leaders.
Priority Objectives:	Protect human and animal health and safety; generate environment-friendly livelihoods; prevent pollution; protect biological diversity; manage resources wisely; conserve sensitive areas; promote social equity; protect and conserve built heritage; protect private property.
Priority Problems:	Erosion of environmental quality on a variety of fronts. Reputation for quality of setting not attained in actual development.
Priority Resources:	Planning budgets; tourism and industry location promotion budgets; infrastructure budgets as a whole.
Priority Solutions:	Community performance targets. Community sustainability plans. Community indicators. State-of- the-environment reports.
Entry Points for Action:	Concern about sprawl and loss of reputation for livability.
Key Linkages:	All other agendas.
Implications:	Consider level of support for a comprehensive strategy.
Tools/Resources for Priority-Setting:	www.nrtee-trnee.ca; www.fcm.ca; www.sustreport.org/; www.sdri.ubc.ca/; www.basinfutures.net/; www.crrf.ca/; www.envisiontools.com/; www.sheltair.com/; www.smartgrowth.government.on.ca/; www.smartgrowth.bc.ca/.

FIGURE 2

TOTAL URBANIZED LAND AREA, CANADA, 1971–1996



Source: Statistics Canada, Rural and Small Town Canada Analysis Bulletin, Cat. no. 21-006-XIE, September 2001; and Statistics Canada, CANSIM II Series v1, table 510005.

4. INTEGRATING PRIORITIES ACROSS SECTORS

4.1 Introduction

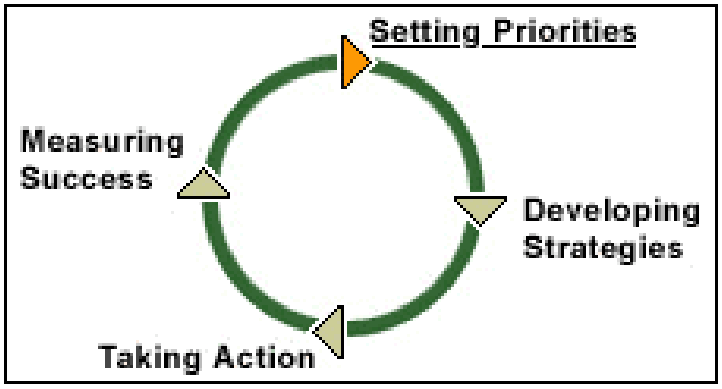
The time has come to consider how best to pull together in useable formats all of the perspectives on setting priorities for more sustainable communities outlined above. Several practical considerations come into play:

- Defining a "vision" within which priorities will flow naturally from broad goals and objectives, and help to define them in more specific terms.

- Laying out a process that will take the vision and turn it into priority actions, especially in the form of "flagship" projects if a community is only beginning to explore and commit to a more sustainable path for the future.

- Developing coherent packages of complementary initiatives and actions that all work together and go beyond individual projects. (These are likely to cross over and to link several of the priority-setting agendas outlined in Chapter 3.)

- Turning these packages into priorities at individual, organizational, institutional, and community-wide levels, since each must be engaged in realizing them.



Source: http://nature.org/aboutus/howwework/about/art5721.html.

4.2 Suggested Principles for Sustainable Communities

There are many different approaches to defining a vision of greater community sustainability. Here is one example, developed by the Ontario Round Table on Environment and Economy. In their view, a sustainable community is one that:

- Recognizes that growth occurs within some limits and is ultimately limited by the carrying capacity of the environment.
- Values cultural diversity.
- Has respect for other life forms and supports biodiversity.
- Has shared values amongst the members of the community (promoted through sustainability education).
- Employs ecological decision-making (e.g., integration of environmental criteria into all municipal government, business and personal decision-making processes).
- Makes decisions and plans in a balanced, open and flexible manner that includes the perspectives from the social, health, economic and environmental sectors of the community.
- Makes best use of local efforts and resources (nurtures solutions at the local level).
- Uses renewable and reliable sources of energy.
- Minimizes harm to the natural environment.
- Fosters activities which use materials in continuous cycles.

As a result, a sustainable community does not compromise the sustainability of other communities (a geographic perspective), and does not compromise the sustainability of future generations by its activities (a temporal perspective).[35]

[35] See: www.sustreport.org/issues/sust_comm.html.

Source: www.gibbsplanning.com/.

4.3 Ten Steps to Priorities for Sustainability

As in the case of visioning, there are a number of quite workable sequences for bringing people on board as part of a community sustainability strategy. Here is one, adapted from a model employed by a U.S. state government:[36]

Step 1: Conduct a local "sustainability" assessment.

Gather baseline information on such subjects as key environmental problems in your community; what you pay for energy; key economic, environmental and social issues, etc. This information provides a baseline for measuring progress later, and can help identify the key goals of a sustainability campaign.

[36] See: www.sustainable.doe.gov/management/tensteps.shtml.

Step 2: Get "stakeholder" concurrence on launching a sustainability program.

Using the assessment from Step 1, build local support for a formal sustainability program, involving all people in the community, including elected officials; neighbourhood, environmental and business groups; the media; churches; government agencies; foundations, etc.

Step 3: Designate a local sustainability champion.

To be successful, your community will need to designate at least one individual to become the champion of and conscience for sustainable development. This person should be sanctioned by the local elected leaders.

Step 4: Create a vision.

Engage the entire community in a "visioning exercise", defining where your community would like to be 20 years from now. The vision should be specific and idealistic, but achievable.

Step 5: Develop a roadmap for reaching the vision.

With the help of all stakeholders, identify what steps your community will need to take to achieve its vision. Assign who will have to do what. This is the main opportunity for setting concrete priorities.

Step 6: Develop sustainability indicators.

Based on your vision and roadmap, identify the "indicators" or yardsticks your community will use to measure progress. Specific examples are: population; energy consumption; pollutant emissions; greenhouse gases; ozone-depleting substances; acid gases; toxics; days of air pollution; hospital admissions and smog; transportation (number of vehicles, distance covered, fuel used); recycling of natural resources; employment; average incomes/percentage of people below the poverty line; food production/number of people using food banks.

(Note that for many of these indicators, it is not essential to collect data specific to your community. Suitable estimates can be derived from figures for larger jurisdictions, interpolated to take account of your community's characteristics. For example, you can pretty easily calculate transport sector emissions from various vehicle averages. Different housing and household types have average energy, water, and materials consumption rates, and rates of wastage that can be multiplied to estimate community environmental loading.)

Step 7: Incorporate sustainability into local policy.

Conduct a thorough "audit" of local policies to determine which advance sustainability and which stand in the way of progress. Remove policy barriers, and create policy incentives.

Step 8: Identify sources of help.

Determine what provincial, Federal and private sector programs are available to assist your community in implementing its sustainability roadmap. Apply to those programs that advance your local goals. (We present more information on sources of financial and technical assistance at the end of this Guide.)

Step 9: Carry out projects.

Start with "early success" projects to begin implementing your sustainability program, and involve the public in them. Celebrate successes with public events and recognition. Then take on more difficult goals and projects as public support and confidence builds.

Step 10: Check your progress.

Using indicators, evaluate your community's progress every two years or so, and make adjustments as necessary. As in the case of developing baseline indicators, considerable use can be made of estimated data in developing these reports.

For example, let us say there appears to be a trend to buying smaller vehicles, as a result of public education and some local incentives such as differential parking rates and more spaces for small cars. In that case, reduced greenhouse gas emissions can be calculated on the basis of manufacturer figures for average fuel consumption. These would be multiplied by Environment Canada figures for greenhouse gas emissions per litre of fuel and then by the estimated numbers of each type of vehicle in your community to get a trend line, year by year.

4.4 Developing Coherent Packages of Priority Actions

Your community may need time to become comfortable with the idea and practice of setting, defending and achieving priorities for greater environmental quality and sustainability in the form of specific projects, e.g., a windmill on the waterfront. After a while, however, you will likely want to think about doing something that "pushes the envelope". It is in the nature of community agendas that they cannot stand still. They need fresh infusions of both energetic people and ideas to thrive.

Throughout this Guide, we stress the theme of *effectiveness* of environmental interventions. In this light, we suggest that communities assemble "packages" of complementary actions that work well together and promise to build confidence in the whole enterprise. Not all of the thematic agendas laid out in Chapter 3 above have readily available models of what such packages look like at the time of writing.[37]

A SELECTION OF COHERENT PACKAGES OF PRIORITY ACTIONS

CORE THEME:	PACKAGE NAME:
Community Health Promotion and Protection	"Healthy Communities" www.takingaction.ca/ www.ulaval.ca/fsi/oms/p2En.html
Crime Prevention	"National Crime Prevention Strategy" www.prevention.gc.ca/en/
Public Safety	Safe Communities www.safecommunities.ca/
Disaster Management and Mitigation	Natural Disasters Reduction Plan Insurance Bureau of Canada www.ibc.ca/
"Green" Community Economic Development	Smart Growth Initiatives in Ontario and British Columbia. www.smartgrowth.government.on.ca/www.smartgrowth.bc.ca/.
Habitat Conservation	Nature Audit. www.wwf.Canada.org.
Pollution Prevention	"Green roofs" for healthy cities. www.greenroofs.ca/grhcc/
Resource Conservation, Renewable Resources	No multi-faceted initiatives found. Specific programs such as CHBA's "Envirohome" and R-2000 housing standards are available.
Equity in Community Services	Vibrant Communities. www.vibrantcommunities.ca/
Heritage Conservation	No multi-faceted initiatives found. Specific programs are available.
Culture of Sustainability	CitiesPlus international contest, and several other initiatives. www.citiesplus.ca/

[37] That is, based on information that is searchable on the Internet.

Perhaps your community can give leadership to the rest of Canadian communities by developing innovative packages in these fields. Alternatively, you can take up and adapt models developed elsewhere, either in Canada or abroad.

Note as well that each of the above packages mentioned is at a different stage of articulation and development. You may want to assemble a wider enough range of partnerships amongst community stakeholders who can create important synergies. You may also want to "cherry-pick" some of the historical background, current elements, associated personalities, etc. that may not be a complete "fit" with your community. These packages may still be of great value as inspirations to your own efforts. As well, you can "mix and match", for example, linking elements of "vibrant communities" with those of "safe communities".

4.4 Tools for Priority-Setting

Priority-setting tools need to be applied consistently at three different levels, and to become part of the personal, corporate and community cultures of decision-making to produce lasting results for sustainability.

LEVELS OF PRIORITY-SETTING AND APPROPRIATE FORMATS

LEVEL: STAGE OF PRIORITY-SETTING:	INDIVIDUAL DECISION-MAKER:	ORGANIZATION/ INSTITUTION	WHOLE COMMUNITY
Finding best available knowledge.	List of key questions about priorities.	Research plan and plan for developing indicators.	Community environmental baseline statement.
Ranking solutions.	Literature search results to respond to questions.	Corporate strategy document for management consideration.	Community sustainability vision and plan.
Building support.	Schedule of consultation events.	Public consultation and outreach plan.	"What we heard" consultation reports.
Making results stick.	Daily priority implementation list of tasks. Variance reports to management.	Performance reports and corporate indicators of contributions to sustainability.	Annual reports of community progress toward greater quality and sustainability.

As is the case throughout this Guide, these are suggested formats only. However, they are based on the experience of many communities engaged in sustainability planning and programs, as well as standard management techniques.

4.5 Conclusion

4.5.1 Key Sources of Support for More Sustainable Communities

Overcoming inertia is the largest challenge facing leaders concerned to improve their communities. Fortunately, they are no longer alone in facing this challenge. Innovation in infrastructure and building technologies is much more welcome than in decades past. Environmental issues are now part of the bedrock of Canadian values and culture. Four signal examples of these developments are outlined here as stepping-off points for community sustainability planning and action:

- Green Municipal Funds.
- The National Guide to Sustainable Municipal Infrastructure: Innovations and Best Practices.
- The FCM Quality of Life Reporting System.
- CMHC Guides to Sustainable Community Planning and Development and also to Municipal Infrastructure.

4.5.2 Green Municipal Funds

Managed by the Federation of Canadian Municipalities, there are two complementary Green Municipal Funds, both based on the view that while innovation is key to creating sustainable communities, municipal governments need sound information before investing in radically new approaches. The Funds are intended to share the risk of exploring new technologies or best practices.

The Green Municipal Enabling Fund (GMEF) has $50 million and provides grants to support feasibility studies. Operating from 2000 to 2007, GMEF expects to support a large number studies to assess the technical, environmental and/or economic feasibility of innovative municipal projects. Grants cover up to 50 per cent of eligible costs to a maximum grant of $100,000. GMEF is open to Canadian municipalities and their public-sector or private-sector partners. Applications are accepted year round. For further information, check www.fcm.ca/scep/support/Gmef/gmef_index.htm.

The Green Municipal Investment Fund (GMIF) is a $200 million permanent revolving fund that supports the implementation of highly innovative environmental projects. Municipal governments in Canada that implement such projects can have a significant impact on improved environmental performance, particularly in reducing emissions of greenhouse gases. GMIF provides municipal governments with the tools to help realize this potential.

Through GMIF, a municipal government can borrow at the preferred interest rate of 1.5 per cent below the Government of Canada bond rate. Public and private-sector partners of municipal governments are also eligible for loans at attractive rates. GMIF finances up to 15 per cent (25 per cent in exceptional circumstances) of the capital costs of a qualifying project. GMIF can also provide loan guarantees. Loan payback periods may range from four to ten years. The Fund is open to Canadian municipalities and their public sector or private-sector partners. Applications are accepted year-round. For more details, go to www.fcm.ca/scep/support/GMIF/gmif_index.htm.

4.5.3 National Guide to Sustainable Municipal Infrastructure

The Guide is funded by the Infrastructure Canada program, the National Research Council Canada, and through in-kind contributions from public and private municipal infrastructure stakeholders. It aims to provide a decision-making and investment planning tool as well as a compendium of technical best practices. It provides a road map to the best available knowledge and solutions for addressing infrastructure issues. The National Guide is also a focal point for the Canadian network of practitioners, researchers and municipal governments focused on infrastructure operations and maintenance. It offers the opportunity to consolidate the vast body of existing knowledge and shape it into best practices that can be used by decision-makers and technical personnel in the public and private sectors.

It provides instruments to help municipalities identify needs, evaluate solutions, and plan long-term, sustainable strategies for improved infrastructure performance at the best available cost with the least environmental impact. The five initial target areas of the National Guide are: potable water systems (production and distribution); storm and wastewater systems (collection, treatment, disposal); municipal roads and sidewalks; environmental protocols and decision-making; and investment planning. Go to www.infraguide.gc.ca to find out more about how to consult it.

4.5.4 FCM Quality of Life Reporting System

The goal in launching the Quality of Life (QOL) project in 1999 was to develop a compelling picture of quality of life in Canadian communities and to identify trends and issues that might escape traditional measures of public policy outcomes. It consists of a set of eight indicators that amount to a report card on the quality of life in urban Canada. Each indicator is supported by a substantial database of quality-of-life measurements. The project focuses on the real-life consequences of public policies on people and is an innovative tool that contrasts with traditional program evaluators. The latter have tended to consider impersonal standards of delivery of services or benefits, without much reference to their effects.

Led by FCM and a team of officials from 16 participating municipal governments from across the country, the QOL project is being developed through a multi-phased approach. The first phase involves generating baseline quantitative measures of quality of life, but does not attempt to analyze causes or derive trends. Later phases involve complementing and verifying these through a series of qualitative measures. In addition, existing indicators will be reviewed and refined, and new measures in the economic and environmental domains will be added. For more details: www.fcm.ca/english/communications/qualitylife.htm.

4.5.5 CMHC Guides to Sustainable Community Development

In recent years, Canada Mortgage and Housing Corporation (CMHC) has published quite a number of guides and studies of great value for sustainability planning and decision-making. CMHC also provides a variety of more specific information resources in support of water efficiency, sustainable landscaping, climate change adaptation, climate change mitigation, energy efficiency, sustainable transportation, and waste reduction.

Key CMHC guides include:

- *Sustainable Community Planning and Development: Participation Tools and Practices*.
- *Sustainable Community Planning and Development: Design Charrette Planning Guide*.
- *Sustainable Community Development Demonstration in Okotoks, Alberta: Testing Consumer Receptivity*.
- *Residential Intensification Best Practices From Across Canada*.
- *Residential Street Pattern Design*.

To search for these publications on-line, click on www.cmhc-schl.gc.ca and go to the Research Highlights section.

Turning to municipal infrastructure, there are three CMHC publications of particular note.

Alternative Methods of Financing Municipal Infrastructure is intended to serve as a backgrounder for the other two studies. It looks at infrastructure finance generally: the evolution of the issues, the challenges facing municipalities, and different financing methods.

The paper evaluates infrastructure financing mechanisms that are alternative or supplementary to government financing. The report identifies a large expenditure gap, in the tens of billions of dollars, related to both upkeep of existing facilities and new requirements. It concludes that different infrastructure financing mechanisms are not necessarily substitutes for one another: some are more appropriate for certain types of facilities than others.

Provision of Municipal Infrastructure Through Demand Management: Guidebook and Case Studies looks at the ability of demand management measures to contribute to meeting future water and wastewater infrastructure demands. Demand management deviates from traditional water and wastewater system planning by focusing on why demand peaks occur and how to reduce them. It aims to shape demand, as a precursor to meeting it. The study describes these techniques, identifies how to tailor programs to community needs, and introduces tools for planners, engineers, and administrators to reduce water use and wastewater flow by reducing leaks, inflow and infiltration.

Public-Private Partnerships in Municipal Infrastructure explores the potential for public-private partnerships to fund the provision, operation and maintenance of municipal infrastructure and examines the impacts on service quality and costs to existing and new homeowners. It discusses the strengths and weaknesses of different partnership models and presents case studies that shed light on which models are appropriate to what conditions

4.5.5 An Invitation to Comment

This Guide builds on a vast amount of effort by many individuals, advocacy groups, and organizations over much of the past century and into the current one.
It captures the state of play in Canada during the early part of the 21st century. If it turns out to be of value to community practitioners, it can evolve further and become an "evergreen" document with modest additional effort. Readers are certainly invited to comment on it and to add to it. Please send your critiques and contributions to bayswatr@istar.ca.

ANNEXES:

ANNEX "A": SOME HANDY CHECKLISTS AND FORMATS

In this Annex, you will find a series of more detailed checklists and formats than could be readily offered in the body of the text. Their main audience is the advisors to mayors and councils, as well as leaders of community advocacy groups, researchers, and others. Some of the checklist use slightly different language than you will find in the main text. This is because they represent different "clusters" of priorities, grouped around common themes within the hierarchy of human and community needs described at the beginning of the Guide.

Here is a list of what you will find for ready reference:

A-1: Briefing Senior Management on Priority Issues

A-2: Measures of Need for Action and Effectiveness for Community Health Promotion And Protection

A-3: Checklist on Information Availability for Community Health Promotion And Protection

A-4: Ranking Potential Solutions for Community Health Promotion And Protection

A-5: Measures of Need for Action and Effectiveness for Crime Prevention, Public Safety, Disaster Management and Mitigation

A-6: Checklist on Information Availability for Crime Prevention, Public Safety, Disaster Management and Mitigation

A-7: Ranking Potential Solutions for Crime Prevention, Public Safety, Disaster Management and Mitigation

A-8: Measures of Need for Action and Effectiveness for "Green" Community Economic Development

A-9: Checklist on Information Availability for "Green" Community Economic Development

A-10: Ranking Potential Solutions for "Green" Community Economic Development

A-11: Measures of Need for Action and Effectiveness for Habitat Conservation and Heritage Conservation

A-12: Checklist on Information Availability for Habitat Conservation and Heritage Conservation

A-13: Ranking Potential Solutions for Habitat Conservation and Heritage Conservation

A-14: Measures of Need for Action and Effectiveness for Pollution Prevention, Resource Conservation, and Renewable Resources, Part I

A-15: Measures of Need for Action and Effectiveness for Pollution Prevention, Resource Conservation, and Renewable Resources, Part II

A-16: Checklist on Information Availability for Pollution Prevention, Resource Conservation, and Renewable Resources

A-17: Ranking Potential Solutions for Pollution Prevention, Resource Conservation, and Renewable Resources

A-18: Measures of Need for Action and Effectiveness for Increasing Equity of Community Services

A-19: Checklist on Information Availability for Increasing Equity of Community Services

A-20: Ranking Potential Solutions for Increasing Equity of Community Services

A-21: Measures of Need for Action and Effectiveness for Creating a Culture of Sustainability

A-22: Checklist on Information Availability for Creating a Culture of Sustainability

A-23: Ranking Potential Solutions for Creating a Culture of Sustainability

A-1: BRIEFING SENIOR MANAGEMENT ON PRIORITY ISSUES[38]

Each year many books and articles appear around the world on management decision-making, leadership, goal-setting, and achieving management success.
Based on this literature, there is a recognizable pattern of management decision-making. There are six important components with an optimum order. For decisions that matter, all six come into play. Omitting or skipping a component, or changing the order risks giving rise to mistakes.

Each of the six components has three powerful common elements:

1. Factual basis: What we actually know, can count on, trust, or see.

2. Real-time: On issues that matter, ideally there is a very small gap in time between decision and action. The larger the separation between decision and action the greater the likelihood that significant factual change may make a portion or all of the action less than optimum.

3. Outcome focus: Strategic decision making is always about the future. The past can only be re-imagined, reconfigured, rewritten, relived, and reinterpreted. It can't be changed. Looking forward allows us to set the past aside and deal in today and tomorrow. This is a much more positive approach.

In theory, management decision-making goals are easily identified: decisions are rational; reasoning is logical. If the process can achieve rationality and logic, the decisions made and actions taken will be unemotional and incremental. Decisions achieving this level of clarity will seem well motivated and effective.

Reality is quite different. More typical managerial decision making is incident- driven; management has little choice about the size, the scope, sequence, or timing of events. Situations are often so underfactualized that logic is very difficult, if not impossible. Information is always insufficient. Often the more important the decision, the more likely it will be pushed off until it has to be made on an urgent basis where management has little choice but to invest enormous amounts of emotion and energy into the execution and rationalization of decisions and timing. Real communication is either nonexistent, via the grapevine, or defensive. Results are inconclusive. What is achieved is not nearly what was contemplated. So, the exact same process gets repeated, several times.

Decision-making this way shows management to be insufficiently prepared. Management will not like it, but will move on to the next set of decisions.

[38] This is adapted from an article to be found at: www.e911.com/monos/A002c.html.

Fairly chaotic decision-making situation is reality to be addressed by strategic advisors. Their challenge is translating what we so easily and intuitively arrive at into a fact-based, real-time, outcome-focused approach that senior management can actively absorb. Your contribution to the decision-making process will insert your knowledge into the selection of a course of action. You could be asked to stick around to help with other issues, too.

Understanding thinking styles of managers and those who advise them makes clear the need to transform information so its true value can be absorbed into strategic objectives, and to help manage some of the chaos, too. Since most managers are predominately process thinkers and linear decision makers, information coming their way that does not neatly fit into some part of their thinking style is noted, but is then discarded or becomes quickly irrelevant.

How information is structured when presented to management is very important. No matter how bold the solution proposed, its obvious common sense, or its absolute applicability, managers may not absorb it unless it fits into their processing capacity, builds on their intuitive skills and experience, and allows them critical space to assimilate. If it also happens to be brilliant and creative, that is fine but often not essential.

Brevity is crucial. The Strategic Decision-making Worksheet below, is a valuable tool on one side of a single sheet of paper. Remember, we are talking strategy here, not planning. Avoid overkill. Other good reasons for brevity are:

- There will be just a few minutes to explain it (600 words or less).

- Concentrated, well-structured information is easier to include and more likely to achieve ownership by others. Most critical decisions are made based on experience, intuition, and some recently-gathered facts. If the information is provided in a manual with 10 tabs and says "Plan," before the strategy and goals are even read, they may have to be re-done and will probably be ignored anyway.

- If the "strategy" cannot be adequately addressed in this structure, it is probably not a strategy.

Here are some notes on the key elements of a priority issue briefing note:

1. Situation: A brief description of the nature of the issue, problem, or situation that requires decision, action, or study. This is the factual basis or "Here's what we know now."

2. The Goal: A clear, concise statement of the task to be accomplished (sometimes the reason or purpose for accomplishing it) or the target to be reached and why. Goals keep everyone focused. Useful goals are understandable, achievable, brief, positive, and time/deadline sensitive.

3. Analysis/Assumptions: A brief description of what the situation means, what its implications are, and how it threatens or presents an opportunity to the organization. Include the one or two key assumptions that validate the analysis. Managers always need to know why, but not in great detail. They are also interested in the intelligence you have gathered or know about that supports your analysis and assumptions.

4. Options: Provide at least three response options for the situation as presented and analyzed. This is the area where intuitive thinkers fail frequently. They focus on the "silver bullet". If you have only one recommendation and there are even a couple of questions about it, it will die and you may be out of the discussion for the duration. For example, what if you are asked, "What if we do nothing?" Doing nothing should always be an option in every strategy, and thoroughly examined. Recommend your optimal choice and recommend things you can and will do. Be prepared to do something in between the things you have recommended.

5. Recommendation: This is specifically the choice you would make among the options presented. The recommendation is usually selected on the basis of which option will cause the least number of unintended negative consequences. This is where you earn your paycheque. The boss always wants to know what you would do if you were in his/her shoes. Be prepared to walk through a similar sort of analysis for each of the options proposed.

6. Unintended consequences: These are the reactions or circumstances that could arise resulting from the options you suggested or by doing nothing. Every management decision or action has consequences that can be forecast. Each also has unintended consequences that can be forecast. Inadequate provision for consequences is what sometimes can sabotage an otherwise useful strategy.

This is a strategic approach. It leads to productive, focused planning. Use it and you will get to help managers at every level in their strategic decision-making.

STRATEGIC DECISION-MAKING WORKSHEET

KEY ISSUE: _____

SITUATION:

A brief description of the nature of the issues, problem, or situation that requires decision, action, or study.

GOAL:

A clear, concise statement of the task to be accomplished.

ANALYSIS/ASSUMPTIONS:

A description of what the situation means, what its implications are, and how it threatens or presents an opportunity to the organization.

OPTIONS:

Provide at least three response options for the situation as presented and analyzed.

RECOMMENDATION:

The choice you would make among the options presented. The recommendation is usually selected on the basis of which option will cause the least number of unintended consequences.

UNINTENDED CONSEQUENCES:

Reactions or circumstances that could arise from the options you suggested or by doing nothing.

A-2: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS FOR COMMUNITY HEALTH PROMOTION AND PROTECTION

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Improve population health.	Cases of infectious diseases compared to national average. Days of work lost due to illness. Rates of smoking, obesity, and drug abuse.	Reduced rates of infectious diseases Reduced rates of smoking. Reduced rates of alcohol and drug abuse.
Reduce health risks from regulated industries and facilities.	Cases of food poisoning in restaurants and other commercial eating establishments. Cases of chemical poisoning from spills and contamination. Cases of emphysema and other illnesses directly related to regulated environmental conditions.	Reduced rates of food poisoning. Reduced rates of chemical poisoning. Reduced rates of illness caused directly by environmental conditions.

A-3: CHECKLIST ON INFORMATION AVAILABILITY FOR COMMUNITY HEALTH PROMOTION AND PROTECTION

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
The main points at which our community is vulnerable to illness or epidemics through infection: water supply; food supply; sexual practices; drug trafficking; carriers of disease.			
How much making our community less vulnerable to technological breakdowns -- electrical system, transport system, chemicals production facilities, water supply system, waste collection and treatment systems -- also contributes to improved population health.			
How much making our community less vulnerable to natural disasters -- hurricanes, tornadoes, earthquakes, flooding, landslides -- also contributes to improved population health.			
How much programs to reduce accidents in our community -- traffic, playground, workplace, home -- also contributes to population health.			
How much programs to enhance the community economic and environmental base also contribute to improved population health.			
How much programs to protect cherished habitats and social networks also contribute to improved population health.			
How much programs to conserve natural resources also contribute to improved population health.			
How much programs to distribute environmental costs and benefits more fairly also contribute to improved population health.			
How much programs to improve comparative community quality of life also contribute to improved population health.			

A-4: RANKING POTENTIAL SOLUTIONS FOR COMMUNITY HEALTH PROMOTION AND PROTECTION

OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS IN DECLINING DEATHS AND DISABILITIES OVER TIME:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE IN REDUCING DEATH/ DISABILITY RATES:
Campaigns to promote healthy diets					
Mother-child counselling programs					
Community-based exercise programs, e.g., ParticipAction					
Pre-natal preparation programs					
Needle-exchange programs					
Stop-smoking programs					
Drug and alcohol awareness programs					
Restaurant inspections					
Public washroom inspections					
Drinking water testing					
Swimming area inspections					
Rental property inspections					

A-5: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS ON CRIME PREVENTION, PUBLIC SAFETY, DISASTER MANAGEMENT AND MITIGATION

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Reduce crimes against persons and property.	Rates of serious offences compared to national average. Public opinion poll results indicating high levels of concern.	Declining rates of serious crimes. Declining rates of incarceration. Polling results showing improving public perceptions of security from crime.
Improve safety in relation to routine accidents.	Rates of deaths and injuries from accidents. Local rates of accidents compared to national average. Polling results on public views of their safety.	Declining rates of injuries, both in absolute terms and compared to national average. Polling data on improving public perceptions of safety.
Improve chances of surviving a future disaster.	Disaster losses in previous years. Assessment results on vulnerability of building structures to disasters.	Declining disaster losses, when these occur. Engineering assessment results showing reduced vulnerability of structures.
Prepare to respond to a future disaster.	Predictors of future disaster, e.g., existence of earthquake fault lines.	Successful emergency response exercises.

A-6: CHECKLIST ON COMMUNITY INFORMATION AVAILABILITY FOR CRIME PREVENTION, PUBLIC SAFETY, DISASTER MANAGEMENT AND MITIGATION

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
The main points at which our community is vulnerable to technological breakdowns: electrical system; transport system; chemicals production facilities; water supply system; waste collection and treatment systems.			
The main points at which our community is vulnerable to natural disasters: hurricanes; tornadoes; earthquakes; flooding; landslides.			
The main patterns of accidents in our community: traffic; playground; workplace; home.			
How much programs to promote population health contribute to reduced deaths and injuries.			
How much programs to enhance the community economic and environmental base contribute to reduced deaths and injuries.			
How much programs to protect cherished habitats and social networks contribute to reduced deaths and injuries.			
How much programs to conserve natural resources contribute to reduced deaths and injuries.			
How much programs to distribute environmental costs and benefits more fairly contribute to reduced deaths and injuries.			
How much programs to improve comparative community quality of life contribute to reduced deaths and injuries.			

A-7: RANKING SOLUTIONS FOR CRIME PREVENTION, PUBLIC SAFETY, AND DISASTER MANAGEMENT AND MITIGATION

OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS IN DECLINING DEATHS AND INJURIES OVER TIME:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE IN REDUCING DEATH/ INJURY RATES:
Place cameras at red lights and Stop signs					
Run "Smart Risk" programs					
Redesign intersections to increase visibility					
Redesign roadways to reduce traffic conflicts					
Adopt traffic calming measures, e.g., speed bumps					
Run community disaster awareness programs					
Limit flood plain development					
Build dykes					
Strengthen structures to reduce potential damage					
Increase reliance on renewable energy sources					
Do community vulnerability assessments followed by action planning					

A-8: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS: "GREEN" COMMUNITY ECONOMIC DEVELOPMENT

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Strengthen and diversify community industrial base with additional investment.	Unemployment rate compared to national average. Reliance on narrow range of resource-based or otherwise vulnerable industries.	Reduction in unemployment. Increase in company payrolls.
Expand environmental industries	Environmental problems not able to be locally addressed. Niche markets not yet addressed by local firms. Successful local environmental industries not yet exporting or expanding.	Increase in employment in "green" jobs.
Increase numbers of locally-owned businesses that meet or exceed environmental standards.	Unemployment rate. Numbers of local enterprises closing their doors. Numbers of business start-ups failing due to lack of incubation and support.	Increase in local tax base.

A-9: CHECKLIST ON INFORMATION AVAILABILITY: "GREEN" COMMUNITY ECONOMIC DEVELOPMENT

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
The main points at which our community is vulnerable to sudden large job losses: major employers leaving; depletion of natural resource base; global economic downturn.			
The main trends in community employment by different sectors and in relation to global and national trends.			
How much programs to reduce our vulnerability to technological breakdowns, natural disasters, and accidents also contribute to enhancing our economic and environmental base.			
How much programs to promote population health also contribute to enhancing our economic and environmental base.			
How much programs to protect natural habitats, built heritage, and social networks also contribute to enhancing our economic and environmental base.			
How much programs to conserve natural resources also contribute to enhancing our economic and environmental base.			
How much programs to distribute environmental costs and benefits more fairly also contribute to enhancing our economic and environmental base.			
How much programs to improve comparative community quality of life also contribute to enhancing our economic and environmental base.			

A-10: RANKING POTENTIAL SOLUTIONS FOR "GREEN" COMMUNITY ECONOMIC DEVELOPMENT

OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS IN JOBS AND BUSINESSES THAT MEET HIGH STANDARDS. OF CLEAN PRODUCTION:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR SELECTED CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE IN CONVERTING TO SUSTAINABLE ECONOMIC FUTURES:
Service industrial parks to attract new investment to highest environmental standards					
Prepare profiles of local environmental markets and degree to which they are served.					
Prepare comprehensive marketing literature on local environmental companies.					
Develop business incubation centres for start-up environment-friendly industries.					
Prepare comprehensive marketing literature on promising local firms.					

A-11: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS FOR HABITAT AND HERITAGE CONSERVATION

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Use natural landforms effectively; avoid hazard lands.	High costs of servicing and preparing land for development. Flood losses.	Reduced flood losses.
Enhance fragile habitats and increase their value to the community.	Loss of natural habitats to development.	Reduced loss of habitats.
Preserve historical and aesthetic heritage.	Losses of heritage buildings over period from 1945 onward.	Proportion of heritage buildings preserved. Tourism earning trends.

A-12: CHECKLIST ON INFORMATION AVAILABILITY FOR HABITAT AND HERITAGE CONSERVATION

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
The main habitats and heritage structures/sites we wish to protect and nurture.			
How much needs to be invested to reverse deterioration of natural habitats, structures/areas, and what payback periods and amounts can be expected.			
How protecting and nurturing cherished natural habitats, heritage structures/areas also reduces vulnerability to technological breakdowns, natural disasters, and accidents.			
How protecting and nurturing cherished natural habitats and heritage structures/areas also improves population health.			
How protecting and nurturing cherished natural habitats and heritage structures/areas also enhances the economic and environmental base of our community.			
How protecting and nurturing cherished natural habitats and heritage structures and areas conserves energy, water, materials, and land.			
How protecting and nurturing cherished natural habitats and heritage structures/areas can also help distribute environmental costs and benefits more fairly.			
How protecting and nurturing cherished natural habitats and heritage structures/areas also improves our comparative quality of life.			

A-13: RANKING POTENTIAL SOLUTIONS FOR HABITAT AND HERITAGE CONSERVATION

/OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS OVER TIME IN REVENUES OR SAVINGS:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE IN GENERATING REVENUES/ SAVINGS:
Establishing/ expanding areas zoned for natural habitats.					
Concerted planting along boulevards and streets.					
Requiring storm-water ponding.					
Building engineered wetlands.					
Declaring heritage preservation areas.					
Subsidies for heritage rehabilitation according to standards.					
Social plans for the community as a whole.					
Inventories of social services and gaps.					
Systems of multi-purpose health and community centres.					
Concerted race relations programs.					

A-14: MEASURES OF NEED AND EFFECTIVENESS FOR POLLUTION PREVENTION, RESOURCE CONSERVATION, RENEWABLE RESOURCES, PART I

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Prevent industrial pollution	NPRI data on releases of chemicals and waste. Deaths from emphysema.	Reduction in emissions. Returns on investment on a life-cycle basis. Reduction in waste materials.
Reduce energy waste and costs of installation	Energy consumption by local industry. Energy wastage based on best practices best available technologies.	Reduction in energy consumption. Returns on investment on a life-cycle basis. Conversion to renewable energy sources.
Save energy and water and earn money from savings in existing buildings.	Energy and water consumption by buildings. Energy and water wastage based on best practices.	Reductions in energy and water consumption show by utility billings. Returns on investment on a life-cycle basis. Presence of certified higher performance equipment.
Reduce costs of overbuilding infrastructure; reduce environmental impacts of infrastructure.	Costs of building infrastructure compared to best practices. Costs of operating infrastructure compared to best practices.	Reduced costs of construction. Returns on investment on a life-cycle basis. Reduced costs of operation.
Reduce energy, water and materials wastage in new buildings; increase comfort and aesthetic pleasure.	Costs of constructing new buildings compared to best practices. Costs of operating new buildings compared to best practices.	Reduced costs of construction. Returns on investment on a life-cycle basis. Reduced costs of operation.

A-15: MEASURES OF NEED AND EFFECTIVENESS FOR POLLUTION PREVENTION, RESOURCE CONSERVATION, RENEWABLE RESOURCES, PART II

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Reduce personal transportation costs and difficulties through infill development. Eliminate costs for installing new infrastructure.	Journey-to-work times. Traffic volumes. Individual transportation costs. Comparative costs of extending services to new developments.	Reduced journey-to-work times. Reduced traffic volumes. Reduced individual transportation costs. Increased transit ridership. Reduced costs for servicing new developments. Returns on investment on a life-cycle basis.
Reduce solid waste going to landfills.	Amount of solid waste going to landfill.	Reductions in solid waste going to landfill. Increases in revenues from sale of recycled materials. Earnings from waste-to-energy systems. Returns on investment on a life-cycle basis.
Reduce temperatures of cities and associated health and environmental impacts.	Temperature in the cores of cities compared to ambient temperature. Cases of asthma and other respiratory diseases compared to other localities with lower temperatures.	Reductions in ambient temperatures in core areas. Amount of alternative brighter surfaces laid compared to darker surfaces. Numbers of roof gardens planted. Returns on investment on a life-cycle basis.

A-16: CHECKLIST ON INFORMATION AVAILABILITY FOR POLLUTION PREVENTION, RESOURCE CONSERVATION, RENEWABLE RESOURCES

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
How our community currently uses and wastes natural resources: energy; water; materials, land.			
Amounts consumed and wasted by type: energy; water; materials; land.			
Energy, water, and materials savings feasible using best available practices and technologies; pay-back periods for investing in these on a life-cycle basis.			
Land savings feasible by using best available planning, development and redevelopment practices and technologies; pay-back periods for investing in these.			
How conserving energy, water, materials and land can also reduce vulnerability to technological breakdowns, natural disasters, and accidents.			
How conserving energy, water, materials and land can also improve population health.			
How conserving energy, water, materials and land can also enhance the economic and environmental base of our community.			
How conserving energy, water, materials and land can also protect cherished habitats and heritage areas.			
How conserving energy, water, materials and land can help increase equity of community services.			
How conserving energy, water, materials and land can improve our comparative quality of life.			

A-17: RANKING POTENTIAL SOLUTIONS FOR POLLUTION PREVENTION, RESOURCE CONSERVATION AND RENEWABLE RESOURCES

OPTIONS (EXAMPLES):	GENERATE NET REVENUE: SHORT PAY-BACK PERIOD (1-3 YEARS)	GENERATE NET REVENUE: LONG PAY-BACK PERIOD (4-10 YEARS)	BREAK EVEN OVER LONGER TERM (5-10 YEARS)	REQUIRE HIGH-IMPACT CAPITAL SUBSIDY, BUT BREAK EVEN ON OPERATION
Community drive to promote clean technologies with industry and infrastructure				
Community multi-material recycling facility				
Community co-generation: conventional fuel				
Community co-generation: fuel from waste				
Community wind generation systems				
Community geothermal systems				
Individual solar collection systems				
Individual solar hot water heating systems				
Community solar collection systems				
Community low-head hydro systems				

A-18: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS FOR INCREASING EQUITY OF COMMUNITY SERVICES

GOAL:	MEASURES OF RELATIVE NEED:	MEASURES OF EFFECTIVENESS:
Reduce or eliminate homelessness	Numbers of homeless persons and families. Numbers turned away by hostels and shelters. Rate of evictions from rental accommodation. Vacancy rates in rental accommodation.	Numbers of homeless persons and families. Numbers turned away by hostels and shelters. Rate of evictions from rental accommodation. Vacancy rates in rental accommodation.
Bring Aboriginal communities up to Canadian norms of conditions and services	Numbers of dwellings without basic water and sanitation services. Cases of water-borne diseases. Cases of tuberculosis. Physical state of repair of dwellings based on inspection. Rates of suicide and family violence.	Numbers of dwellings without basic water and sanitation services. Cases of water-borne diseases. Cases of tuberculosis. Physical state of repair of dwellings based on inspection. Rates of suicide and family violence.
Bring rural communities to appropriate standards of services and of connection to other Canadians.	Numbers of dwellings without basic water and sanitation services. Cases of water-borne diseases. Cases of tuberculosis. Physical state of repair of dwellings based on inspection. Rates of suicide and family violence.	Numbers of dwellings without basic water and sanitation services. Cases of water-borne diseases. Cases of tuberculosis. Physical state of repair of dwellings based on inspection. Rates of suicide and family violence.
Bring basic levels of services to all urban neighbourhoods.	Physical state of repair of dwellings based on inspection. Recreational facilities per capita of different neighbourhoods. Amount of open space per capita in different neighbourhoods.	Physical state of repair of dwellings based on inspection. Recreational facilities per capita of different neighbourhoods. Amount of open space per capita in different neighbourhoods.

A-19: CHECKLIST ON INFORMATION AVAILABILITY FOR INCREASING EQUITY OF COMMUNITY SERVICES

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
The main areas and activities in which our community is currently not fair to all income groups or neighbourhoods in distributing environmental and health conditions, costs and benefits.			
The main indicators for rising discontent with current unfairness of environmental and health conditions, costs and benefits: street crime; vandalism and graffiti; higher costs of hospital and emergency care, etc.			
How much needs to be invested to make distribution of environmental and health conditions, costs and benefits fairer, and what payback periods and amounts can be expected.			
How fairer distribution of costs and benefits can also reduce vulnerability to technological breakdowns, natural disasters, and accidents.			
How fairer distribution of costs and benefits also improves population health.			
How fairer distribution of costs and benefits may also enhance the economic and environmental base of our community.			
How fairer distribution of costs and benefits can also protect and nurture cherished natural habitats, heritage structures and areas and social networks.			
How fairer distribution of costs and benefits can also conserve energy, water, materials, and land.			
How fairer distribution of costs and benefits can also improve our comparative quality of life.			

A-20: RANKING POTENTIAL SOLUTIONS FOR INCREASING EQUITY OF COMMUNITY SERVICES

OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS IN DECLINING DEATHS AND INJURIES OVER TIME:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE IN REDUCING DEATH/ INJURY RATES:
Counselling homeless persons on accommodation options.					
Acquiring shelters or permanent accommodation for homeless persons.					
Building new housing for homeless and others in need.					
Investing in basic Aboriginal community infrastructure.					
Building new dwellings with and for Aboriginal people.					
Planning new rural community infrastructure and facilities.					
Investing in new rural community infrastructure and facilities.					
Planning new urban community infrastructure and facilities targeted to areas in most need.					

A-21: MEASURES OF NEED FOR ACTION AND EFFECTIVENESS FOR CREATING A CULTURE OF SUSTAINABILITY

GOAL:	MEASURES OF NEED FOR ACTION:	MEASURES OF EFFECTIVENESS:
Achieve a "liveable community", as defined in planning documents.	Environmental indicators showing degradation and decline of comparative quality of life.	Improvement of "liveability" as defined in planning documents.
Perform better than other communities according to an index of sustainability characteristics.	Combined index of environmental indicators showing degradation and decline of comparative quality of life.	Improvements in a composite community index.
Monitor community trends in relation to defined sustainability goals and characteristics.	Individual indicators showing degradation and decline of comparative quality of life.	Improvements in individual indicators as presented and measured in various reports, and according to expert consensus of what constitutes "improvement".
Adopt policies and measures that provide incentives for behaviours that contribute to increased sustainability.	Indicators that taxation and subsidies are clearly skewing behaviour in the direction of damaging the natural environment.	Correlations between changes in incentives and changes in behaviour.

A-22: CHECKLIST ON INFORMATION AVAILABILITY FOR CREATING A CULTURE OF SUSTAINABILITY

WE KNOW:	YES	NO	COMMENTS ON PRIORITY OF GETTING BETTER INFORMATION:
That we have a shared vision of community priorities for liveability which addresses all the elements if moving toward greater sustainability.			
That our community compares favourably with those of similar size and with similar resources and attributes.			
That we are not vulnerable to technological breakdowns, natural disasters, and accidents that would undermine or destroy our comparative advantages as a community.			
That we are taking steps to improve population health at least comparable to those taken by other communities.			
That we are taking steps to enhance the economic and environmental base of our community at least comparable to those taken by other communities.			
That we are taking steps to protect cherished habitats and heritage at least comparable to those taken by other communities.			
That we are taking steps to conserve natural resources at least comparable to those taken by other communities.			
That we are taking steps to distribute environmental costs and benefits more fairly at least comparable to those taken by other communities.			
That all relevant and significant transactions and development decisions taken in our community are considered from the above perspectives.			

A-23: RANKING POTENTIAL SOLUTIONS FOR CREATING A CULTURE OF SUSTAINABILITY

OPTIONS (EXAMPLES):	GENERATE NET REVENUES:	BREAK EVEN OVER LONGER TERM: (5-10 YEARS)	MODEST SUBSIDIES YIELD CLEAR RETURNS OVER TIME:	HIGH-IMPACT CAPITAL SUBSIDIES; BREAK EVEN ON OPERATIONS:	SUBSIDIES FOR CAPITAL AND OPERATIONS ARE HIGHLY EFFECTIVE:
Publish annual comparative community environmental indicators.					
Engage local residents in defining a vision and action plan for enhancing liveability.					
Engage local residents in detailed scenario development and regional-scale sustainability planning.					
Engage local residents in targeted environmental improvement projects with external seed funds.					
Undertake a systematic review and study tour of communities of similar size and economic base to determine lessons learned.					
Undertake targeted investments in elements of community quality of life clearly lagging behind comparable centres.					

ANNEX "B": SELECTED INTERNATIONAL INTERNET RESOURCES

Center for Neighborhood Technology
http://www.contractors.org/

Creative strategies for making cities and their surrounding areas work for everyone, environmentally and economically.

Cities Environment Reports on the Internet
http://www.grida.no/city/

An UN initiative, and part of UNEP. A program to facilitate easy access to environmental information for sound decision-making and general awareness-raising in cities.

Community Sustainability: A Comprehensive Urban Regenerative Process.
http://www.arch.wsu.edu/sustain/home.html

Washington State University's School of Architecture web site explores some interactive design-planning topics and presents a proposal for Pullman, Washington, United States.

EcoGateway
http://www.ecoiq.com/onlineresources/

EcoIQ magazine and links to a large collection of Internet resources related to sustainable communities.

Green Map System
http://www.greenmap.com/index.html

Project to promote healthy cities and sustainable communities by developing maps to chart the sites of environmental significance in urban places around the world. Includes examples.

Indicators of Sustainability
http://www.sustainablemeasures.com/

Develops indicators that measure progress toward a sustainable economy, society and environment.

International Council for Local Environmental Initiatives (ICLEI)
http://www.iclei.org/

International clearinghouse on sustainable development and environmental protection policies, programs, and techniques being implemented at the local level by local institutions. Resources and links on Local Agenda 21, Green Fleets, environmental budgeting, other topics.

Joint Center for Sustainable Communities
http://www.usmayors.org/USCM/sustainable/

Website sponsored by U.S. Conference of Mayors (USCM) and National Association of Counties

Liveable Cities for the 21st Century
http://www.priorities.org/LivableCitiesIndex.htm

The Priorities Institute examines alternative community designs, carfree cities, cohousing, recycling pantries, and other concepts and technologies to promote environmentally sustainable community life.

Making News: An Innovative Community Indicator Project
http://www.makingnews.org/default.htm

Developed by ten European cities a Community Sustainable Development Indicators (CSDIs) project that measures the quality of people's lives.

Project for Public Spaces
http://www.pps.organization

A non-profit technical assistance, research and educational organization that works internationally through programs in transportation, parks, plazas and civic squares, public markets, and public buildings to help grow public spaces into vital community places.

Smart Communities Network
http://www.sustainable.doe.gov/

Resources on the concept of sustainable development, including overview articles, slide shows, links, recommended books and videos, and educational materials and programs that can help communities in their sustainable development efforts.

Smart Growth Network
http://www.smartgrowth.org/

Searchable databases of information resources on smart growth case studies, smart building design, smart development design and zoning, brownfields redevelopment and eco-industrial parks; and related topics.

Sustainable Communities Network
http://www.sustainable.org/

Connects citizens with resources to implement innovative processes and programs to restore the economic, environmental, and social health and vitality of their communities.

The HomeTown Advantage
http://www.newrules.org/journal/hta.htm

Book published by The Institute for Local Self-Reliance, provides comprehensive strategies for reviving independent businesses and Main Streets.

Urban Environmental Management
http://www.gdrc.org/uem/

Output of the Urban Environmental Management Research Initiative (UEMRI), a grouping of urban planning researchers from around the world. Looks at urban areas as the intersection of natural, built, and socio-economic environments.

U.S. EPA Community-Based Environmental Protection
http://www.epa.gov/ecocommunity/

Case studies and other information about the place-based approach to the environment.

U.S. EPA: Green Communities
http://www.epa.gov/greenkit/

The Green Communities Assistance Kit that you will find here is packaged as a step-by-step guide for planning and implementing sustainable actions. Each of the five steps results in a specific outcome.

ANNEX "C": EVIDENCE-BASED DECISION-MAKING

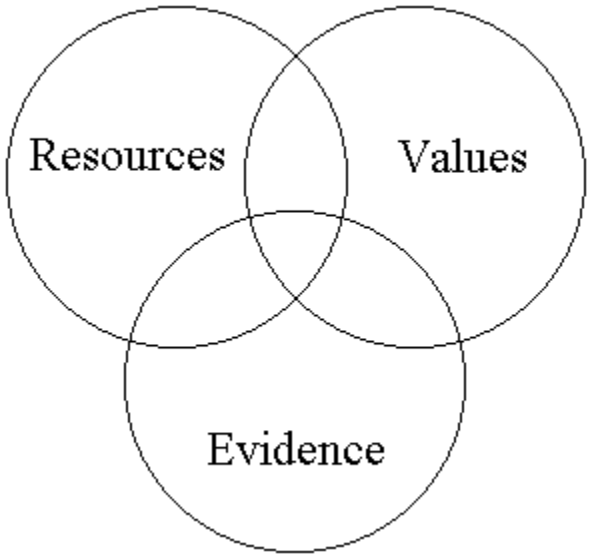
In 1996, Dr Muir Gray of the United Kingdom published a book called *Evidence-Based Healthcare*. The book explores how to make evidence-based decisions in management, policy-making and purchasing. The content outline for this book is available at: http://www.ihs.ox.ac.uk/ebh/.

In brief, the thesis of the book is that sound decisions are made when resources, values, and evidence are all brought to bear. Dr. Gray contends that currently, evidence plays too small a role in comparison with resources and values. "Evidence" in the context of health care refers mainly to results of scientific and clinical research on the outcomes of different interventions, and in particular on their effectiveness and safety.

Since the publication of the book *Evidence-Based Healthcare* the debate on evidence-based decision-making has been lively, according to Dr. Gray. This debate has focused on three main issues:

- the scope of evidence;
- the part that values play in evidence-based decision-making;
- the part that culture plays in evidence-based decision-making.

A simple Venn diagram showing the relationship between evidence, values and resources was presented in the first edition of the book:



Canadian organizations are playing a leading role in promoting the agenda of evidence-based decision-making in health care. For example, the National Forum on Health, operating between 1995 and 1997, had a specific theme on evidence-based decision-making. It was concerned with health outcomes, and what was preventing change from taking place in the health system when there was clear evidence that change was necessary and desirable.

The Canadian working group explored why the system takes so long to adopt existing information about the clinical interventions that work, and their degree of success. Its aim was to find ways to ensure that decisions about health and health care are based on the best available evidence, and to move research into practice at the level of provider, patient, and health policy. Activities of the working group were aimed at the following outcomes:

- developing a culture of evidence-based decision making;
- identifying tools for determining where there is a lack of evidence-based decision making within the system;
- developing an infrastructure which promotes evidence-based decision making. This will include accessible databases and user-friendly consumer information sources.

The group also examined what constitutes evidence, both in relation to clinical interventions and to organizational or policy level decision-making. It gathered information about existing research projects in Canada and elsewhere, looking at the use of evidence-based decision making in the health field. The group explored means of improving the availability and accessibility of reliable information and knowledge that identify how interventions, encounters, practices and programs affect health outcomes. For the ongoing Health Canada work in this field, you can consult: http://www.hc-sc.gc.ca/hppb/phdd/determinants/.

On a broader plane, evidence-based decision-making is an important aspect of the work of the CHSRF/CIHR Chair on Knowledge Transfer and Innovation, created in the summer 2000 at Laval University. The Chair was awarded for 10 years within the framework of the program CADRE (Capacity for Applied and Developmental Research and Evaluation in health services and nursing). CADRE is a partnership between the Canadian Health Services Research Foundation (CHSRF) and the Canadian Institutes of Health Research (CIHR) to develop increased capacity in applied health services and policy research, including nursing management and organization issues. Please see http://kuuc.chair.ulaval.ca/english/list.php?idr=80921.

One helpful outcome of the debate on evidence-based decision-making has been thoughtful words on the pitfalls of consensus meetings and statements in some of the difficult areas of medicine. Just as scientific experts must be wary of imposing their values on the public, the public (or at least their decision makers) need to be more deeply involved in helping to assess the scientific evidence, and especially the balance between good and harm. Perhaps as well, those in the health care field need to recognize more clearly that, where the effectiveness of any medical intervention is small, the likelihood will be that experts will disagree, as may have been the case with early mammography.

What relevance does the evidence-based decision-making movement in the health care field have for community *environmental* sustainability? Please consider the table below.

EVIDENCE-BASED DECISION-MAKING CONCEPT	PRIMARY APPLICATION IN HEALTH CARE	POTENTIAL APPLICATION TO COMMUNITY SUSTAINA-BILITY DECISIONS
Doing the right things right	Drive for greater efficiency and quality in health care.	Similar concern, perhaps under less direct pressure from public opinion.
Making decisions about health services	Focus on therapy, tests, screening and health policy and management changes.	Focus on all types of community services decisions: energy, water supply, waste management, etc.
Searching for evidence	Focus on use of information brokers and on better techniques of scanning, critical appraisal, and storing information.	Similar, with different sources and more diverse array to be scanned. Consulting engineers typically perform broker roles.
Appraising the quality of research	Determine its reliability for clinical decision-making.	Assess embedded special pleading and commercial agendas.
Assessing the outcomes found	Determine what is most effective in practice, and assess long-term costs.	Same, but in the context of less conclusive outcomes in many cases.
Organisational development for evidence-based healthcare	Promote a culture of evidence-based decision-making in the health professions.	Focus on use of these techniques among decision-makers and practitioners of planning, policy analysis, and among advocacy groups.
Developing the evidence management skills of individuals	Increase capabilities for using this method.	Same, within different disciplines.

ANNEX "D": KEY WEBSITE REFERENCES FOR PRIORITY-SETTING DATA AND INFORMATION

There is still not a lot of information on the World Wide Web that is specifically geared to helping community decision-makers set evidence-based priorities. Much of the data and information must be pulled out of wider or more specific documents that mention priority-setting only in passing or not at all.

However, here are some of the best Websites with substantial amounts of relevant materials:

- Comprehensive Website on all aspects of sustainable communities: http://kn.fcm.ca.
- Key community sustainability guides and research reports: www.cmhc-schl.gc.ca.
- How to use a wide array of indicators to set goals, plan, and measure progress toward sustainability: www.santa-monica.org.
- Useful bibliography on sustainable communities: www.umanitoba.ca/academic/faculties/architecture/la/sustainable/biblio.htm.
- A wide variety of population, industrial and environmental data: www.statcan.ca.
- Data from other Canadian Federal departments and agencies: www.gdsourcing.ca/.
- Environmental indicators covering Canada as a whole: www.ec.gc.ca/soer-ree/English/Indicator_series/default.cfm#pic.
- Guide to Results-Based Management: www.tbs-sat.gc.ca.
- Selection of tools to support sustainability planning: www.toolsofchange.com/.

Visit our home page at www.cmhc.ca